The Nexus between Environmental Corporate Social Responsibility Disclosure and Firm Performance in Pakistan

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Abstract
The corporate social responsibility (CS_R) is considered a key factor in the realm of finance and is regarded as an important aspect of investment decision-making. This research aims to look into the impact of the environmental dimension of CS_R disclosure on firm financial performance (F-P) in the Banking sector of Pakistan. This study utilizes secondary quantitative data gathered from published annual reports of publicly traded banks and the official website of the Pakistan Stock Exchange (PSX) from 2010 to 2020. The study applied the fixed effect model (F-E-M) or a random effect model (R-E-M) for analysis purposes, along with some pre-requisite diagnostic tests. The independent variable of the study is the environmental dimension of CS_R, while the dependent variable of the study is firm F-P proxied by return on assets (R-O-A) and return on equity (R-O-E) respectively. Control factors such as business size and debt ratio were also employed in the study. The outcome of the study showed that there is a significant relationship between environmental CS_R and F-P in Pakistan's banking industry. This particular research assists companies in understanding the significance of CS_R disclosure in improving the financial performance of the banking industry. The study's conclusions should have practical applications for firms, governments, financial advisors, and Pakistan's banking industry.

Keywords: *Banking industry, business size, debt ratio, environment financial advisor*

Introduction
The foundations of CSR in enterprises are multifaceted, ranging from instrumental (such as profit maximization) to non-instrumental (such as social well-being enhancement). The term "CS_R" refers to corporate actions and policies that assess, regulate, and oversee a company's societal and environmental responsibilities (Aerts & Cormier, 2009). CS-R is a strategic subject for corporations in which trust between the company and society can be created. CS_R is a concept that asserts that a corporation's everyday business decisions and strategy design should be accountable to its employees, suppliers, consumers, shareholders, and other stakeholders. CS_R is an aspect of a company's economic, legal, and moral operations (Moravcikova et al., 2015). Companies' CSR practices will strengthen their corporate reputation (Godfrey, 2005).

Researchers and governments are interested in CS-R metrics that coordinate stakeholders' well-being (Velte, 2021). Several studies have been conducted on the relationship between CS-R and F-P (Margarida & Fernandes, 2022). CS_R has a positive impact on corporate F-P, according to Molnár et al. (2021). Similarly, Fuadah et al. (2019) claim that CS_R improves financial performance. Dembek et al. (2018) believe that CS_R has a positive impact on corporate financial performance. CS_R is more than just a moral gesture; it also ensures a pleasant working environment for an organization's employees, pays fair wages, gives regular vacations, cares as a human being, and protects society's environment.

Apart from the compulsions of law and the primary purpose that corporations are supposed to execute for the sole advantage of shareholders, CS_R is a corporate move for the benefit of society as a whole. CS_R is a concept that asserts that a corporation's everyday business decisions and strategy design should be accountable to its employees, suppliers, consumers, shareholders, and other stakeholders. Companies integrate and balance their commercial activities to benefit individuals, communities, and society by utilizing economic, social, and environmental issues. The main purpose of CS_R is to introduce some ethical practices in businesses and make it mandatory for organizations to follow these practices. All of these practices contribute to increasing the level of satisfaction among all stakeholders in organizations. CS_R is considered to be a corporate strategy meant to be considered as a legal rule for the betterment of organizations. If organizations follow this strategy in true letter and spirit, it will help the organizations increase their financial performance in the long run. Many businesses, though, are still unfamiliar with the concept. Customers are increasingly buying from companies that care, or appear to care (Shamsi et al., 2019).

The banking business is critical to the effective distribution of capital. The business of a bank is dependent on deposits, so it is necessary for them to monitor all the economic and financial benefits related to their long-term growth and success. By considering all these benefits in their minds, they apply the legal rules and work for the social welfare of the societies where they are working (Kiliç et al., 2015). Banks are encouraged to function more ethically and socially in their financing and investing activities in order to protect the legitimate interests of their stakeholders (Chiu, 2014). Given the current state of the environment and the difficulties that businesses experience in reflecting the influence of their actions on the environment in which they operate, it is critical to comprehend the impact of the environment on financial performance. While manufacturing products and providing goods and services, environmental management illustrates the company's efforts and promises to preserve natural resources and protect the ecosystem. The literature has extensively explored the relationship between environmental CSR and financial performance. Russo and Fouts (1997) argued for a progressive link between environmental obligations and financial success, claiming that environmentally friendly businesses produce positive consumer impressions, avoid potential government fines, and save resources for long-term development. Both Islamic and conventional banks invest in the environment to benefit society. Environmental protection encompasses a wide range of projects such as water purification, societal cleaning, and so on. As a result, this factor influences financial performance. This social welfare improves financial performance after investment. Sports activities, CS-R spending, and other forms of social welfare are examples. All Islamic and conventional banks invest in health, such as hospitals, medical institutions, and the healthcare sector. These elements contribute to the banking sector's goodwill. As a result, increasing goodwill naturally improves financial prosperity (Malik and Nadeem 2014).

Literature Review

Zhu and Zhang (2015) examine the influence of CS_R on China banks' roles in green lending from 2008 to 2018, using CS_R as a dependent variable and F-P as a dependent variable, and find that it has a positive relationship with F-P. According to Ramzan et al. (2021), CS_R and F_P have a significant relationship with each other. CS_R is characterized as an umbrella word that encompasses multiple interconnected disciplines, including stakeholder theory, organizational citizenship behavior, organizational sustainability, and overall business ethics practices.

According to Freeman and Hasnaoui (2011), CS_R is a broader concept covering various dimensions that will benefit all the stakeholders, such as social, ethical, philanthropic, legal, and environmental. According to the stakeholder theory, organizations must provide long-term benefits to their stakeholders in both the short and long term. If organizations want to achieve the success that is sustainable over a long period of time, it is necessary for them to apply CS-R in their organizations. Managers must keep employees' and stakeholders' interests aligned and moving in the same direction in the workplace. CS_R is viewed from a variety of perspectives. CS_R is defined as a company's dedication to ethical issues. This ensures the reconciliation of the links between the economy, communities, and society. It is also about fairness between the parties concerned. CS_R refers to an organization's commitment in the course of doing business. Such a commitment ensures that CS_R stakeholders' interests are aligned (Alshammari et al., 2015). Szege et al. (2020) study the association between CS_R and F_P. Data for the study were acquired between 2008 and 2018 from banks' annual reports, financial websites, the State Bank of Pakistan (SBP), and PSX. This study used content analysis and panel data approaches. The findings show that commercial banks participate in CS_R initiatives and that correct disclosure has contributed to the development of F&P at the firms. Based on the above studies, it is determined that CS_R is very important for increasing organizational performance. Therefore, the study develops the following hypotheses:

Hypothesis: Environmental CSR and financial performance have a significant positive relationship.

Research Methodology

Research Population Sampling and Data Collection

The study used a fixed or random effect model, and some specific diagnostic tests to test the said relationship. The study relied on annual reports from all banks listed on the Pakistan Stock Exchange from 2010 to 2020 to collect data. Several environmental reforms, as well as the concept of green banking, its rules, and the corporate governance codes of 2012, 2017, and 2019, were implemented in Pakistan during this time period.

Firm Performance (ROA & ROE) = $\alpha + \beta 1$ (Environmental) + Control variable (debt ratio, capital ratio) + e

Financial Performance

Two accounting factors were used to assess the firm financial performance (profitability): return on assets and return on equity.

ROA

ROA measures management's efficiency in terms of the ability of its assets to generate profits. It is one of the most widely used and accurate financial performance indicators.

ROA = Earnings before interest and taxes/ Total assets

ROE

Net income divided by shareholder's equity. ROE calculates the profit a shareholder receives from his or her investment in the company.

ROE = Net income /Stockholder equity.

Debt Ratio

The debt ratio can be measured by dividing the total liability by the total asset.

Debt ratio = Total liabilities / Total Asset

Firm Size

We used a firm's market value to determine its size. Firm size is the total asset of the firm. Firm size can be calculated by taking the logarithm of the total asset of the firm.

Firm size = log (Total Asset)
Capital ratio = Capital /Total assets

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Data Analysis

Fixed effect models (FEM), random effect models (REM), and the Hausman test would be employed for quantitative data analysis. The information was examined with software.

Result and Discussion

Descriptive Statistics:

Descriptive statistics provide summary information on financial enterprises registered on the Pakistan stock exchange. Descriptive statistics of variables under research for the banking industry's top 20 listed banks in the Pakistan stock exchange are presented below in table 1 to better recognize the behavior of variables.

Table 1: *Descriptive Statistics*

	Mean	Maximum	Minimum	Std. Dev.	Observations
ROA	-3.3016	2.0356	0.1183	1.8791	220
RO E	-2.1229	4.5265	2.1691	1.5704	220
ENV	-0.6394	0.6931	0.6094	0.2910	220
DR	-0.1937	0.7381	-8.2940	0.6383	220
FS	2.1044	3.8727	-0.1984	0.2444	220

ROA= Return on Asset, ROE=Return On Equity, ENV=Environment, DR=Debt Ratio, FS=Firm Size.

The above table shows the result of the descriptive statistic of the banking industry to 20 listed banks in the Pakistan stock exchange for ROA, ROE, FS, DR, and ENV. All these variables show 220 annual observations. A descriptive statistic test is used to give descriptive data for minimum value, maximum value, and standard deviation, and also to recognize variables used in this research, as seen in Table 1. The result for ROA data over time exhibits a mean of -3.301641 which shows the middle value after sorting the data. The data set shows the standard deviation is 1.8791 which shows deviation from the mean of the sample. The findings show that the ROE has a mean value of -2.1229 representative averages and the middle value of the sequence correspondingly. The practical value of the standard deviation is 1.570461 which shows the degree of deviation data from the mean value. ENV has a mean value of -0.6394 and the maximum value is -0.6931. The minimum value is -1.609438 which shows two excesses of the data. The practical value of the standard deviation is 0.2910. The size of the bank has a lowest value of -0.1984 and a highest value of 3.8727, with a mean value of 2.1044 which shows an overall extension in the size of the banks and assets over the known period. The lowest statistics for the debt ratio are -8.2940, while the highest statistics are 0.7381, with a mean value of -0.1937, and a standard deviation of 0.6383 which shows a rise in the level of debt.

Correlation:

The correlation coefficient is calculated for the significance of a correlation. The correlation coefficient has a value between -1 and 1. Zero way so as to there is no correlation among the variables at all, while 1 or 1 way that there is a wholly negative or positive correlation. Positive correlation from 0 to +1; upper limit i.e. +1 is the absolute positive coefficient of correlation. A perfect positive correlation way so as to, in each part adds to of one variable, here is an equal add to in the other. The intention of relationship examination is to recognize dynamics so as to contain a particular type of relationship that reason the transformation in one to make a definite change in the other.

Table 2: *Correlation*

	ROA	ROE	ENV	DR	FS
ROA	1				
ROE	0.03**	1			
ENV	0.02**	0.04**	1		
DR	0.01**	0.01**	0.06*	1	
FS	0.04**	0.02**	0.02**	0.02*	1

Table 2 shows the correlation matrix among financial performance (ROA, ROE), environmental CSR, and other control variables are also included in the matrix such as debt ratio and firm size ROE and ROA is a dependent variable measure of financial performance. According to our study, ROA and ROE have a positive relationship with each other. Table 2 shows that the value of ROE is 0.03 have a significant positive relationship with financial performance. ENV has a positive significant relationship with the ROA, ROE, and ECO. ROA and ROE are the financial measures of financial performance while ECO is a measure of the independent variable. The ENV show a result of 0.02 with respect to ROA and 0.04 with respect to ROE which shows they have positive relationships. This study also shows ENV has significant positive results with ECO. DR and FS are also control variables that show a correlation with dependent and independent variables. DR shows a correlation with ROA and ROE is 0.01 while shows the correlation with ROA and ROE is 0.04 and 0.02. DR and FS show a positive correlation with dependent and independent variables.

Hausman Test

The Hausman test is used to select the best model from F-E-M and R-E-M. The null hypothesis supports REM, whereas the alternative hypothesis favors F-E-M.

Table 3: *Hausman test for ROA and ROE*

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
ROA	16.476415	8	0.036
ROE	13.846509	8	0.0085

This table discovered the Hausman test output, the significance of which is to choose the best possible model between FEM and REM. The interpretation of the Hausman test results is relatively simple: if the p-value is equal to or less than 5% of the significance level, the null hypothesis is rejected. The ROA for the top 20 financial sector banks listed on the Pakistan stock exchange is 0.036, which is less than 5%. As a result, the null hypothesis is rejected, indicating that F-E-M is suitable for regression analysis of the financial sector to 20 listed banks on the Pakistan stock exchange. The observed p-value for the ROE of financial firms listed in the

Pakistan Stock Exchange (top 20 listed banks) is 0.0085 which is less than the significance value of 5% which means this model rejection of the null hypothesis. The rejection of the null hypothesis demonstrates the preferred regression model.

Fixed Effect Model

The F-E-M be a regression analysis form so as to consider the link between independent and dependent variables of different entity above time. So, the fixed effects model is used to examine the impact of the variables. The fixed effect regression resolve and eliminate omitted variable partiality if you consider these unobservable factors to be time-invariant. So fixed effect model is used to analyze the may or may not impact of the independent variable on the dependent variable. The present study used a fixed-effects model for regression analysis and results are reported in tables for the banking sector listed in Pakistan Stock Exchange.

Table 4: *Fixed Effect Results for ROA*

Variable	Coefficient	Prob.
ENV	0.3856***	0.0013
DR	0.35641***	0.0062
FS	0.00659***	0.0011
C	1.8540**	0.01121
R-squared	0.63892	
Prob(F-statistic)	0.000021	

ROA= Return on asset, ENV=Environment CSR, DR=Debt Ratio, FS=Firm Size, P < 0.05 * ,P< 0.01** and P <0.001 ***

The above table 4 shows the fixed effect model results of the banking sector by using 220 annual observations for the period of 11 years spanning from 2010 -2020. As shown in the table, ENV shows a coefficient value is 0.3856 and a p-value is 0.0003 displaying a positive and statistically significant relationship. The debt ratio coefficient value is 0.35641 with a positive sign and the P value is 0.0062 showing that the debt ratio has a significant positive relationship with ROA. According to our finding firm size have a positive significant relationship with ROA. In this model, the value of R squared is 63 percent which is good enough and the value of F statistic and its significance indicate the ability of explanatory variables to the overall outcome of the variables. This table shows the value of the F statistic is 0.0000 at the significant level

Table 5: *Fixed Effect Model Results for ROE*

Variable	Coefficient	Prob.
ENV	0.3211**	0.0021
DR	0.2158**	0.0011
FS	0.1132**	0.0320
C	0.1957*	0.0199
R-squared		0.6925
Prob(F-statistic)		0.0000

ROE=Return On Equity, ENV=Environment, DR=Debt Ratio, FS=Firm Size, P < 0.05 * ,P< 0.01** and P <0.001 ***

The results of the Fixed Effect Model for the ROE of Financial Firms Listed on the Pakistan Stock Exchange are shown in Table 5. The Model incorporates 220 annual observations from 2010 to 2020. The sign of the coefficient for ENV is positive, as indicated in the table, showing a significant association with ROE and ECO. Some control factors are also employed in the study, and they show a substantial positive link with ROE. The goodness of fit is represented by the value of R square. The value of R squared in this model is 69%, which is adequate, and the F-statistics significance demonstrates the ability of the explanatory variable to explain the total outcome of the variables. The value of the F statistic in this table is 0.0000.

Conclusion and Recommendation

We examine the impact of the CS_R factor on F-P in Pakistan's banking sector over 11 years in this paper (2010-2020). Our findings show a substantial positive association between CS_R and bank FP, CS_R dimension, and bank F-P, demonstrating that CS_R efforts create a good perception in the minds of consumers, allowing them to capture customers' attention and thus increase the FP of the banking business. According to the study's findings, companies who invest more in CSR develop physically powerful relationships with their customers, which helps them decrease financial risk. According to the findings of this study, banks should prioritize CS_R efforts in order to improve their profitability. The government should push CS_R to reach a higher level.

After observing the results of CS_R's impact on financial performance, the company should have a CS_R policy in place so the firm is ready to assist the community by providing numerous benefits. The CS_R should be well-known in a way that benefits the corporation as well. The CS_R should be implemented rather than just written down. When a company spends money on society (donation), society benefits, but this does not mean that society will not pay the organization back. The society also compensates the firm in the form of goodwill, reputation, or a positive image of the firm in the mind of customers and investors.

This study focuses to investigate the impact of CSR on the financial performance of the banking sector of Pakistan. Therefore, some suggestion for future research is under. The study focused on the financial firms listed on the Pakistan stock exchange (Top 20 banks). Moreover, all listed firms on the stock exchange could use financial and non-financial firms' KSE-100 index. This study is carried out in the context of the Pakistan stock exchange so the finding of this study may apply to similar emerging markets. Hence an extension would be carried out by exploring differences and similarities with other emerging stock markets. This study depends on quantitative information published in annual reports. Future research may be needed to adopt qualitative data and used other research methodologies to provide enhanced evidence on the link between CS_R and financial performances.

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