JOURNAL OF BANKING AND SOCIAL EQUITY

OPEN ACCESS

EDITED BY
Waseem ul Hameed
The Islamia University of Bahawalpur, Pakistan

***CORRESPONDENCE**
Afshan Ali
afshaneconomist@gmail.com

SUBJECT
Green Finance

RECEIVED 24 March 2024
REVISED 26 April 2024
ACCEPTED 02 July 2024
PUBLISHED 30 June 2024

CITATION
Ali, A. (2024). Impact of CSR on Corporate Environmental Performance: Moderating Role of Green Finance. *Journal of Banking and Social Equity, 3*(1), 45-56.
https://doi.org/10.52461/jbse.v2i1.3006

JBSE DOI

ACADEMIC PAPER

Impact of CSR on Corporate Environmental Performance: Moderating Role of Green Finance

Afshan Ali[1*]

[1] Lahore Business School, The University of Lahore, Pakistan.
Email: afshaneconomist@gmail.com

ABSTRACT
The Primary objective of this research is to examine the Impact of Corporate Social Responsibility CSR on environmental performance (EP). This study also examined the role of green financing as a moderator for the correlation among corporate social responsibility (CSR) and corporate environmental performance (CEP). The data used in this study was sourced from the annual reports of Pakistan's listed companies. This study used the Panel data methods with fixed effects estimates succeeding after diagnostic tests. The results indicates that there is a strong and positive relationship between CEP and CSR. Additionally, the results of this study shows that green finance plays a mediating role between CSR and CEP. The combined effect of Corporate Social Responsibility (CSR) and Green Finance necessitates that companies grab this opportunity to increase their ecological performance to a great extent. Therefore, the present study suggests that to direct the funding towards sustainable projects, the financial institutions and governments together with other financial instruments, should promote the utilization of green bonds and loans proactively. In order to accomplish this, the green finance standards should assure openness and efficiency. In addition to this, guarantees or lower financing rates might be offered for ecologically friendly projects, whereas favorable regulatory environments are developed.

KEYWORDS
CSR, Green Finance, Environmental Performance, Pakistan.

BACKGROUND
The intensifying environmental deterioration observed globally is a consequence of multiple factors, including rapid increase in population, extensive economic development, and heightened corporate operations. According to the study of Ahmad et al. (2022) the aforementioned elements are the primary catalysts for several ecological concerns, including but not limited to air and water pollution, noise pollution, global warming, deforestation, and numerous more. Consequently, the growing apprehension regarding extraction of water and energy, human carbon emissions and discharge of pollutants has led to discussions among different demographic groups, including diverse age brackets (Verma, Kumari, & Raghubanshi, 2021). This is leading towards a growing recognition that firms should not be forced to make a trade-off among reducing their environmental footprint and enhancing their economic success. Therefore, it's important for organizations to simultaneously mitigate their adverse impact on

the environment whereas enhancing their profitability, as these two principles are closely interconnected. Bocken and Short (2021) has suggested that the latter consists mainly of businesses which through their consumption of resources as well as generation of waste are a significant contributor towards environmental degradation. Among the environmentalists, civil society actors, investors, policymakers, and regulatory bodies the increasing environmental consciousness has heightened the demand for more sustainable business practices. This demand basically reflects a concerted effort to ameliorate (CEP) while also seeking to enhance financial outcomes (Lamberti, 2020). The intersection of environmental sustainability and economic viability has thus emerged as a major area of concern, forcing organizations to reevaluate their operational practices and strategic objectives in light of their environmental Implications.

The Harmful impacts of environmental degradation, evident in carbon emissions, energy consumption, water use, waste production, atmospheric pollution, nuclear accidents, and the spread of poisonous compounds, are experienced daily by millions globally. The significance of business decisions in this context is pivotal, as they hold the potential to either exacerbate or mitigate environmental harm. According to the study of Ahmad et al. (2022) Corporations, ecologically vulnerable industries, find themselves at a crossroads where they can either lead in reducing their ecological footprints or lag behind, contributing to the deterioration of the planet's natural environment. The Concept of CSR recommends that firms enter into implicit social agreements with a diverse array of stakeholders—ranging from customers and employees to the broader society and regulatory authorities—beyond their primary responsibility to shareholders. Jhunjhunwala (2023) highlighted the necessity for firms to strike a balance among Different performance metrics and the diverse interests of different Group of stakeholder through effective CSR strategies, thus confirming their legitimate existence. The study of Hennchen and Schrempf-Stirling (2021) highlighted the importance of managing multiple stakeholder interests through CSR as a cornerstone for the sustained acceptability of the firms. The present business landscape, characterized by intense competition and rapid globalization, technological advancements has directed to an increased internationalization of businesses. In an unpredictable climate Organizations consider a more a more complicated range of factors to evaluate their performance and legitimacy. In response to this Lashitew (2021) explained in his study that to ensure long-term sustainability the organizations are shifting their focus solely on short-term economic objectives to chase the Environmental social and ethical goals, in conjunction with promoting transparent business practices.

Green finance signifies a suite of financial products and services that promote environmental sustainability goals, including investments in renewable energy, energy efficiency, sustainable agriculture, and clean transportation. It serves as a crucial method for Raising the capital required to fund projects that have a positive environmental impact, thereby directly contributing to the improvement of CEP (Giro, 2021). The Importance of green finance lies in its capability to bridge the funding gap for sustainability initiatives, offering corporations the financial resources needed to transition towards greener operations. Furthermore, green finance instruments, such as loans and green bonds, not only provide the means for environmental projects but also signal a firm's commitment to sustainability to stakeholders. This may help in enhancing a company's reputation, attract environmentally conscious investors, and meet the growing regulatory and consumer demands for sustainable business practices.

HYPOTHESIS DEVELOPMENT

CSR and CEP

The CSR Concept has captured the attention of both researchers and companies around the world in recent years. This increasing interest stems from a change in consumer preferences towards products and services that are not only good for them but also for the planet. The term "eco-entrepreneurship" highlights this tendency, concentrating on the introduction of environmental friendly products and addressing environmental issues across different industries. Consequently, companies are gradually feeling the pressure from various stakeholders, including employees, customers and governments, to address social and environmental issues (D'Souza et al., 2022). In modern business practices, in spite

of the widespread acknowledgment of CSR's importance in modern business practices, the lack of a universally Recognized definition of CSR poses a challenge for conducting empirical studies.

CSR is basically about companies going beyond what's legally required of them to positively impact society and the environment as a whole. This broader prospective of a company's role in society comprises of focusing on economic, social, and environmental aspects. Recent research has shown that that a company's performance can be enhanced through CSR activities suggesting that companies that pay attention to broader societal and environmental concerns are likely to succeed in today's market. Though, there's a visible gap in research specifically examining CSR's impact on CEP, an area our study aims to explore.

The relationship between CSR and a company's performance is nuanced. For example, D'Souza et al. (2022) argued that when evaluating the impact of CSR, it's important to exclude advertising and R&D spending. The reason behind is that CSR, mainly its environmental dimension, can drive innovation within companies suggesting a link between CSR activities and the development of new, environmentally friendly products and processes. However empirical studies specifically exploring the influence of environmental CSR on innovation remain scarce.

This literature provides insight into on the intricate relationship between CEP and CSR. Though it is eveident that CSR can contribute to a company's overall success, the specific ways it influences environmental outcomes need further investigation. According to the study of Fallah Shayan et al. (2022). The integration of CSR into a company's strategy, motivated by a commitment to economic, social, and environmental goals, is increasingly recognized as key to fostering innovation and ensuring long-term sustainability. Due to the shift in marketplace to understand the importance of CSR for promoting the sustainable practices, greater environmental consciousness, and driving innovation becomes crucial. This evaluation highlights the importance of more research for understanding the dynamics between CEP and CSR, adding valuable insights for businesses who want to adopt sustainable strategies. Consequently, based on the above discussion it is hypothesized that:

H1: *CSR has a significance effect on CEP (CEP).*

Green Finance Moderate the Relationship Between CSR and CEP

The allocation of funds towards projects included in green finance which promotes the initiatives that reduce the impact of climate change, environmental technologies and sustainable development. Which consist of a range of financial services, including investment, assets management and insurance loans, all geared towards supporting projects which have positive environmental upshots. This concept has gained a lot of magnetism as governments, businesses and investors identified the urgency of addressing environmental challenges through sustainable practices. Taneja, Kaur and Özen (2022) in his study explained that the green finance serves both ways as a catalyst for advancing environmental objectives and as a mechanism for promoting economic growth and stability by investing in the resilience and sustainability of numerous segments. For attaining the social and environmental goals beyond legal requirements, CSR encompasses to a company's voluntary efforts, whereas CEP refers to an organization’s impact on the environment through its Products, activities and operations. Furthermore, Green Finance refers to financial tools and products that generate positive environmental benefits whereas providing economic benefits.

According to the study of Makhdoom et al. (2023) company's CEP can be positively impacted by CR and that Green Finance can facilitate environmental-friendly practices in businesses. Furthermore, the companies can be potentially motivated by Green Finance for adopting sustainable practices that will help in improving their CEP. Therefore, it is assumed that Green Finance can moderate the relationship between CEP and CSR. Explicitly, orgnizations that prioritize CSR practices and are also motivated by Green Finance may experience a stronger positive relationship between CSR and CEP. Guang-Wen and Siddik (2022) explained that the use of Green Finance instruments is positively related to environmental sustainability management and CSR practices. Consequently, the hypothesis proposes that Green

Finance plays a moderating role in the relationship between CSR and CEP. By investing in Green Finance products and services Organizations can achieve the higher benefits.

The moderating role of green finance in the relationship between CSR and CEP (CEP) is crucial, as it primarily changes the effectiveness and scope of CSR initiatives aimed at improving environmental outcomes. By providing financial resources specifically reserved for sustainable projects, green finance bridges the gap between the aspirational goals set by CSR and the concrete environmental achievements encapsulated in CEP. It confirms that the ethical responsibilities undertaken by companies translate into actionable projects with real environmental benefits.

Using the notion of these theoretical lenses as a foundation, this study built a comprehensive research model to assess the connection between GF traits, CSR activities, and CEP in the institutional context of a nation like Pakistan. Zampone, Sannino and García-Sánchez (2023) has lately studied how CSR and CEP influence a company's bottom line over time. Results showed that CSR efforts greatly enhanced an organization's CEP, proving that such efforts encouraged introspection on the part of businesses and encouraged their staff to take steps toward reducing solid and liquid waste. When businesses put money into CSR initiatives, they improve their odds of saving money.

H2: *Green Finance moderates the relationship between CSR and CEP.*

VARIABLES AND MEASUREMENT

Data

In this study, the sample frame consists of all conventional manufacturing firms listed in Pakistan during the period from 2013 to 2019. According to the 2015 annual reports and data from the Pakistan Stock Exchange, the manufacturing sector listed comprises 415 firms. Therefore, currently, there are 308 conventional manufacturing firms listed on the Pakistan Stock Exchange. The sample size is 308 firms, which are around 75 percent of the total population.

Green Finance Index

In order to determine the GFI, m nations are chosen to have their GFIs measured. We choose n indicators in order to find the GFI. In this case, let z_{ij} stand for the i-th province's the j-th indication. The following matrix is a basic indication of the stages of development in green financing:

$$Z = (z_{ij})_{m*n} = \begin{bmatrix} z_{11} & \cdots & z_{n1} \\ \vdots & \ddots & \vdots \\ z_{m1} & \cdots & z_{mn} \end{bmatrix}_{m*n} \quad (1)$$

In order to address the issue of inconsistent units for each indicator, it is necessary to standardize equation (3.20) using equation (3.21).

$$z_{ij} = \begin{cases} \frac{z_{ij} - minz_{ij}}{maxz_{ij} - minz_{ij}}, \text{if } z_{ij} \text{ is a positive indicator} \\ \frac{maxz_{ij} - z_{ij}}{maxz_{ij} - minz_{ij}}, \text{if } z_{ij} \text{ is a negative indicator} \end{cases} \quad (2)$$

Normalize the matrix as follows:

$$z_{ij} = \begin{cases} \frac{z_{ij}}{\sqrt{\sum_{i=1}^{m} {z_{ij}}^2}}, \text{if } z_{ij} \text{ is a positive indicator} \\ \frac{\frac{1}{z_{ij}}}{\sqrt{\sum_{i=1}^{m} (\frac{1}{z_{ij}})^2}}, \text{if } z_{ij} \text{ is a negative indicator} \end{cases} \quad (3)$$

Now modify the normalization matrix as follow:

$$c_{ij} = q_{ij} + 0.0001 \quad (4)$$

$$e_{ij} = \frac{c_{ij}}{\sqrt{\sum_{i=1}^{m} c_{ij}}} \quad (5)$$

the entropyL_j and difference coefficient M_i of the j th indicator are obtained as shown in equations (4) and (5):

$$\tau_j^+ = \frac{L_j + 0.1.\sum_{J=1}^{N} M_j}{\sum_{J=1}^{N}(L_j + 0.1.\sum_{J=1}^{N} L_j)} = \frac{1 - M_j + 0.1.\sum_{J=1}^{N}(1 - M_j)}{\sum_{J=1}^{N}(1 - M_j + 0.1.\sum_{J=1}^{N}(1 - M_j)} \quad (6)$$

A standardized decision matrix is obtained:

$$T = (\tau_{ij})_{m*n} = \begin{bmatrix} \emptyset_1 z_{11} & \cdots & \emptyset_n z_{n1} \\ \vdots & \ddots & \vdots \\ \emptyset_1 z_{m1} & \cdots & \emptyset_n z_{mn} \end{bmatrix} \quad (7)$$

The positive ideal solution $\tau_j^+$and negative ideal solution $\tau_j^-$of the j th index can be expressed as follows:

$$\tau_i^+ = \sqrt{\sum_{i=1}^{m}(\tau_{ij} - \tau_j^+)}, \text{ i=1,2……..,m} \quad (8)$$

$$\tau_i^- = \sqrt{\sum_{i=1}^{m}(\tau_{ij} - \tau_j^-)} \text{ i=1,2……..,m} \quad (9)$$

GFI_i is calculated according to the Euclidean distance of a country positive and negative ideal solutions:

$$GFI_i = \frac{\tau_i^-}{\tau_i^+ - \tau_i^-}, \text{ i=1,2……..,m} \quad (10)$$

CSR

The last few decades, the idea of CSR has received extensive popularization and discussion. Although many earlier studies (Aslaksen, Hildebrandt, & Johnsen, 2021; Carroll, 2021; Zhao et al., 2023) have attempted to define, measure, and classify CSR both theoretically and empirically, a generally accepted definition and comprehensive measure of CSR have remained elusive. The idea of CSR has received considerable attention and discussion, but a universally accepted definition and comprehensive assessment of CSR have remained elusive. Social evaluations based on numerous reputational indexes published by various social agencies are the most popular way to measure CSR. In the current study, two methods of measuring CSR will be used: the disclosure approach, which establishes a CSR disclosure index using a content analysis (CA) of annual reports, and the multidimensional financial approach, which uses quantitative information on a firm's financial spending in three areas of CSR (Singh & Chakraborty, 2021). These two methods enable a thorough examination of the CSR initiatives of Pakistani listed companies as well as their connections to CEP and CG.

CSRD_Index = ∑din40/nj

Five individual index are developed of 40 items (Appendix 01).

CEP

CEP measures a company's effectiveness in managing its environmental impact through three key variables: Waste Material (WASTE), Energy Consumption (ENERGY), and Water Consumption (WATER), each assessed by the natural logarithm of their quantities to aid in comparison. WASTE focuses on a company's waste management and reduction, ENERGY evaluates the efficiency of energy use and the shift towards renewable sources, and WATER examines how water is conserved. Studies by Franco (2021), Tandoh et al. (2022), and Arda et al. (2023) support the significance of these variables

in understanding a corporation's commitment to environmental sustainability. This approach underscores the importance of minimizing ecological footprints and promoting sustainable practices in the business world. The measurement of CEP is presented in Table 1.

Table 1: Measurement of CEP.

Name of the Variables		Acronyms	Measurement	References
CEP	Waste Material	WASTE	Natural log of waste emissions or landfills	García Martín and Herrero (2020), Braam et al. (2016)
	Energy Consumption	ENERGY	Natural log of energy consumptions from all sources	
	Water consumption	WATER	Natural log of water consumption from all sources	

The study uses Principal Component Analysis (PCA) is employed to develop a composite measure of CEP. The three measure namely; waste material, energy consumption, water consumption.

In panel PCA method, the jth factor index can be expressed as:

$$CEP_j = W_{j1}A_1 + W_{j2}A + W_{j3}A_3 \quad (11)$$

Here, CEPj is the CEP; Wj represents weight of the parameter of the factor score; original figure of the respective indicators is represented by A.

METHODOLOGY

We use the FE panel methodology to estimate our models after reviewing the results of the LM test (Pesaran, Ullah, & Yamagata, 2008). This allows us to take into account the time-invariant unobservable variables that could have an effect on the dependent variable. Some examples of these variables include the location of the firm in relation to major economic centers, the quality of the firm management system, and the efficiency of their marketing strategy. Additionally, this method takes into account time fixed effects, which are a record of the effects that global financial stocks have on the firm that we have analyzed. We will use a two-way error component fixed effects model that allows for variations in both time and cross-sectional interprets in order to determine how well the results hold up when the methodology is changed. This will allow us to determine how well the results retain their validity.

The fixed effects (FE) estimate accounts for industry heterogeneity by allowing each firm to have its own interpretation, while constraining the slope to remain constant. The heterogeneity parameter $\beta_{i,t}$ is represented in the two-way error definition.

$$\beta_{i,t} = \lambda_t + \mu_i + \varepsilon_{i,t} \quad (12)$$

The variable $\varepsilon_{i,t}$ is considered to be a random variable with a mean of zero and a variance that is both independent and identically distributed. While μ_i reflects the constant influence of each person, λ_t depicts the time-varying impacts. The presence of non-zero covariances between individual factor terms and any of the regressors requires the use of the fixed effects approach. The fixed effects estimator use OLS to estimate the model after removing the problematic parameters λ_t and μ_i In the process of transformation, it is essential to eliminate these variables by using the mean to distinguish between the two sides of the equation.

$$\left(y_t - \hat{y}_{i,t}\right) = \beta\left(x_t - \dot{x}_{i,t}\right) \quad (13)$$

The econometric model examining the direct impact of CSR on CEP is model in equation 14:

JOURNAL OF BANKING AND SOCIAL EQUITY

$$CEP_{it} = \alpha_0 + \alpha_1 CSR\_Index_{it} + \alpha_2 \sum_{j-1}^{n} X_{jit} + \mu_i + \lambda_t + \varepsilon_{it} \quad (14)$$

The econometric model examining the moderating role of GF in the relationship between CSR on CEP is model in equation 15:

$$CEP_{it} = \alpha_0 + \alpha_1 GF\_Index_{it} + \alpha_2 CSR\_Index_{it} + \alpha_3 (CSR\_Index * GF\_index)_{it} + \alpha_4 \sum_{j-1}^{n} X_{jit} + \mu_i + \lambda_t + \varepsilon_{it} \quad (15)$$

RESULTS

The fixed effect results are shown in Table 2 The regression analysis results demonstrate the significant influence of CSR and Green Finance (GF) on CEP, with fixed effects for time and industry. In both models, the CSR_Index shows a positive and significant effect on CEP, with coefficients of 0.3423 and 0.2321, respectively, both at the 5% significance level. These findings suggest that firms engaging more in CSR activities tend to exhibit better environmental performance. This positive relationship may stem from the fact that CSR initiatives often include environmental sustainability practices, such as reducing carbon footprints, waste management, and resource conservation. The social obligations and environmental performance by the organizations can be enhanced through prioritizing CSR, that can be beneficial in long-term, which includes a stronger corporate reputation, regulatory compliance and improved stakeholder relations.

Table 2: The Fixed Effects Panel Regression Output of Models 3.6-3.7.

	Fixed Effect (time and industry fixed)	
CSR_Index	0.3423** (-3.390)	0.2321** (-2.74)
GF		0.166** (-2.75)
GF * CG_Index		0.163** (-2.75)
FP	0.0514** (-3.14)	0.052** (-3.35)
F_SIZE	0.01821** (-2.35)	0.028*** (-2.40)
Lev	0.0297 (-0.710)	0.065 (-0.72)
Growth	0.0927*** (3.41)	0.082* (3.36)
Age	0.119*** (-2.53)	0.120** (-2.51)
R-Square	**0.42**	**0.44**

For enhancing the CEP, Green Finance (GF) plays an important role. The coefficient value for GF is 0.166, significant at the 5% level, indicates that investments in green finance positively impact environmental performance. Green finance involves directing financial resources towards projects and initiatives that promote environmental sustainability, such as renewable energy, energy efficiency, and pollution control. The positive effect of GF on CEP highlights the importance of financial investments in sustainable practices, as they enable companies to adopt advanced technologies and processes that reduce environmental impact. Furthermore, the interaction term GF*CSR_Index, with a coefficient of 0.163 (significant at the 5% level), underscores the synergy between green finance and CSR. This interaction suggests that the positive impact of green finance on environmental performance is amplified when combined with robust CSR initiatives, emphasizing the need for an integrated approach to sustainability.

Other control variables also contribute to the understanding of CEP. Firm performance (FP) has a positive and significant relationship with CEP, with coefficients of 0.0514 and 0.052, respectively, suggesting that financially successful firms are better equipped to invest in environmental sustainability. Firm size (F_SIZE) is positively correlated with CEP, indicating that larger firms may have more resources and capabilities to implement effective environmental practices. Growth, with significant coefficients of 0.0927 and 0.082, shows that growing firms are likely to improve their environmental performance, possibly due to increased innovation and efficiency. However, leverage (Lev) does not show a significant effect on CEP, suggesting that financial leverage may not directly influence environmental performance. Lastly, firm age is positively related to CEP, indicating that older firms might have more established sustainability practices. Overall, the R-square values of 0.40 and 0.47

indicate that the models explain a substantial portion of the variability in CEP, highlighting the importance of CSR, green finance, and other firm characteristics in driving environmental performance.

CONCLUSION

Conclusion and Policy Implications

The analysis underscores the significant impact of CSR and Green Finance (GF) on CEP. The positive and significant coefficients of CSR_Index across both models reveal that firms with higher engagement in CSR activities tend to achieve better environmental performance (Ghardallou & Alessa, 2022). This highlights the dual benefits of CSR, not only in terms of social and stakeholder relations but also in contributing to environmental sustainability. Moreover, the substantial role of Green Finance is evident, with its positive correlation to CEP, indicating that financial investments in green initiatives are crucial for improving environmental outcomes. The interaction between Green Finance and CSR further emphasizes that these two elements, when combined, can lead to even greater enhancements in environmental performance, suggesting a synergistic effect that companies should leverage.

These findings have profound policy implications. Policymakers and regulatory bodies should encourage and perhaps mandate CSR activities, especially those targeting environmental sustainability. Incentives such as tax breaks, subsidies, or public recognition for firms that excel in CSR could motivate more businesses to adopt these practices. Additionally, developing a robust green finance sector is imperative (Li, Lin, & Xiao, 2024). Governments and financial institutions should promote green bonds, green loans, and other financial products that channel investments towards sustainable projects. This could involve creating favorable regulatory frameworks, offering guarantees or lower interest rates for green projects, and establishing green finance standards to ensure transparency and effectiveness.

Furthermore, the interaction effect between Green Finance and CSR suggests that policies should not treat these elements in isolation. Integrated policies that promote both CSR and green finance can create a more substantial impact. For instance, regulatory requirements could encourage firms to develop comprehensive sustainability strategies that include both CSR initiatives and green finance investments (Sadiq et al., 2022). Training programs and workshops could also be established to educate firms on the benefits and implementation strategies of these integrated approaches. By fostering an environment where CSR and green finance are interwoven into the fabric of corporate operations, policymakers can significantly enhance the overall corporate contribution to environmental sustainability, ensuring long-term ecological and economic benefits.

REFERENCES

Ahmad, F., Saeed, Q., Shah, S. M. U., Gondal, M. A., & Mumtaz, S. (2022). Environmental sustainability: Challenges and approaches. In M. K. Jhariya, R. S. Meena, A. Banerjee, & S. N. Meena (Eds.), *Natural Resources Conservation and Advances for Sustainability* (pp. 243-270). Elsevier. https://doi.org/10.1016/B978-0-12-822976-7.00019-3

Arda, O. A., Montabon, F., Tatoglu, E., Golgeci, I., & Zaim, S. (2023). Toward a holistic understanding of sustainability in corporations: resource-based view of sustainable supply chain management. *Supply Chain Management: An International Journal, 28*(2), 193-208. https://doi.org/10.1108/SCM-08-2021-0385

Aslaksen, H. M., Hildebrandt, C., & Johnsen, H. C. G. (2021). The long-term transformation of the concept of CSR: towards a more comprehensive emphasis on sustainability. *International Journal of Corporate Social Responsibility, 6*(1), 11. https://doi.org/10.1186/s40991-021-00063-9

Bocken, N. M. P., & Short, S. W. (2021). Unsustainable business models – Recognising and resolving institutionalised social and environmental harm. *Journal of Cleaner Production, 312*, 127828. https://doi.org/10.1016/j.jclepro.2021.127828

Braam, G. J. M., Uit de Weerd, L., Hauck, M., & Huijbregts, M. A. J. (2016). Determinants of corporate environmental reporting: the importance of environmental performance and assurance. *Journal of Cleaner Production, 129*, 724-734. https://doi.org/10.1016/j.jclepro.2016.03.039

Carroll, A. B. (2021). Corporate Social Responsibility: Perspectives on the CSR Construct's Development and Future. *Business & Society, 60*(6), 1258-1278. https://doi.org/10.1177/00076503211001765

D'Souza, C., Ahmed, T., Khashru, M. F. M. A., Ahmed, R., Ratten, V., & Jayaratne, M. (2022). The complexity of stakeholder pressures and their influence on social and environmental responsibilities. *Journal of Cleaner Production, 358*, 132038. https://doi.org/10.1016/j.jclepro.2022.132038

Fallah Shayan, N., Mohabbati-Kalejahi, N., Alavi, S., & Zahed, M. A. (2022). Sustainable Development Goals (SDGs) as a Framework for Corporate Social Responsibility (CSR). *Sustainability, 14*(3), 1222. https://doi.org/10.3390/su14031222

Franco, S. (2021). The influence of the external and internal environments of multinational enterprises on the sustainability commitment of their subsidiaries: A cluster analysis. *Journal of Cleaner Production, 297*, 126654. https://doi.org/10.1016/j.jclepro.2021.126654

García Martín, C. J., & Herrero, B. (2020). Do board characteristics affect environmental performance? A study of EU firms. *Corporate Social Responsibility and Environmental Management, 27*(1), 74-94. https://doi.org/10.1002/csr.1775

Ghardallou, W., & Alessa, N. (2022). Corporate Social Responsibility and Firm Performance in GCC Countries: A Panel Smooth Transition Regression Model. *Sustainability, 14*(13), 7908. https://doi.org/10.3390/su14137908

Giro, A. (2021). *Regional Strategy and Action Plan for the Valuation, Protection and/or Restoration of Key Marine Habitats in the Wider Caribbean 2021 – 2030 United Nations Environment Programme - Caribbean Environment Programme (UNEP-CEP)* (Technical Report No. 00). Caribbean Natural Resources Institute (CANARI). https://gefcrew.org/carrcu/SPAWSTAC9/Info-Docs/WG.42-INF.6-en.pdf

Guang-Wen, Z., & Siddik, A. B. (2022). Do Corporate Social Responsibility Practices and Green Finance Dimensions Determine Environmental Performance? An Empirical Study on Bangladeshi Banking Institutions. *Frontiers in Environmental Science, 10*, 890096. https://doi.org/10.3389/fenvs.2022.890096

Hennchen, E., & Schrempf-Stirling, J. (2021). Fit for addressing grand challenges? A process model for effective accountability relationships within multi-stakeholder initiatives in developing countries. *Business Ethics, the Environment & Responsibility, 30*(S1), 5-24. https://doi.org/10.1111/beer.12325

Jhunjhunwala, S. (2023). Corporate Social Responsibility. In S. Jhunjhunwala (Ed.), *Corporate Governance: Creating Value for Stakeholders* (pp. 145-169). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-2707-4_7

Lamberti, R. A. (2020). *Community Energy Planning (CEP): Challenges and Barriers to Implementation* [Master's Thesis, State University of New York at Binghamton]. https://www.proquest.com/openview/e6fdcf0615542ce35418f4054bdc8d2c

Lashitew, A. A. (2021). Corporate uptake of the Sustainable Development Goals: Mere greenwashing or an advent of institutional change? *Journal of International Business Policy, 4*(1), 184-200. https://doi.org/10.1057/s42214-020-00092-4

Li, S., Lin, D., & Xiao, H. (2024). Green finance and high-pollution corporate compensation - Empirical evidence from green credit guidelines. *Heliyon, 10*(8), e27851. https://doi.org/10.1016/j.heliyon.2024.e27851

Makhdoom, Z. H., Gao, Y., Song, X., Khoso, W. M., & Baloch, Z. A. (2023). Linking environmental corporate social responsibility to firm performance: The role of partnership restructure. *Environmental Science and Pollution Research, 30*(16), 48323-48338. https://doi.org/10.1007/s11356-023-25776-1

Pesaran, M. H., Ullah, A., & Yamagata, T. (2008). A bias-adjusted LM test of error cross-section independence. *The Econometrics Journal, 11*(1), 105-127. https://doi.org/10.1111/j.1368-423X.2007.00227.x

Sadiq, M., Nonthapot, S., Mohamad, S., Chee Keong, O., Ehsanullah, S., & Iqbal, N. (2022). Does green finance matter for sustainable entrepreneurship and environmental corporate social responsibility during COVID-19? *China Finance Review International, 12*(2), 317-333.

https://doi.org/10.1108/CFRI-02-2021-0038

Singh, A., & Chakraborty, M. (2021). Does CSR disclosure influence financial performance of firms? Evidence from an emerging economy. *Sustainability Accounting, Management and Policy Journal, 12*(4), 788-810. https://doi.org/10.1108/SAMPJ-02-2018-0042

Tandoh, I., Duffour, K. A., Essandoh, M., & Amoako, R. N. (2022). Corporate Governance, Corporate Social Responsibility, and Corporate Sustainability: The Moderating Role of Top Management Commitment. *International Journal of Professional Business Review, 7*(2), e0309. https://doi.org/10.26668/businessreview/2022.v7i2.309

Taneja, S., Kaur, S., & Özen, E. (2022). Using green finance to promote global growth in a sustainable way. *International Journal of Green Economics, 16*(3), 246-257. https://doi.org/10.1504/IJGE.2022.128930

Verma, P., Kumari, T., & Raghubanshi, A. S. (2021). Energy emissions, consumption and impact of urban households: A review. *Renewable and Sustainable Energy Reviews, 147*, 111210. https://doi.org/10.1016/j.rser.2021.111210

Zampone, G., Sannino, G., & García-Sánchez, I.-M. (2023). Exploring the moderating effects of corporate social responsibility performance under mimetic pressures. An international analysis. *Corporate Social Responsibility and Environmental Management, 30*(1), 53-65. https://doi.org/10.1002/csr.2338

Zhao, L., Yang, M. M., Wang, Z., & Michelson, G. (2023). Trends in the Dynamic Evolution of Corporate Social Responsibility and Leadership: A Literature Review and Bibliometric Analysis. *Journal of Business Ethics, 182*(1), 135-157. https://doi.org/10.1007/s10551-022-05035-y

JOURNAL OF BANKING AND SOCIAL EQUITY

Appendix 01: CSR Index

1: Community Welfare

1.1 Acknowledgement of CSR
1.2 Information about objectives or policies of a firm for CSR
1.3 Donation for the cause flood
1.4 Donation for earthquake affected people
1.5 Donations for internally displaced people (IDP's) victim of war or terrorism activities
1.6 Donations by the employees for affected people.
1.7 Rural Development programs (less developed/remote areas/ under-privileged)
1.8 Women's empowerment and development program
1.9 Sponsoring and donations to various sports activities, national and international games and events
1.10 Assistance to different Trusts who works for destitute or disabled people of the society.
1.11 Other general community welfare activities/ Poverty Alleviation.

2: Contribution to Education and Health sector

2.1 Donation to different schools, colleges and universities for educational facilities
2.2 Scholarships to meritorious and poor students
2.3 Sponsoring or Organizing different educational activities or events at local and international level
2.4 Provision of health care services (facilitating/ supporting health sector).
2.5 Sponsoring or Donations for different hospitals to run their operations (Donation of funds for running cancer hospital, Donation to different eyes hospital, Donation of cash money for supporting variousoperations of kidney hospital)

3: Environmental and Energy Importance

3.1 Environmental protection/improvement/ betterment or awareness
3.2 Pollution prevention or carbon emission control
3.3 Waste management or reuse of by-product/ minimized water consumption
3.4 Implantation of trees to make the country green, green office project
3.4 Energy efficiency, conservation, reduced energy consumption or energy reduction
3.6 Production or use of renewable or green energy/Utilizing waste materials or other sources for energy Production
3.7 Investment in energy projects to overcome the country energy crisis (Financing by different banks or FI).

4: Product-Services and Customer

4.1 Explanation of major kinds of product/services
4.2 Product or service quality, quality control system, measures or procedures
4.3 Product or service, equipment and plant or technology innovation, development or improvement (R&D)
4.4 Product or production process safety
4.5 Value added statement
4.6 Statement of Ethics and business practices or code of ethics/ Statement of internal control
4.7 Stakeholder approach
4.8 Risk management committee/practices
4.9 Disclosing information about customer service or customer relationship

5: Workforce

5.1 Employee training, Number of employees trained, Training cost
5.2 Number of employees
5.3 Career development programs
5.4 Employee Benefits (retirement, medical, others i.e. stock option scheme, loans, recreational etc or Helping the employees to improve their education)
5.5 Staff engagement programs or Employee satisfaction/Job Sustainability
5.6 Compensation plan or policy for employees
5.7 Providing safe, harmonious and challenging working environment for the employee (security charges)
5.8 Employment of women, special person and minorities

JOURNAL OF BANKING AND SOCIAL EQUITY

Appendix 02: Description of Control Variables

Name	Symb ol	Description
Financial Performance	ROA	Earnings of a Firm after Tax/Total Assets
Firm Size	FSize	Log of Total Assets
Firm Leverage	FLev	Total Debt/Total Assets
Firm Growth	FGrth	Percentage change in revenues from yeart-1 to year t
Firm Age	FAge	Total years of the firm