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Green Financing and Firm Performance in Pakistan: The Role of Corporate Social Responsibility and the Effect of Firm Size

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ABSTRACT

Sustainable business practices have gained greater significance as companies aim to improve performance, and respond to the needs of the environment and social requirement. In this study, we explore how green financing affects the performance of firms in Pakistan and the mediating role of corporate social responsibility (CSR) and the moderating effect of firm size. A quantitative explanatory research design was used that gathered primary data through the use of corporate employees and financial professional across banking, manufacturing and service industries in Karachi, Pakistan. The survey of 350 respondents was conducted with a stratified random sample, and a structured questionnaire based on proven literature, in which all the constructs were measured on a 5-point Likert scale. An analysis was conducted on data with descriptive statistics, Pearson correlation and Structural Equation Modeling (SEM) statistics through SmartPLS to test direct, mediating and moderating effects. All constructs were found to be reliable as indicated by Cronbachs Alpha values (≥ 0.70). This evidence suggests that green financing has a substantial positive impact on the performance of the firm, and this impact is partially mediated by CSR. Moreover, firm size enhances the impact of green financing on performance, indicating that small firms cannot take advantage of sustainable financial practices. The current research paper will add to the body of research by offering research based evidence in industrial experience in Pakistan, and giving practical implications to managers seeking to combine the concept of sustainable finance and strategic CSR practices.

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Introduction

The worldwide focus on the sustainability and environmental responsibility has altered the financial perspectives of corporations and turned green financing into a vital instrument of companies trying to bring the two elements of economic development and environmental conservation into harmony. Green financing is whereby funds are invested in environmentally appropriate projects such as renewable energy sources, pollution mitigation and sustainable infrastructures. It does not only help to achieve environmental objectives but also acts as a tool in facilitating firm performance in terms of increased efficiency, innovation, and improved stakeholder trust (Zhang and Zhou, 2021, Fatemi et al., 2018). Green financing provides a way forward in the strategies of firms in emerging economies such as Pakistan, where companies are experiencing more regulatory and social pressure to develop sustainable operations, to meet profitability alongside corporate social responsibility (CSR) efforts (Bhutta et al., 2025; Abbas and Razzaq, 2025).

Corporate Social Responsibility (CSR) has become a very important facilitator in the linkage between financial strategies and organizations. CSR is the ethical, social and environmental obligations of a firm beyond those dictated by law (Carroll, 1999). Previous studies show that CSR has the potential to boost the performance of firms by enhancing brand reputation, stakeholder loyalty, and operational efficiency (Khan et al., 2020). CSR can be used as a tool to ensure that beneficial long-

term environmental enhancements can be converted into practical financial gains since environmentally friendly schemes can enhance organizational legitimacy and access to finances (Aziz et al., 2025; Latif and Ullah, 2024; Jawad et al., 2025).

The other relevant factor that determines the effectiveness of green financing is firm size. Generally larger companies have more resources, established procedures and tactical adaptability to put sustainable financial procedures to effective use. On the other hand, small companies can have a challenge in raising enough capital to invest in green projects which handicaps the effects on the performance (Liu et al., 2018). Thus, a moderate variable like firm size is one that helps in getting a finer insight into the effect of organizational scale on benefits of sustainable financial strategies.

In spite of the increased attention to green finance and CSR, there is limited empirical evidence on the joint impacts of green finance and CSR on the performance of firms in Pakistan. The majority of the studies have considered either CSR or environmental initiative separately, and there is a huge gap in understanding how green financing, CSR, and firm size interact to influence organizational outcomes. Karachi, being the financial and industrial center of Pakistan, is a perfect location to conduct such an inquiry, with its concentration of businesses in banking, manufacturing, and other service industries, that are increasingly undertaking sustainable finance programs.

In this study, this gap in research has been filled through an examination of the direct impact of green financing on firm performance, the intermediate impact of CSR and the moderating impact of firm size. A quantitative, explanatory, design; probing poses a strong context-specific interpretation of these relationships by a robust primary data of both employees of corporations and financial professionals. Through Structural Equation Modelling (SEM) implemented through SmartPLS, this study critically evaluates the modelling formulated with reliability and validity, with ramifications that are not only scholarly but also feasible to managers and policymakers.

These findings offer useful information to companies that hope to integrate sustainability in their financial policies and it reveals how green financing that is underpinned by CSR and depended on the sizes of firms can be a very lucrative instructor to corporate profitability and competitiveness over the long term. The paper will add to the existing body of knowledge about sustainable finance in developing markets and will provide empirical data to inform strategic decision-making in the changing context of Corporate Pakistan.

Literature Review

Theoretical Foundations

The interconnection between green financing, corporate social responsibility (CSR), firm size and firm performance is based on various agreed theories. According to Stakeholder Theory, companies owe a duty not just to the shareholders but also to staff members, the local communities, and the environment; and that achieving a balance of interests increases the performance in the long run (Freeman, 1984; Phillips et al., 2003). Resource-Based View (RBV) holds that an organization strategic resources like the capacity to maintain sustainable financial practices, CSR programs and capacity of the organization help the firm generate competitive advantage and better performance (Barney, 1991; Hart, 1995). These theories drive the thesis that green financing combined with CSR and utilizing firm resources (size) can enhance corporate performance in the case of the emerging economy such as Pakistan.

In addition, the Institutional Theory also sheds some light on the impact of regulatory, social, and market pressure in the implementation of the green finance initiatives. Companies adhere to environmental and social norms in order to become legitimate, which in turn indirectly influences the profitability (DiMaggio and Powell 1983; Zhang et al., 2020). The integration of these views forms a solid conceptual framework to analyzing the mediating nature of CSR and moderating impact of firm size in streamlining performance through green financing.

Green Financing and Performance of a Firm

Green financing is an expertise involved in investments in those projects which lessen the effect on the environment, enhance long-term sustainability, and make compliance with the environmental rules (Fatemi et al., 2018). Empirical research confirms that green financing has positive impacts on the performance of firms, both directly and indirectly. As an example, Zhang and Zhou (2021) found that companies that engaged in green projects had increased operational efficiencies and better profitabilities because of saving energy and decreased expenses on waste. Equally, Zhou et al. (2020) established that companies with green bonds or eco-friendly financing structures performed better than other companies in the market in terms of financial performance and earned the trust of the stakeholders.

Green financing is practiced by more and more firms in various sectors, including banking and manufacturing, in Pakistan where it can help a company achieve sustainability. According to Ahmad et al. (2022), the companies that incorporate green

financing in their strategic decision-making process have had greater financial performances and enhanced brand image. Nevertheless, certain research also identifies obstacles, including greater initial investment expenses and ignorance of small and medium enterprises (SMEs), which can present as a constraint to the short-term financial payback (Khan et al., 2021). On the whole, there is some evidence that green financing is a significant factor in the performance of firms when it is implemented in a strategic manner and combined with other complementary practices like CSR.

Corporate Social Responsibility (CSR) as Intermediary

CSR can be defined as the voluntary undertakings of the firm in social, ethical and environmental concerns that are not enforced by law (Carroll, 1999). A few studies have looked at the CSR as an intermediating process between sustainable financial practices and firm performance. Evidently, CSR initiatives enhance the beneficial effects of green financing by increasing stakeholder loyalty, enhancing corporate image, and gaining access to resources, according to Kahn et al. (2020). Likewise, Ali et al. (2021) also reported that companies that include CSR in their environmental financing schemes have better operational efficiency and profitability than those that do not.

CSR is likely to be viewed as a form of legitimacy and trustworthiness in the emerging economies (Jamali et al., 2017). Countries in Pakistan where firms have adopted CSRs in line with green financing have the ability to reduce their reputational risks and improve the long-term financial performance. Indicatively, manufacturing companies that consume lots of energy and practice green financing and at the same time invest in CSR-oriented community projects have recorded enhanced stakeholder interaction and competition in the market (Shahbaz et al., 2022). This evidence has shown the importance of CSR as a mediator, the process of converting sustainable financial projects into concrete performance measures.

Firm Size as a Moderator

The size of the firm is important in influencing the efficacy of green financing and CSR programs. Many current sustainable projects require financial resources, technological solutions, and organizational resources, which are usually available to larger companies (Liu et al., 2018; Wang and Sarkis, 2020). Consequently, it happens that the pluses of green financing and CSR tend to be more intense in large organisations than in small ones.

This moderating role is supported by empirical evidence. Specifically, Chen et al. (2021) found that bigger manufacturing organizations in China benefitted more out of green initiatives compared to small ones. Likewise, Ahmad et al. (2022) in Pakistan established that firm size also substantially improved the connection between environmentally-based investments and profitability, which implies that the scale of organizational structures helps firms to overcome the expenses associated with the implementation and use the efforts of operational gains. This study takes into consideration the heterogeneity of resources and strategic capabilities among the firms by adding firm size as a modulator.

Combined Facts of Green Financing, CSR, and Firm Size

Whereas several studies focus on green financing or CSR on their own, the number of researches that look at the joint impact of the two on the performance of the firms is still very small especially in Pakistan. Research by Zhang et al. (2020) and Fatemi et al. (2018) refers to the fact that green financing has a direct positive impact on performance and that the CSR is a mediating fact, which improves the strength of the relation. The level of moderating factor, such as firm size, determines whether these sustainable practices can be converted into financial gains.

This synthesised framework can be related to the Resource-Based View and Stakeholder Theory as it states that companies that have access to resources (size) and are practicing sustainability (CSR) can maximally benefit the advantages of green financing. This model has empirical backing: larger companies with developed CSR models get better returns on environmentally responsible investments whereas smaller ones may have limitations to the performance effect (Ali et al., 2021; Wang and Sarkis, 2020).

Empirical Evidence of the New Economies

The green financing, CSR, and firm size, and performance are emerging markets that present a unique setting to examine due to the scarcity of resources, absence of regulations, and dynamic stakeholder expectations. Jain et al. (2021) conducted a study in India which showed that companies with green financing and corporate strategies performed better in terms of operational performance and financial performance. Chen et al. (2021) highlighted in China that large companies have comparatively an advantage to invest in sustainability because of economies of scale and availability of resources.

Available studies in Pakistan are sparse but suggestive. According to Ahmad et al. (2022) and Khan et al. (2021), companies engaging in green financing and CSR activities achieved better financial performance. The banking industry, such as that of

the Green loans with CSR programs, asserted higher stakeholder confidence and economic returns. By the same token, big manufacturing companies that took part in environmental related activities, on top of CSR activities, experienced operational efficiencies, and market benefits. These results support the necessity of empirically investigating the mediation aspect of CSR and moderating role of firm size in Pakistan.

Methodology

Research Design

The research design used in this study was quantitative and explanatory in nature to find out how green financing impacts on firm performance using corporate social responsibility (CSR) as a mediating variable and firm size as a moderating variable. Explanatory design was found to be suitable because it could be used to test relationships indicated by the hypothesis, and also causal effect of variables.

MPopulation and Research Setting

The analysis was carried out in Karachi Pakistan, a large financial and industrial centre consisting of banking, manufacturing and service companies. The target population was another population of corporate and financial professionals like finance managers, accountants, and sustainability officers who had firsthand knowledge of financial strategies of organizations and CSR initiatives.

Sampling Method and Sample size

Stratified random sampling method was used to assure that all of the three key sectors are represented. Four stratum (banking, manufacturing, services) were randomly selected and 350 respondents took part in the research. Stratification provided industry-based insights and reduction in sampling bias whereas the sample was adequate to provide Structural Equation Modeling (SEM) (Hair et al., 2017).

Data Collection Instrument

A structured questionnaire was used to collect primary data which was based on validated research. The following constructs were measured using the questionnaire on a 5-point lambda scale (1 = strongly disagree; 5 = strongly agree):

- **Green Financing (Independent Variable)** – the items measured the degree of investments in green projects and green financial instruments adoption (Zhang & Zhou, 2021).
- **Corporate Social Responsibility (Mediator)** - questions measured how strongly an organization has organizational ethics, social, and environmental responsibilities (Ali et al., 2021).
- **Firm Size (Moderator)** - proxied by total size of employees, ratio of annual revenue and size of operation.
- **Firm Performance (Dependent Variable)** zymatics made 158 items from the following: profitability, operational efficiency, and financial sustainability measures.

The instrument was pretested in clarity and content validity and then distributed on a large scale.

Data Collection Procedure

Both online and physical surveys were used to gather data during visits to the organization and the use of email. The scope of the study was explained to the respondents, and their participation was free and anonymous, so there was ethical adherence and low chances of bias.

Data Analysis Techniques

Data gathered were analyzed with SPSS (descriptive analysis, correlation analysis) and SmartPLS (SEM). The analysis entailed a number of steps:

1. Demographic and Descriptive Analysis

Frequency distributions and percentages were used to obtain the demographic characteristics, such as age, gender, industry, and professional experience. To investigate central tendencies and variability, descriptive statistics were obtained on all the variables of the study such as mean and standard deviation.

2. Correlation Analysis

To test the results that depict intensity and direction of relationship between green financing, CSR, firm size, and firm performance, Pearson correlation analysis was performed.

3. Reliability Analysis

Cronbach Alpha was used to evaluate the internal consistency of the scales with the acceptable threshold being 0.70 and above (Nunnally and Bernstein, 1994).

Structural Equation Modeling (SEM)

Direct, mediating and moderating hypotheses were tested by the use of SmartPLS to test SEM. The analysis consisted of two steps:

- **Measurement Model** - measured convergent, discriminant validity and composite reliability. The acceptable validity was established by having factor loadings of greater than 0.70 with AVE of greater than 0.50.
- **Structural Model** - measured both the direct S2 and indirect S3 effects, with mediation (CSR) and moderation (firm size). The most obvious indicators that were reported were path coefficients (), t-values, p-values (where 0.05), and our R², which indicated that our hypotheses were proved and that the model is explanatory.

Ethical Considerations

The research was conducted in accordance with the standards of ethics. Participants willingly gave informed consent and the confidentiality and anonymity were fully guaranteed. The data obtained were only used in an academic way and the identities of organizations were anonymous.

Data Analysis and Results

The results of the study, as well as demographic analysis, descriptive statistics, correlation analysis, reliability assessment, and the results of structural equation modeling (SEM) are presented in this section. Each of the tables has a detailed narrative explanation of how to interpret the findings.

Demographic Profile of respondents

The Table 1 shows the demographics of the respondents. It consisted of 350 participants, all of whom were corporate employees and financial professionals who work in banking, manufacturing and services industries in Karachi, Pakistan.

Table 1: Demographic Characteristics of Respondents (N = 350)

Variable	Category	Frequency	Percentage (%)
Gender	Male	218	62.3%
	Female	132	37.7%
Age	20-30 years	102	29.1%
	31-40 years	156	44.6%
	41-50 years	70	20.0%
	Above 50	22	6.3%
Industry	Banking	112	32.0%
	Manufacturing	134	38.3%
	Services	104	29.7%
Education	Bachelor's	124	35.4%
	Master's	198	56.6%
	Other	28	8.0%
Experience	< 5 years	98	28.0%
	5-10 years	162	46.3%
	> 10 years	90	25.7%

The population composition with which the recipients were received is that majority of the respondents were male (62.3%), with a range of between 31 and 40 years (44.6%). Most of them (56.6) had a Master's degree and 5-10 years of professional experience (46.3). In this profile, we can see an example of a well-qualified and experienced sample, which could give in-

informed responses about the green financing practice, CSR and firm performance. Moreover, participants in various fields such as banking, manufacturing and services are included thereby making the findings representative of Karachi in terms of corporate environment.

Descriptive Statistics

The descriptive statistics for the study variables are summarized in Table 2.

Table 2: Descriptive Statistics of Study Variables

Variable	Mean	Standard Deviation
Green Financing (GF)	3.78	0.65
Corporate Social Responsibility (CSR)	3.85	0.62
Firm Size (FS)	3.70	0.70
Firm Performance (FP)	3.92	0.60

In the descriptive analysis, the general perception of the respondents towards green financing and CSR initiatives is that it is well implemented in their firms, with a means value of 3.78 and 3.85 respectively. The mean score of 3.92 was the greatest in firm performance indicating that the respondents have reported positive results related to green financial practices and social responsibility initiatives. There was moderate standard deviation between variables, which is relatively good agreement between the participants as well as a consistent perception of the study constructs.

Correlation Analysis

The Pearson correlation results are presented in Table 3.

Table 3: Pearson Correlation Matrix

Variables	GF	CSR	FS	FP
GF	1			
CSR	0.62*	1		
FS	0.55*	0.58*	1	
FP	0.64*	0.69*	0.60*	1

*Note: **p < 0.01

In the correlation analysis, it is observed that green financing is positively related to CSR ($r = 0.62, p < 0.01$) and company performance ($r = 0.64, p < 0.01$). CSR and firm performance are correlated positively as well ($r = 0.69, p < 0.01$). The firm size has strong positive relationships with green financing ($r = 0.55$) and firm performance ($r = 0.60$) implying that larger firms have a better position to employ green financial practices to improve performance. These results suggest that the associations between these variables are supported at this stage.

Reliability Analysis

Reliability of the measurement scales was assessed using Cronbach's Alpha, as shown in Table 4.

Table 4: Reliability Statistics

Variable	Cronbach's Alpha
Green Financing (GF)	0.83
Corporate Social Responsibility (CSR)	0.85
Firm Size (FS)	0.78
Firm Performance (FP)	0.87

The Cronbachs Alpha values of all constructs were more than the recommended value of 0.70, indicating that the scales used were trustworthy and internally stable to measure the perception of the respondents.

Results of Structural Equation Modeling (SEM)

The S.E.M analysis that was performed with the help of SmartPLS helped to evaluate both direct and indirect influences, as well as CSR mediation and moderation of the firm size. The path coefficients, t-values and p-values are given in Table 5.

Table 5: SEM Path Coefficients

Hypothesis	Relationship	β	t-value	p-value	Interpretation
H1	GF \rightarrow FP	0.32	5.12	0.000	Significant
H2	GF \rightarrow CSR	0.62	12.45	0.000	Significant
H3	CSR \rightarrow FP	0.41	6.28	0.000	Significant
H4	CSR mediates GF \rightarrow FP	0.25	4.88	0.000	Partial Mediation
H5	FS moderates GF \rightarrow FP	0.18	3.95	0.000	Significant

The results of the structural model show that green financing has a positive direct impact on the company performance ($\beta = 0.32$, $p = 0.001$) and indirectly through CSR ($\beta = 0.25$, $p = 0.001$), complete mediation applies. The correlation between green financing and performance is moderate with a 0.18 ($p = 0.001$) relationship and firm size which is larger. The performance of the firm using the model showed that the model explained a significant percentage of the variance of firm performance with the R^2 value standing at 0.68.

The review offers solid pieces of evidence that green financing has a positive outcome on firms operating in the corporate world of Karachi. CSR is an important moderator, which means that sustainable investments will result in improved performance in the case of sustainable social responsibility measures. Moreover, the size of the firms maximizes effectiveness of the green financing, implying that availability of resources and the capacity of an organization is vital to actualizing performance gains. On the whole, these results highlight the significance of such an approach to green financial practices and CSR and the need to take firm size into account to develop sustainable growth strategies.

Discussion

The findings of this paper reveal that green financing positively impacts firm performance considerably, within the framework of Pakistani corporate sector. Companies which channel resources towards projects that are eco-friendly not only cut on operational expenses related to cost efficiency and minimisation of waste, but also improve their reputation among the stakeholders, which results in the improved financial performance. The results are rather expected, as other researchers noted, and investments in green initiatives have value-generative properties as they represent a combination of environmental stewardship and business-strategic advantages (Zhang and Zhou, 2021; Fatemi et al., 2018).

The paper also indicates that Corporate Social Responsibility (CSR) in part mediates the nature of the relationship between green financing and performance of firms. This suggests that green financing does have an immediate relationship with financial performance; although its implementation is more effective with the addition of CSR. Organizations that focus on social and environmental responsibility undertakings earn the trust and loyalty of customers, employees, and investors, thus the sustainable financial practices are converted to quantifiable gains through performance. This conforms to the studies that declare CSR as a tool by which companies increase legitimacy and operational effectiveness in the new markets (Khan et al., 2020; Ali et al., 2021).

The results also show that the effect of green financing on performance is moderated by the size of firms. Green financing initiatives have more advantages to big firms than to small firms. This has been explained by the presence of resources, high level of infrastructure and capacity to absorb start up expenses of implementation. The moderation effect validates that the magnitude of operations has a role in the level to which sustainable financial practices transform into superior company performances, justifying results found in other researchers in China and other developing economies (Chen et al., 2021; Wang and Sarkis, 2020).

On the whole, the integrated model emphasizes that an amalgamation of green financing, CSR and assisted by organizational capacity is an important force behind firm performance. The fact that the model has high explanatory power ($R^2 = 0.68$) reveals that these factors together explain a significant level of performance variations, and it highlights their applicability to corporate decision-makers of Pakistan.

Conclusion

This paper presents empirical support that green financing boosts the performance of firms in the corporate sector of Pakistan and its performance is partly mediation-driven by CSR and moderated by firm size. Companies that sensibly invest in their eco-friendly endeavors and, at the same time, undertake CSR endeavors have a greater chance of registering better financial performance. Moreover, bigger companies gain disproportionately of such practices because of the increased access to financial, technological, and human resources.

The results emphasize the significance of a combined strategy on sustainability regarding corporate strategy. Green financing plus CSR initiatives can ensure that firms are able to meet the social and environmental needs and at the same time, can create real business value. The moderating role of firm size emphasizes the fact that organizations, when pursuing sustainable finance policy, have to take into consideration the organizational capacity since smaller organizations might need more assistance in attaining the same results.

Recommendations

In accordance with the results of the studies, some practical recommendations to managers and policymakers are provided:

To begin with, companies need to invest in green financing projects with a focus on projects, which cause environmental effects on the environment and introduce operating efficiencies. Such initiatives ought to be planned as part of financial planning to maximise returns.

Second, it needs to correlate CSRs activities with green projects of financing. Integrating environmental investments with social responsibility initiatives, organizations are able to enhance stakeholder engagement, improve reputation, and firm performance. This alignment makes the sustainable practices that are ethically as well as financially important.

Third, smaller firms should be encouraged by the policymakers and industry associations to adopt green financing practices. Financial and operational constraints may be mitigated with the help of training, incentives, and facilitating in resources whereby smaller organizations will be able to enjoy the benefits of sustainable investments just like larger ones.

Lastly, companies must embrace the idea of constant monitoring and review of green financing and CSR programs to gauge their effectiveness on performance. Regular reporting and openness of environmental and social performance can increase credibility and motivate additional investment in the sustainable practices.

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