

The Mediating Role of Financial Performance on the Relationship between Capital Structure and ESG performance of Ghanaian Non-Financial Firms

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Abstract

The dynamic effects of capital structure (CS) decisions on ESG performance (ESGP) were examined empirically in this study, as well as how financial performance (FP) mediates this relationship. Panel data were collated from the annual reports of 16 non-financial firms enlisted on the Ghana Stock Exchange from 2015 to 2024, and the random-effects model was employed to analyze the data. The results indicated that (1) both debt and equity capital have a negative influence on ESGP, corroborating the agency theory; (2) debt capital does not significantly influence FP, but equity capital positively influences FP, violating the Modigliani and Miller theory; and (3) FP positively influences ESGP, corroborating the resource-based view theory. Further analysis regarding the mediation effect showed that FP partially mediates the link between CS and ESGP. The study emphasizes the need for managers to be cautious when choosing the optimal CS, bearing in mind that improved FP is one of the ways their CS decisions can enhance ESGP. The novelty of this study lies in the development and validation of a mediation model of CS, FP, and ESGP in a sub-Saharan African context, enhancing our understanding of corporate finance in underdeveloped capital markets.

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1. Introduction

In the past few years, there has been a growing focus among shareholders, investors, and creditors globally on the capital structure (CS) decisions made by publicly listed companies (Boateng et al., 2022; Mahmood et al., 2023). Consequently, investigating CS has increasingly become a popular field of study, especially in relation to the impact of CS on environmental, social, and governance performance (ESGP) (Rashid et al., 2025). CS integrates the various financing options upon which a company models its operations, such as debt, equity, and internally generated funds (Arhinful et al., 2024). Companies engage in CS decisions by evaluating the associated costs and benefits of different financing options. In this sense, decisions regarding the optimal CS represent some of the most pivotal strategic decision-making within a firm, with outcomes influenced by a multitude of factors, including various financial and non-financial performance metrics (Al Amosh et al., 2024; Isaac & Ayodeji, 2024).

Past studies on CS and ESGP have yielded significant advancements across various dimensions, resulting in numerous valuable findings. Some studies have established a beneficial association between CS and ESGP (Adeneye et al., 2023; de Campos-Rasera et al., 2021; Khan et al., 2024; Zhao & Zhang, 2024). Other studies found an inverse association (Gahramanova & Furtuna, 2023; La Rosa & Bernini, 2022) and no association between CS and ESGP (Saric & Lindkvist, 2020; Li et al., 2024). These inconsistent results indicate that there is an evidence gap—a contradictory evidence gap in the existing studies—warranting additional research to contribute to the debate.

Moreover, the previous studies exhibit several notable deficiencies: First, the majority of previous studies concentrated solely on a specific facet of ESGP by employing either environmental metrics, social metrics, or a combination of the two as proxies, rather than engaging in a thorough evaluation of all three dimensions. Second, the direct link between CS and ESGP has been the dominant focus, but the indirect effect of financial performance (FP) has received scant attention. Although Zhou et al. (2022) investigated how ESGP impact company market value through FP, the current study is different in that it focuses on how CS influences ESGP through FP. Al Amosh et al. (2024) observe that prior studies have overlooked financial variables as influential drivers of firms' non-financial performance. Thus, the conflicting findings on the association between CS and ESGP point to the need to examine the indirect path through which CS influences ESGP to generate additional insights. In other words, desirable research findings on the intervening role of FP in the link between CS and ESGP do not exist—a knowledge gap our study seeks to fill.

The study primarily encompasses the following contributions: First, as previously noted, our study fills an important gap in the extant literature by incorporating FP, a mediator, into the research model examining how CS influences the ESGP of publicly listed non-financial firms. Therefore, our study contributes to empirical literature by developing a linear regression and mediating effect models, improving our understanding of the interplay among the variables. Second, our study is the first to empirically validate a theoretical model of CS, FP, and the ESGP of listed non-financial firms in Ghana. By including an African perspective, our findings add novel insights, enriching the corporate finance literature on market capitals in developing countries. Third, we present a comprehensive theoretical framework that integrates Modigliani and Miller theory, agency theory, and the resource-based view (RBV) theory to enrich the discussion surrounding the CS, FP, and ESGP link. Consequently, our study holds significant implications for the choices made by company managers, shareholders, investors, and financing institutions, as it provides them with in-depth knowledge of the mechanisms by which CS influences ESGP.

The ensuing sections of this manuscript are structured in the following manner: Section two presents a comprehensive literature review focused on the association between CP and ESGP, the link between CS and FP, and the relationship linking FP with ESGP. We propose research hypotheses based on this synthesis. Section three encompasses the research design, which involves the sample selection and data source, variable measurement, and econometric modeling. Section four entails a thorough analysis and discussion of the results, while section five closes the paper with the conclusion, limitations, and some suggestions for further study.

2. Literature Review

Capital structure and ESG performance

Capital is acknowledged as a fundamental resource for financing a company's operations, aimed at generating enhanced value for stakeholders. Such value is realized through debt and equity, each presenting its own set of costs and benefits. As the importance of sustainability continues to grow within academic circles, considerable research has focused on the effects of employing debt capital, equity capital, or a hybrid of both on ESGP. Al Amosh et al. (2024) discovered that debt capital positively influences ESGP, indicating that managers of Jordanian companies are actively seeking to minimize agency costs through investments in ESG initiatives. In contrast, the findings indicated that equity financing did not significantly improve ESGP. Khan et al. (2024) linked CS and ESG-related activities, facilitated by market timing practices. They found that enhanced stability of ESGP was linked to a slight rise in equity issuance. Zhao and Zhang (2024) revealed that there exists a negative correlation

between debt financing and both environmental and governance performance, while social performance remains unaffected. Conversely, equity financing positively impacts all three dimensions of ESGP. In their study of Chinese listed companies, Li et al. (2024) revealed that the choice of CS does not affect ESGP. Adeneye et al. (2023) showed that debt capital favorably impacts ESGP, but equity capital harms it. La Rosa and Bernini (2022) demonstrated that inadequate ESGP, especially concerning environmental matters, raises equity cost; nonetheless, this impact diminishes when corporate efforts to enhance environmental performance are taken into account. de Campos-Rasera et al. (2021) showed a positive association between equity capital and ESGP, but observed that opting for debt capital harms ESGP. Saric and Lindkvist (2020) discovered that the ideal CS, as indicated by the debt ratio, has no effect on ESGP within the EU region.

From a theoretical standpoint, agency theory elucidates the connection between CS and ESGP. CS decisions are influenced by a range of agency issues involving stakeholders, including conflicts that may arise between management and shareholders (Jensen & Meckling, 1976). In this context, firms with high leverage experience increased agency costs as a result of capital reallocation from creditors to shareholders. Increasing the level of information transparency can enable companies to mitigate potential conflicts of interest that may arise between creditors and shareholders (Adeneye et al., 2023), thereby diminishing agency costs. To evaluate this theory, we investigate the fundamental motivations that inform the observed connection between CS and ESGP. We propose that distinct and conflicting interests among managers, debtholders, and shareholders could result in varying rewards. We argue that firms opting to incur debt predominantly allocate these funds towards internal operations, resulting in minimal to no financial resources available for ESG initiatives. Thus, we expect a negative relationship between debt capital and ESGP. Nonetheless, firms that choose equity financing tend to honor the sustainability objectives of shareholders, placing greater emphasis on ESG practices rather than the profit-driven motives of managers. We contend that shareholders and investors prioritize firms that demonstrate a commitment to long-term sustainability over those that merely promise short-term profits. In light of the above literature, we hypothesize that:

H1a: Debt capital negatively influences ESGP.

H1b: Equity capital positively influences ESGP.

Capital structure and financial performance

Previous studies on the link between CS and FP are well documented. Akinrinola et al. (2023) investigated how CS affects FP in a sample of Nigerian manufacturing companies and found

that both debt-to-equity and debt-to-assets ratios positively affect the return on assets (ROA). Arhinful et al. (2023) found that the debt-to-EBITDA ratio negatively influences the net interest margin and ROA in a sample of Ghanaian listed companies. Ferriswara et al., (2022) explored whether CS predicts FP in the Jakarta Islamic Index. They found that both the debt-to-asset and debt-to-equity ratios have no relationship with FP proxied by the assets turnover, ROA, return on equity (ROE), and earnings per share. Mohammad and Bujang (2020) examined whether CS affects FP in a sample of Malaysia-listed companies. The findings revealed an inverse correlation between the debt-to-assets ratio and ROA. Similarly, Narsaiah (2020) showed that the debt-to-assets ratio has a negative influence on both ROA and ROE in a sample of India-listed companies. Furthermore, Sivalingam and Kengatharan (2018) established that the debt-to-assets ratio has no relationship with both ROA and ROE in a sample of Sri Lanka-listed companies.

Theoretically, Modigliani and Miller's (1958) capital structure irrelevance theory can explain the connection between CS and FP. According to this theory, a firm's value remains unchanged by its CS. In applying this theory, we equate the firm value to financial performance and assess whether financial performance increases, decreases, or does not change in relation to debt and equity capital. A significant positive or negative relationship indicates that there is a noticeable change depending on the coefficients of debt and equity capital. If this is the case, we conclude the results violate the theory. However, if the results show an insignificant relationship, we can conclude that the theory is not supported. In light of the above literature, we hypothesize that:

H2a: Debt capital negatively influences FP.

H2b: Equity capital positively influences FP.

Financial performance and ESG performance

Previous studies on the effect of ESGP on FP are well documented. However, studies that looked into how FP influences ESGP are scarce. Only two studies appeared in the literature (DasGupta, 2022; Hamdi et al., 2022). In particular, DasGupta (2022) found strong evidence in support of a positive association between FP shortfall and ESGP in 27 countries. Hamdi et al. (2022) explored whether FP promotes ESG practices in US firms and found a positive relationship. Due to the dearth of research on the link between FP and ESGP, our study fills an empirical gap.

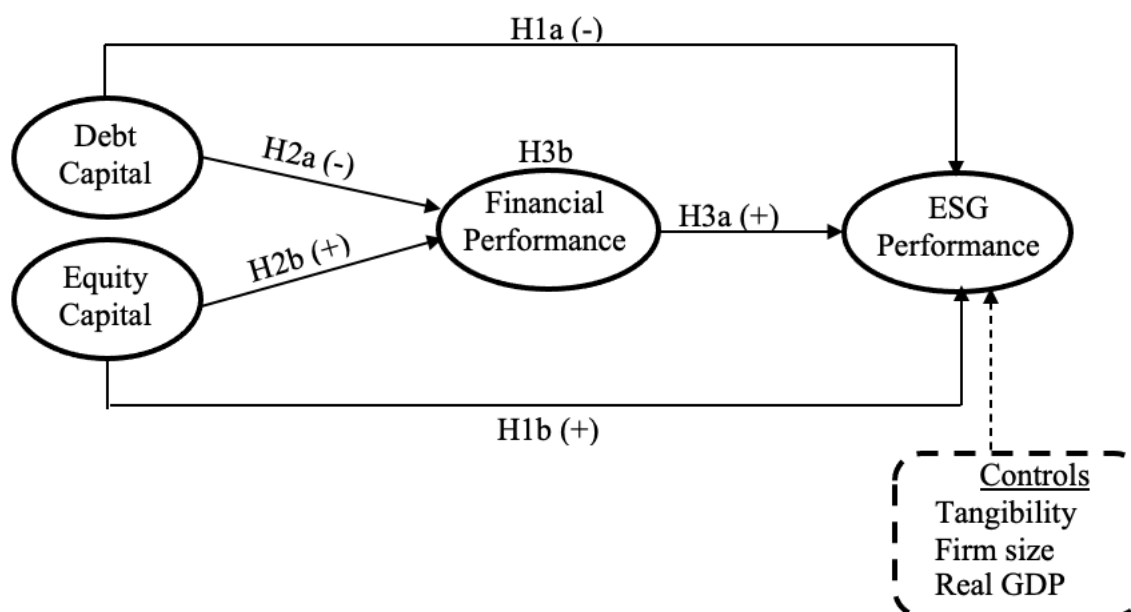
From a theoretical standpoint, the RBV theory can explain this relationship. This theory argues that companies possess diverse resources and capabilities, which fundamentally

underpin their ability to sustain competitive advantages (Barney, 1991; Wernerfelt, 1984). For instance, regarding the ESGP of non-financial companies, under the influence of environmental pressures, the financial investments made by these companies in environmental management, corporate social responsibilities, and governance practices serve as a crucial resource for securing competitive advantages. We argue that the financial investment made by a company managers and shareholders, each possessing distinct knowledge and capabilities, is a unique and valuable resource that is inherently difficult to replicate. Such an investment fosters an environment that enhances the operating income and profitability of the company, ultimately achieving a synergistic balance between environmental stewardship and the competitive edge of the company. We applied this theory by examining the significance of the relationship between FP and ESGP. A negative relationship indicates that an enhancement in companies' economic resources, stemming from better financial performance, may diminish their inclination toward ESG practices. On the other hand, a positive relationship suggests that an enhancement in companies' economic resources, stemming from better FP, would increase their proclivity towards ESG practices to maintain legitimacy.

Overall, we argue that capital structure, supported by Modigliani and Miller's theory, may positively or negatively affect FP. Then, from the perspective of the RBV theory, firms quantify the volume of their economic resources based on FP, which helps them determine how extensively they can engage in ESG initiatives. Finally, CS, under the lens of the agency theory, ultimately affects firms' ESGP via FP. In light of the above literature, we hypothesize that:

H3a: FP positively influences ESGP

H3b: FP mediates the link between CS and ESGP.



Source: Compiled by the author (2025)

Figure 1. Research Model

3. Research Methods

Sample selection and data source

This study uses data from a selection of publicly traded non-financial firms listed on the Ghana Stock Exchange (GSE), covering the years 2015 to 2024 as its sample set. This timeframe was selected due to the commencement of firms' disclosures regarding their ESG activities starting in 2015 in their annual reports; thus, it presents a suitable context for analysis. The choice of non-financial firms is based on their position as some of the largest and most stringently regulated companies worldwide regarding carbon emissions. Furthermore, we selected non-financial firms because they significantly impact various sectors of the Ghanaian economy and play a pivotal role in its development. A total of twenty (20) non-financial firms were identified for screening before final inclusion into the study. The following steps were taken to narrow the selection of the listed firms' samples: (1) excluding firms that have been delisted or with a “delisting warning”; and (2) omitting samples with little or no data on ESG performance in the past three years. We acquired a total of 150 valid observations for sixteen (16) distinct companies after the aforementioned screening process.

We meticulously extracted data on the CS and FP variables from the firms' annual reports and financial statements over the 2015 to 2024 period of study. We retrieved these reports from the website of "Annual Reports Ghana," which publishes financial information in relation to the Ghana capital market and is licensed by the Ghana Security and Exchange Commission. Next, we manually calculated the CS and FP values for each of the 16 firms over the period under study. Regarding the source of the ESGP data, we carefully reviewed the annual reports to identify activities related to ESG reporting. Next, we employ the ESG rating criteria established by the Ghana Stock Exchange (2022) to calculate an index that assesses the ESGP of each firm. This method was deemed appropriate since there is no centralized database in Ghana that houses the ESGP index for non-financial firms.

Variable measurement

Independent variable: Capital structure

We measured CS using two indicators: long-term debt-to-total-assets (LTDTA) and long-term debt-to-total-equity (LTDTE) ratios. The LTDTA ratio quantifies the proportion of a company's assets that are financed through long-term debt instruments, such as bank loans, thereby facilitating an evaluation of its leverage and capacity to fulfill financial commitments. In short, we referred to this measure as debt capital or financing. We calculated this ratio by taking long-term debt and dividing it by the firm's total assets. The choice of this ratio was informed by its popular application among previous researchers, as seen under the literature review section. Additionally, the selection of this ratio improves our understanding of how firms leverage long-term debt and the risk or benefits it presents to investors or creditors.

The LTDTE ratio represents the allocation of resources from shareholders to long-term debt obligations. In short, we referred to the measure as equity capital or financing. We calculated this ratio by dividing a firm's long-term debt by its shareholder's equity. The LTDTE, similar to the LTDTA, finds extensive application among previous researchers, which informs our decision to include it in the current study. Furthermore, it improves our understanding of how nonfinancial firms in a developing country optimize equity financing to generate various performance outcomes. An increase in either ratio signifies an increased proportion of capital sourced from debt or equity financing and increased financial risk. Conversely, a decrease reflects the opposite scenario.

Dependent variable: ESG performance



We adhered to the Ghana Stock Exchange (2022) ESG disclosures guidance handbook in the compilation of the ESGP data. The ESG score ranges from 0 for companies that disclose no ESG items to 100 percent for those who fully comply with the Global Reporting Initiative (GRI) standard. We evaluated the performance of each ESG aspect (environment, social, and governance) by comparing the companies' annual reports with the standards specified in the GSE disclosure manual checklist. A score of 100 percent was assigned to items that were completely disclosed or reported in the annual reports. In contrast, those that were partially disclosed received a score of 50 percent, but those with no disclosure received a score of 0.

Mediator variable: Financial performance

We used ROA as a proxy for FP. The ROA ratio illustrates the efficacy with which a company leverages its assets to produce profits. It elucidates the earnings derived from capital that has been invested. We calculated this ratio by dividing net income by total assets corresponding to each firm. ROA was preferred over return on equity (ROE) because it is useful for evaluating comprehensive operational efficiency and the effectiveness with which a company utilizes its assets to generate profits, irrespective of the financing method employed (debt or equity) (De Wet & Du Toit, 2007). A higher ROA indicates that a company demonstrates greater efficiency and productivity in managing its balance sheet to yield profits. A diminished ROA suggests potential for enhancement.

Control variables

Incorporating control variables enhances the robustness of causal assertions by eliminating alternative interpretations (Li, 2021). Without relevant control variables, the findings may be susceptible to the effects of omitted variable bias (Wilms et al., 2021). In constructing a comprehensive model, we incorporated firm-specific variables such as firm size and tangibility alongside a country-level variable, namely real gross domestic product (GDP), which has been well-documented as an influential factor in both FP and ESGP. Firm size (log of total assets) was anticipated to positively affect ESGP, given that larger firms are likely to realize economies of scale compared to SMEs (Drempetic et al., 2020). A negative coefficient for tangibility, defined as tangible assets divided by total assets, was expected, given the common practice of companies utilizing tangible assets as collateral for debt financing (Al-Gharaibeh et al., 2023). Data for both firm size and tangibility were obtained from firms' annual reports over the period under study. Ultimately, a positive coefficient was expected for real GDP growth, as the efficient use of a country's natural and human resources plays a crucial role in its sustainability and motivates firms to embrace analogous practices, consequently enhancing ESG performance (Adeneye et al., 2023). Data for this variable was

retrieved from the World Bank database. The summary of the variable measurement is presented in Table 1.

Table 1. Summary of study variables

Types of variables	Name of variable	Measure	Source
Independent variable	Capital Structure	Long-term debt-to-total-assets	Firms' Annual Reports
		Long-term debt-to-total-equity	
Dependent variable	ESG performance	0 = No disclosure	Firms' Annual Reports
		50% = Partial disclosure 100% = Full disclosure	
Mediating variable	Financial Performance	Net income/total assets	Firms' Annual Reports
Control variables	Tangibility	Tangible assets/total assets	Firms' Annual Reports
	Firm Size	Log of total assets	
	Gross Domestic Product	Real GDP growth (%)	World Bank

Source: Processed by author (2025)

Econometric modelling

To evaluate the hypotheses presented earlier, we initially constructed the relational models concerning the influence of CS on both FP and ESGP independently. Next, we employed the steps outlined by Baron and Kenny (1986) to conduct mediation analysis, using financial performance as a mediator. The Hausman specification test was employed to ascertain the most suitable approach—whether fixed effects or random effects—for the presentation of the study findings. The analysis was conducted using the EViews software version 14.

Capital structure and ESG performance

First, we constructed a regression model of CS and ESGP as follows:

$$ESGP_{it} = \alpha_0 + \alpha_1 LTDTA_{it} + \alpha_2 LTDTE_{it} + \alpha_3 TAN_{it} + \alpha_4 FS_{it} + \alpha_5 GDP_{it} + \varepsilon_{it} \quad (1)$$

where $ESGP_{it}$ is the ESG performance of firm i in year t ; $LTDTA_{it}$ and $LTDTE_{it}$ denote long-term debt-to-total assets and long-term debt-to-total equity of firm i in year t respectively; TAN , FS , and GDP are the control variables; α_0 is the constant; α_1 and α_2 are the coefficients

of debt and equity capital respectively; $\alpha_3 \dots \alpha_5$ are the coefficients of each control variable on ESG performance; and ε_{it} is the error term. If α_1 is negative and significant, then H1a is supported; that is, debt capital negatively impacts ESGP. However, if α_2 is positive and significant, then H1b is supported; that is, equity capital positively impacts ESGP.

Capital structure and financial performance

Second, we constructed a regression model of CS and FP as follows:

$$ROA_{it} = \alpha_6 + \alpha_7 LTDTA_{it} + \alpha_8 LTDTE_{it} + \alpha_9 TAN_{it} + \alpha_{10} FS_{it} + \alpha_{11} GDP_{it} + \varepsilon_{it} \quad (2)$$

where ROA_{it} is the return on assets of firm i in year t , α_6 is the constant, α_7 and α_8 are the coefficients of debt and equity capital respectively, $\alpha_9 \dots \alpha_{11}$ are the coefficients of each control variable on financial performance, and ε_{it} is the error term. If α_7 is negative and significant, then H2a is supported; that is, debt capital negatively impacts financial performance. However, if α_8 is positive and significant, then H2b is supported; that is, equity capital positively impacts financial performance.

The mediating effect of financial performance

Lastly, we constructed a mediated-regression model of FP as follows:

$$ESGP_{it} = \alpha_{12} + \alpha_{13} LTDTA_{it} + \alpha_{14} LTDTE_{it} + \alpha_{15} ROA_{it} + \alpha_{16} TAN_{it} + \alpha_{17} FS_{it} + \alpha_{18} GDP_{it} + \varepsilon_{it} \quad (3)$$

Where $ESGP_{it}$ is the ESG performance of firm i in year t ; ROA_{it} is the return on assets of firm i in year t ; α_{12} is the constant term; $\alpha_{13} \dots \alpha_{15}$ are the coefficients of debt capital, equity capital, and ROA respectively; $\alpha_{16} \dots \alpha_{18}$ are the coefficients of each control variable on ESG performance; and ε_{it} is the error term.

Eq. (3) integrates CS, FP, and ESGP within a unified research framework. Alongside Eq. (1) and (2), it serves to examine the mediating role of FP in the link between CS and ESGP. In accordance with the testing methods and procedures outlined in the mediating effect model established by Baron and Kenny (1986), we tested the indirect effect of FP as follows:

First, Eq. (1) tests whether the regression coefficients, α_1 and α_2 are significant. Should that be the case, the subsequent action will be initiated; otherwise, the analysis will be halted. Second, Eq. (2) tests whether the regression coefficients α_7 and α_8 are significant. If a

significant result is achieved, it indicates that debt capital and equity capital can affect ROA; otherwise, the analysis will be halted.

Finally, as depicted in Eq. (3), financial performance is added into Eq. (1). Accordingly, if the coefficient of ROA (α_{15}) is positive and significant, then H3a is supported; that is, financial performance positively impacts ESG performance. Furthermore, if α_{15} is significant and the coefficients of debt and equity capital (α_{13} and α_{14}) are also significant and diminishes in relation to the coefficients of α_1 and α_2 , we can conclude that there is a partial mediation effect. However, if α_{15} is significant but α_{13} and α_{14} are not significant, then we can conclude that a complete mediation effect exists. Therefore, we test H3b that financial performance mediates the link between capital structure and ESG performance.

4. Results

Descriptive statistics

Table 2 presents the descriptive statistics, which include the mean, standard deviation, minimum, and maximum values. The range of LTDTA values is from -0.88 to 1.45, with a standard deviation of 0.46 and an average of 0.602. This result indicates that the sampled firms have a high leverage, depending on long-term loans to finance their operations. Similarly, LTDTE values range from -0.45 to 0.95, with a standard deviation of 0.31 and an average of 0.296. This result suggests that the sampled firms' proportion of capital financed by equity is low relative to that financed by debt. For ROA, the lowest observed value is -0.75, and the highest is 0.64, which also has a standard deviation of 0.214 and an average of 0.042. This result shows that the FP of the sampled firms over the period is very low. Furthermore, the lowest ESGP value observed is 0.05 and the highest is 0.95, with an average of 0.50 and a standard deviation of 0.226. This result indicates that the overall ESG performance of the sampled firms is high over the nine-year period.

Table 2. Results of descriptive statistics

Variables	Code	N	Mean	Std Deviation	Minimum	Maximum
Debt capital	LTDTA	150	0.602	0.46	-0.88	1.45
Equity capital	LTDTE	150	0.296	0.31	-0.45	0.95
Return on assets	ROA	150	0.042	0.214	-0.75	0.64
ESG performance	ESGP	150	0.50	0.226	0.05	0.95
Firm size	FS	150	7.915	0.883	4.98	9.32
Tangibility	TAN	150	0.451	0.254	0.01	0.93
Real GDP	GDP	150	0.43	2.165	0.51	8.13

Note: N denotes number of observations

Source: Results of processed data (2025)

Correlation analysis

To check whether the predictors in the regression model exhibit high correlation, which can affect the reliability of the final regression results, the correlation analysis was performed. In this study, we used the Pearson correlation to check for multicollinearity. Table 3 displays the results.

Table 3. Pearson correlation results

	1	2	3	4	5	6	7
1. LTDTA	1						
2. LTDTE	-0.646***	1					
3. ROA	-0.375***	0.644***	1				
4. FS	0.20**	0.092	0.043	1			
5. TAN	0.153*	-0.23**	-0.293***	0.153*	1		
6. ESGP	-0.189**	0.015	0.090	0.203**	-0.036	1	
7. GDP	0.042	-0.057	-0.022	0.115	-0.037	-0.073	1

Note: * denotes significance at the 10% level,
 ** denotes significance at the 5% level,
 *** denotes significance at the 1% level.

Source: Results of processed data (2025)

As seen in Table 3, the variables have an approximate Pearson correlation coefficient of 0.644. According to Field (2018), if the Pearson correlation coefficient exceeds 0.8, multicollinearity is present. Since 0.644 is less than 0.8, we can infer that multicollinearity is absent and that we can trust the final regression results as presented in the next subsection.

Multivariate regression analysis

As discussed in the methods section, the selection of either the fixed effects or random effects model was based on the Hausman test. The results at the bottom of Table 4 show that the Prob (Chi-square statistic) of the Hausman test for each model is greater than the 1% significance level. Therefore, we accept the null hypothesis that the random effects model is the best choice. The Prob (F-statistic) is less than the 1% significance level, indicating that the use of each model for prediction is valid. The R-squared value indicates that the predictors in each model account for about 17.9%, 44.1%, and 20% of the variation in the dependent variable.

Table 4. Random effects model results

Model 1 (ESGP)	Model 2 (ROA)	Model 3 (ESGP)
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Variables	β	t-stat	β	t-stat	β	t-stat
LTDTA	-0.239***	-4.895	0.036	0.871	-0.247***	-5.086
LTDTE	-0.241***	-3.31	0.456***	7.424	-0.325***	-3.832
ROA	—	—	—	—	0.189*	1.909
FS	0.082***	4.104	-0.003	-0.161	0.081***	4.094
TAN	-0.087	-1.314	-0.127**	-2.284	-0.063	-0.943
GDP	-0.011	-0.786	0.001	0.135	-0.011	-0.696
Constant	0.153	0.973	-0.04	-0.325	0.171	1.068
R-squared	0.179		0.441		0.20	
Prob (Chi-Sq statistic)	0.247		0.72		0.447	
Prob (F-statistic)	0.000		0.000		0.000	

Note: * denotes significance at the 10% level,

** denotes significance at the 5% level,

*** denotes significance at the 1% level.

Source: Results of processed data (2025)

In Model 1, LTDTA has a negative effect on ESGP, which supports H1a. This finding suggests that high leverage creates financial limitations, restricting companies' capacity to direct resources towards ESG-related initiatives. Lenders or creditors may prioritize financial stability and repayment assurance over long-term sustainability objectives, thus discouraging managers from allocating resources to enhance non-financial performance. Similarly, LTDTE has a negative effect on ESGP, failing to support H1b, which postulated a positive relationship. This result is unexpected because equity financing should promote ESG adoption, as shareholders are progressively insisting on sustainable practices. The negative impact observed in this study may suggest that equity investors in the sampled firms prioritize short-term returns over long-term sustainability commitments. Furthermore, it could be a sign of weak institutional investor pressure or a lack of shareholder activism in Ghanaian non-financial firms. These findings underscore the intricate influence of CS on ESGP.

Empirically, our findings support the work of Zhao and Zhang (2024), who found that debt capital negatively influences ESGP, but it deviates from the positive link between equity capital and ESGP reported in the same work. Furthermore, the beneficial effect of equity capital on ESGP reported by de Campos-Rasera et al. (2021) contradicts our findings. However, they found an adverse association between debt capital and ESGP, which supports our findings. Adeneye et al. (2023) verified a positive relationship between debt capital and ESGP, which is inconsistent with our findings. However, they found a negative link between equity capital and ESGP, which aligns our findings. Furthermore, the findings do not support the conclusion by Al Amosh et al. (2024), who found a positive relationship between debt

capital and ESGP; Khan et al. (2024), who established a positive association between equity capital and ESGP; and Saric and Lindkvist (2020), who found that debt capital has no effect on ESGP.

From the theoretical lens, the negative impact of debt and equity capital lends support to the agency theory—distinct and conflicting interests among managers, creditors, and shareholders could result in varying rewards. All these stakeholders are profit-inclined, especially creditors and shareholders. Consequently, company managers work in the best interest of these stakeholders, resulting in minimal resources available for ESG initiatives.

In Model 2, debt capital has no significant effect on ROA, which fails to support H2a. Given the context, this finding suggests that leverage could not always have a positive or negative effect on a company's bottom line. One possible explanation is that businesses avoid going bankrupt by keeping their debt levels low, which allows them to take advantage of interest deductions without sacrificing profitability. This could also imply that creditors exert pressure on borrowers to monitor them, a practice that neither significantly enhances nor detracts from their FP. This suggests that debt does not play a significant role in generating profit. Conversely, equity capital exerts a positive effect on ROA, hence corroborating H2b. This finding illustrates the importance of equity financing in enhancing firm profitability. Equity capital mitigates financial risk, reduces obligatory payments in contrast to debt, and affords enterprises greater latitude in allocating their resources towards productive investments. This observation is especially pertinent in Ghana, where the pursuit of affordable debt presents significant challenges, while investors demonstrate a robust confidence in equity markets. Furthermore, investors often pursue a deeper understanding and the most effective use of resources, which can aid firm managers in improving their decision-making processes towards better ROA.

Empirically, our finding supports the research by Akinrinola et al. (2023), who found that equity capital positively influences ROA, but it does not support the positive relationship between debt capital and ROA found in the same work. Similarly, the finding deviates from several studies that found a negative relationship between debt capital and ROA (Arhinful et al., 2023; Mohammad and Bujang, 2020; Narsaiah, 2020), but supports others that observed no relationship between debt capital and ROA (Ferriswara et al., 2022; Sivalingam and Kengatharan, 2018).

Although the lack of relationship between debt capital and ROA aligns with the Modigliani and Miller theory, the positive effect of equity capital challenges this theory. While the theory claims that a firm's value remains unchanged by its capital structure, our finding shows that

the firm value, proxied by ROA, changes by 0.456 points as a result of a unit increase in equity capital. Therefore, the optimal capital structure, which this study found to be equity capital, violates the Modigliani and Miller theory due to its positive effect on ROA.

In Model 3, ROA positively influences ESG performance, which supports H3a. This finding supports the research by DasGupta (2022) and Hamdi et al. (2022), who also reported a positive relationship between FP and ESGP. The finding indicates that an increase in ROA increases firms' appetite to engage in ESG practices, which is consistent with the resource-based view theory. In essence, enhancement in companies' economic resources, stemming from improved financial performance, increases firms' proclivity towards ESG practices to maintain legitimacy. Increased financial investment fosters an environment that enhances the operating income and profitability of the company, ultimately achieving a synergistic balance between ESG stewardship and the competitive edge of the company. Furthermore, we observed that both debt and equity capital are still significant and decrease relative to the coefficients in Model 1. Therefore, we conclude that there is a partial mediating effect; that is, FP partially mediates the link between CS and ESGP. This supports H3b.

5. Conclusion and Suggestion

The dynamic effects of capital structure decisions on ESG performance were examined empirically in this study, as well as how financial performance mediates this relationship. The results indicated that (1) both debt and equity capital have a negative influence on ESG performance, corroborating the agency theory; (2) debt capital does not significantly influence financial performance, but equity capital positively influences financial performance, violating the Modigliani and Miller theory; and (3) financial performance positively influences ESG performance, corroborating the resource-based view theory. Further analysis regarding the mediation effect showed that financial performance partially mediates the link between capital structure and ESG performance. Our findings have implications for practice and policy.

Practically, if the focus of managers is to improve ESG performance, then they should place less attention on debt and equity capital due to their negative impact. Increase in debt capital increases firms' obligation to debt and interest payments, leaving little or no funds to engage in ESG practices. Similarly, an increase in equity capital increases the amount of dividend payable to shareholders, leaving little funding for ESG initiatives. However, if the focus of managers is to improve financial performance, then floating equity shares is a better option due to its positive impact. Furthermore, individual investors can integrate sustainability-related data provided by companies into their investment decisions, thanks to advancements

in Ghana's capital marketplace information disclosure framework. By leveraging the capabilities and benefits of ESG disclosure, they can identify outstanding companies, thereby enhancing their stock portfolios' resilience against shocks and stabilizing returns. Lastly, it is imperative for those in positions of policy-making and regulation to prioritize ESG performance ratings and to foster a greater inclination among listed companies to engage proactively in the management of ESG factors.

The main limitation of this study is the small sample of non-financial firms selected for analysis. This is because non-financial firms listed on the Ghana Stock Exchange are few. It is hoped that in the future, more firms will be listed, and future researchers are encouraged to increase the sample size and employ more rigorous econometric modeling, such as the generalized method of moments or the dynamic panel model.

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