
The Impact of Ownership Structure on ESG Performance: Evidence from Listed Firms in the Moroccan Market.

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Abstract

This study examines the impact of ownership structure on ESG performance among firms listed on the Casablanca Stock Exchange over the period 2019–2024. Using a balanced panel of 40 Moroccan listed companies and Refinitiv ESG scores, the research analyzes the effects of institutional ownership, family ownership, state ownership, and ownership concentration on firms' sustainability performance. The study employs panel data regression models, including pooled OLS, Random Effects, and Fixed Effects estimations. The findings reveal that institutional ownership positively influences ESG performance, while family ownership shows a negative relationship with ESG engagement. In contrast, state ownership and ownership concentration do not exhibit significant effects after controlling for firm-specific heterogeneity. The study contributes to the literature on corporate governance and sustainable finance by providing evidence from an emerging African market characterized by concentrated ownership structures and evolving ESG practices.

Keywords: ESG performance; ownership structure; corporate governance; Morocco.

Introduction

Over the last decades, Environmental, Social, and Governance (ESG) criteria have emerged as major determinants of firms' overall performance and long-term sustainability. In response to growing concerns related to climate change, social inequalities, and increasing demands for transparency, companies are now expected to integrate extra-financial considerations into the core of their strategic orientation and governance mechanisms. This evolution is largely driven by the increasing pressure exerted by investors, regulators, and stakeholders, who increasingly perceive ESG performance as a key driver of sustainable value creation and long-term risk mitigation (Eccles, Ioannou, & Serafeim, 2014). As a result, ESG practices have progressively shifted from a voluntary managerial initiative to a strategic imperative influencing firms' competitiveness, legitimacy, and access to capital markets.

Within this context, corporate governance constitutes a fundamental mechanism shaping the adoption and implementation of ESG practices. The corporate governance literature emphasizes that ownership structure plays a critical role in influencing firms' strategic decisions, monitoring mechanisms, investment orientations, and risk management policies (Jensen & Meckling, 1976; Shleifer & Vishny, 1997). As key decision-makers and providers of capital, shareholders may either encourage or constrain the integration of ESG dimensions depending on their investment horizon, governance objectives, incentives, and degree of involvement in corporate control. Consequently, ownership structure represents a central determinant that may explain the heterogeneity observed in ESG performance across firms.

Previous empirical studies investigating the relationship between ownership structure and ESG performance provide mixed and inconclusive findings, highlighting differentiated effects according to the type of shareholder. Institutional investors are generally associated with stronger ESG engagement due to their monitoring capacity, professional expertise, and long-term investment orientation (Dimson, Karakaş, & Li, 2015). In contrast, family ownership produces ambiguous effects. While family-controlled firms may adopt long-term perspectives and place greater emphasis on reputation preservation, they may also suffer from power concentration, entrenchment issues, and lower transparency levels (Bammens, Voordeckers, & Van Gils, 2011; Miller & Le Breton-Miller, 2006). Similarly, state ownership may promote social and environmental policies through regulatory and political pressures, although it can simultaneously generate inefficiencies linked to political objectives and weaker governance mechanisms (Boubakri, Cosset, & Saffar, 2013). Furthermore, ownership concentration remains a major

governance mechanism that can either enhance or weaken ESG performance depending on the incentives and behavior of dominant shareholders (Morck, Shleifer, & Vishny, 1988).

Despite the growing body of literature on ESG and ownership structure, most existing studies have been conducted in developed economies characterized by mature financial systems and relatively stable institutional environments. Consequently, empirical evidence remains fragmented and highly context-dependent, particularly in emerging markets where ownership concentration, family control, and institutional weaknesses are more prevalent (Liang & Renneboog, 2017). In the African context, and particularly in Morocco, the relationship between ownership structure and ESG performance remains insufficiently explored despite the increasing importance of sustainable finance and corporate governance reforms. The Moroccan stock market represents a particularly relevant setting for such analysis due to the recent strengthening of ESG-related institutional and regulatory frameworks. In recent years, Moroccan authorities have introduced several initiatives aimed at promoting sustainable governance and extra-financial transparency, notably through the implementation of ESG reporting practices encouraged by the Moroccan Capital Market Authority and the creation of the MASI ESG index by the Casablanca Stock Exchange.

However, despite these institutional developments, the adoption of ESG practices among Moroccan listed firms remains heterogeneous, suggesting that internal governance characteristics may significantly influence firms' ESG orientation and disclosure quality. More specifically, the extent to which different ownership structures shape ESG performance in Moroccan listed companies remains largely underexplored in the existing literature. This gap raises an important research problem concerning the role played by institutional, family, state, and concentrated ownership structures in driving or constraining ESG engagement within emerging African capital markets.

Accordingly, this study seeks to examine the impact of ownership structure on the ESG performance of firms listed on the Casablanca Stock Exchange while taking into consideration the specific institutional characteristics of the Moroccan context. More specifically, the study investigates the influence of institutional ownership, family ownership, state ownership, and ownership concentration on ESG performance measured through Refinitiv ESG scores. The objective of this research is therefore to analyze how different ownership structures affect ESG performance within Moroccan listed firms and to identify the ownership categories that most significantly influence sustainability engagement and extra-financial transparency.

The remainder of this article is organized as follows. The first section presents the theoretical framework, literature review, and research hypotheses development. The second section describes

the research methodology, including sample selection, variable measurement, and econometric model specification. The third section presents and discusses the empirical findings.

1. Study Context, Theoretical Framework and Hypotheses Development

1.1 Moroccan ESG Context, CSR Regulation and Its Evolution

The development of Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) practices in Morocco has progressively evolved through the interaction of regulatory reforms, financial market initiatives, and increasing stakeholder expectations regarding extra-financial transparency. Since the early 2000s, Morocco has experienced a gradual institutional transformation aimed at promoting sustainable corporate governance and responsible business conduct.

One of the earliest milestones was the introduction of a voluntary CSR charter by the CGEM in 2006, inspired by the principles of the United Nations Global Compact and OECD guidelines. Although CSR adoption has progressively increased, the diffusion of ESG practices among Moroccan firms remains relatively limited. As of February 2024, only 124 Moroccan firms had obtained the CGEM CSR label, including merely 23 listed companies, highlighting the partial integration of ESG principles within the national private sector.

At the regulatory level, ESG integration became more formalized following the introduction of Circular No. 03/19 issued by the AMMC in 2019. This regulation requires publicly listed companies to disclose extra-financial information within their annual reports, representing the first explicit ESG reporting obligation imposed on Moroccan listed firms.

Simultaneously, the Bourse de Casablanca has played a significant role in promoting ESG practices through the publication of ESG reporting guidelines and the creation of the MASI ESG index. In November 2023, the index methodology was expanded to include more than 160 ESG indicators distributed across environmental, social, and governance dimensions, while the number of constituent firms increased to 20 companies representing the most advanced listed firms in terms of sustainability practices.

Despite these institutional developments, ESG adoption among Moroccan listed companies remains heterogeneous. Previous empirical evidence conducted on Moroccan listed firms revealed substantial disparities in ESG performance scores, reflecting uneven levels of extra-financial transparency and sustainability engagement. Furthermore, the 2024 Responsible Governance Barometer indicates that while 88% of listed firms communicate environmental initiatives and 83% disclose social policies, governance-related disclosure remains less systematic, suggesting that ESG integration is still evolving within the Moroccan capital market.

This institutional heterogeneity raises an important governance issue regarding the determinants of ESG performance among Moroccan listed firms. In particular, ownership structure may constitute a critical explanatory factor capable of influencing firms' ESG orientation, transparency, and sustainability strategies.

1.2 Literature Review and Hypotheses Development

The increasing pressure exerted by investors, regulators, customers, and civil society has encouraged firms to progressively integrate ESG dimensions into their strategic and governance frameworks (Eccles, Ioannou, & Serafeim, 2014). Within this context, shareholders play a central role because they possess the power to influence strategic decisions and corporate governance mechanisms. Ownership structure therefore constitutes a major governance mechanism capable of shaping firms' ESG orientation and sustainability commitment.

From the perspective of Agency Theory (Jensen & Meckling, 1976), shareholders act as principals who monitor managers in order to reduce agency conflicts and align managerial decisions with long-term corporate interests, including ESG-related objectives. However, the effectiveness of this monitoring function depends largely on the nature of shareholders, their investment horizon, their strategic priorities, and their level of involvement in corporate governance. Consequently, different ownership structures may exert heterogeneous effects on ESG performance.

Although a growing body of literature has examined the relationship between ownership structure and ESG performance, empirical findings remain mixed and inconclusive, particularly in emerging markets characterized by concentrated ownership, family-controlled firms, and evolving institutional environments. This study therefore seeks to address the following research question: To what extent does ownership structure influence the ESG performance of firms listed on the Casablanca Stock Exchange within the specific institutional context of Morocco?

To address this issue, the study investigates the effects of institutional ownership, family ownership, state ownership, and ownership concentration on ESG performance.

1.2.1 Institutional Ownership and ESG Performance

Institutional investors increasingly play a major role in promoting ESG practices within corporations. Due to their substantial financial resources and generally long-term investment horizon, institutional shareholders are strongly incentivized to monitor non-financial risks and encourage sustainable business practices (Dimson, Karakaş, & Li, 2015). Pension funds, insurance companies, and asset management institutions often perceive ESG integration as a mechanism for protecting long-term portfolio value and reducing reputational and financial risks.

Institutional investors may influence firms through shareholder activism, voting rights, direct engagement with management, and pressure for greater ESG transparency (Krüger, 2015). Several empirical studies demonstrate that institutional ownership is positively associated with ESG disclosure quality and sustainability performance, particularly regarding environmental and governance dimensions (Goranova & Ryan, 2014). Nevertheless, the heterogeneous nature of institutional investors implies that some short-term or passive investors may exert weaker pressure on ESG adoption (Bushee, 1998).

Accordingly, the following hypothesis is proposed:

H1: Institutional ownership is positively associated with firms' ESG performance.

1.2.2 Family Ownership and ESG Performance

Family ownership represents a complex governance structure regarding ESG engagement. On the one hand, family-controlled firms often adopt a long-term strategic orientation aimed at preserving corporate reputation and ensuring intergenerational continuity, which may encourage responsible and sustainable practices (Bammens, Voordeckers, & Van Gils, 2011). The close relationship between ownership and management may also facilitate the integration of social and environmental values into strategic decision-making processes (Chrisman et al., 2012).

On the other hand, concentrated family control may reduce transparency, limit external monitoring mechanisms, and increase entrenchment risks, potentially constraining ESG disclosure and accountability (Fauver & Fuerst, 2010). Moreover, socioemotional wealth preservation may sometimes prevail over formal sustainability objectives, generating ambiguous effects on ESG performance (Miller & Le Breton-Miller, 2006).

Therefore, the study formulates the following hypothesis:

H2: Family ownership negatively affects firms' ESG performance.

1.2.3 State Ownership and ESG Performance

State ownership constitutes a particular ownership structure in which firms may pursue social and environmental objectives beyond purely financial considerations. According to Stakeholder Theory (Freeman, 1984), state shareholders may encourage ESG practices in order to reinforce firms' social legitimacy and align corporate activities with broader public interests.

Several studies suggest that state participation may promote ESG disclosure and sustainability policies, especially within strategic and highly regulated industries (Megginson & Netter, 2001; Liang & Renneboog, 2017). However, Agency Theory also suggests that political interference, weak monitoring mechanisms, and non-economic objectives may generate inefficiencies and reduce governance effectiveness (Shleifer & Vishny, 1994; Boubakri et al., 2013).

Empirical evidence therefore remains inconclusive, particularly within emerging economies characterized by institutional weaknesses (Le & Surroca, 2020).

Accordingly, the following hypothesis is formulated:

H3: State ownership is negatively associated with firms' ESG performance.

1.2.4 Ownership Concentration and ESG Performance

Ownership concentration represents a fundamental dimension of corporate governance that significantly affects firms' strategic orientation and monitoring mechanisms. A common approach to measuring ownership concentration consists of calculating the combined shareholding held by the three largest shareholders (Morck, Shleifer, & Vishny, 1988; La Porta, Lopez-de-Silanes, & Shleifer, 1999). This indicator captures the effective concentration of corporate control regardless of shareholder identity.

From an agency perspective, concentrated ownership may enhance managerial monitoring and encourage long-term strategic decision-making, including ESG-related investments (Shleifer & Vishny, 1997). However, excessive ownership concentration may also increase conflicts between majority and minority shareholders, reduce transparency, and weaken corporate accountability (Dahya, Dimitrov, & McConnell, 2008).

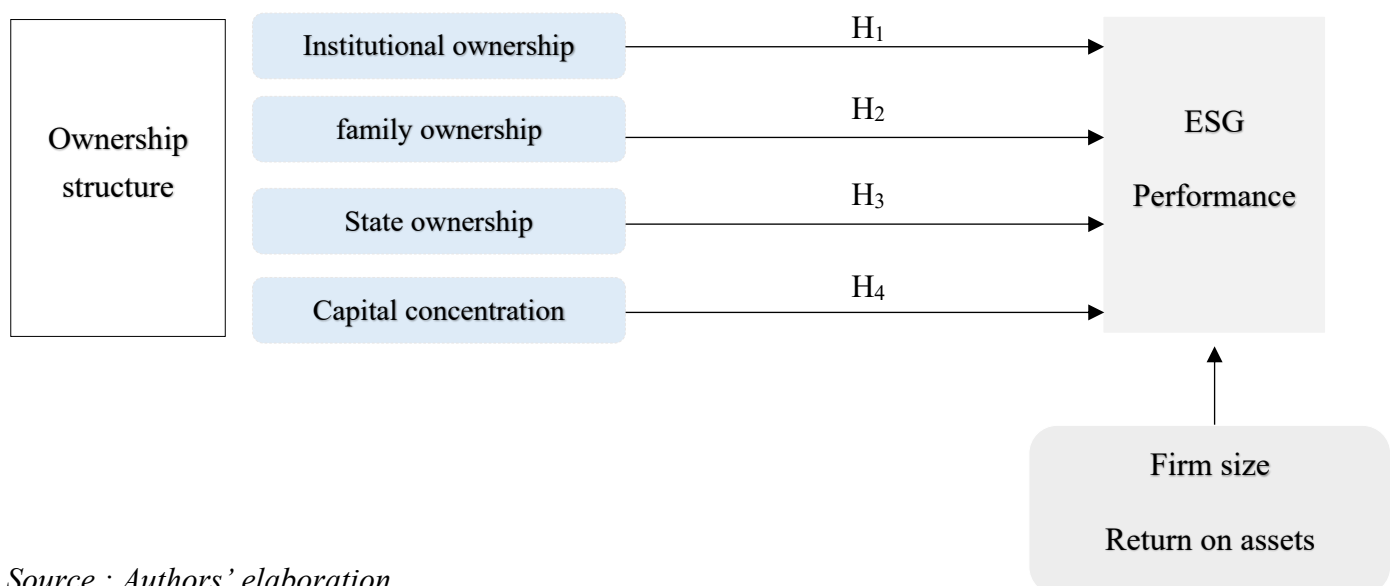
Consequently, the impact of ownership concentration on ESG performance remains theoretically ambiguous and context-dependent.

The following hypothesis is therefore proposed:

H4: Ownership concentration positively influences firms' ESG performance.

The theoretical research model is illustrated in the following conceptual framework.

Figure 1. Theoretical Research Framework



Source : Authors' elaboration.

2. Research Methodology

To strengthen the methodological rigor of this research, it is important to justify the choice of the adopted methodological approach. This study is positioned within a positivist epistemological paradigm, which assumes that social and economic phenomena can be objectively observed, measured, and explained through empirical analysis. In line with this perspective, the research seeks to identify and test causal relationships between ownership structure and ESG performance using quantitative data collected from listed firms.

The study also follows a hypothetico-deductive reasoning approach. Based on Agency Theory and Stakeholder Theory, several research hypotheses are formulated regarding the potential influence of institutional ownership, family ownership, state ownership, and ownership concentration on ESG performance. These hypotheses are then empirically tested through econometric panel data models using observable and measurable variables.

The choice of a quantitative methodology is motivated by the nature of the research objective, which aims to measure the statistical effect of ownership structures on ESG scores and to ensure the comparability and generalizability of findings across firms and over time. Furthermore, the use of panel data regression models makes it possible to control for firm-specific heterogeneity and improve the robustness of empirical results.

2.1 Sample Selection

The sample consists of firms listed on the Bourse de Casablanca for which ownership structure information is available through annual financial reports published by the Moroccan Capital Market Authority.

ESG performance data were collected from the Refinitiv database, which represents the only standardized source providing comparable ESG scores for Moroccan listed firms.

The analysis covers the period from 2019 to 2024, which is consistent with the launch of the CASA ESG 10 sustainability index in September 2018. Firms introduced to the stock market during the study period, as well as companies with missing ESG or ownership data, were excluded from the final sample. Consequently, the final sample includes 40 listed firms, representing a balanced panel of 240 firm-year observations.

Shareholders are classified according to their ownership category. Institutional ownership (INSTOWN) represents the proportion of equity held by institutional investors, including banks, insurance companies, pension funds, and investment funds. Family ownership (FAMOWN) corresponds to the proportion of capital held by founding or related families, while state ownership (STATEOWN) measures the percentage of shares owned directly or indirectly by the State or

public entities. Ownership concentration (CONCENT) is measured as the cumulative percentage held by the three largest shareholders, regardless of their identity. In addition, several control variables are included in the analysis, namely firm profitability (ROA), firm size (SIZE) and leverage (LEV).

2.2 Variable Definitions and Measurement

2.2.1 Dependent Variable: ESG Performance

ESG performance is measured using the overall ESG score (ESGS) provided by the Refinitiv database. This score constitutes a composite indicator assessing firms' environmental, social, and governance performance based on publicly available information. The score ranges from 0 to 100, where a higher score reflects a stronger commitment to ESG practices and greater extra-financial transparency. Refinitiv calculates ESG scores using multiple information sources, including annual reports, sustainability reports, CSR reports, corporate press releases, and institutional websites. Due to its comparability and reliability, this measure is widely employed in ESG literature (Eccles et al., 2014; Thomson Reuters, 2020).

2.2.2 Independent Variables: Ownership Structure

Institutional ownership (INSTOWN) is measured as the percentage of equity held by institutional investors such as banks, insurance companies, pension funds, and investment funds. Prior literature suggests that institutional investors, due to their long-term investment horizon and monitoring capacity, exert significant influence on firms' ESG practices (Bushee, 1998; Dimson et al., 2015). Family ownership (FAMOWN) refers to the proportion of shares held by founding or related families. This variable captures the influence of family shareholders on strategic orientation and governance decisions. Family firms are generally characterized by long-term orientation and reputational concerns, which may positively influence ESG engagement, although this effect may depend on the quality of internal governance mechanisms (Bammens et al., 2011; Miller & Le Breton-Miller, 2006).

State ownership (STATEOWN) is measured by the percentage of equity held directly or indirectly by the State or public institutions. This variable reflects the involvement of public authorities in corporate governance. Existing literature highlights the ambiguous impact of state ownership on ESG performance, depending on institutional quality and governmental objectives (Boubakri et al., 2013; Le & Surroca, 2020).

Ownership concentration (CONCENT) is measured by the combined ownership percentage held by the three largest shareholders, regardless of shareholder category. This measure is commonly

used in corporate governance studies to capture the effective concentration of corporate control (Morck et al., 1988; La Porta et al., 1999).

2.2.3 Control Variables

Firm size (SIZE) is measured using the natural logarithm of total assets. Larger firms are generally more exposed to stakeholder pressure and are therefore more likely to adopt and disclose ESG practices (Cormier & Gordon, 2001; Zeng et al., 2010).

Profitability (ROA) is measured as net income divided by total assets. More profitable firms generally possess greater financial resources to invest in ESG initiatives and are more likely to disclose sustainability-related information to reinforce their legitimacy (Waddock & Graves, 1997; Gerged, 2020).

Leverage (LEV) is defined as total debt divided by total assets. The level of indebtedness may influence ESG disclosure decisions either through creditor pressure or financial constraints limiting sustainable investments (Brammer & Pavelin, 2006; Orlitzky & Benjamin, 2001).

Table 1. Definition and Measurement of Variables

<i>Variable Type</i>	<i>Variable</i>	<i>Symbol</i>	<i>Definition</i>	<i>Measurement</i>
Dependent	ESG Performance	ESGS	Composite indicator measuring environmental, social, and governance performance	Continuous score
Independent	Institutional Ownership	INSTOWN	Percentage of shares held by institutional investors	Percentage (%)
Independent	Family Ownership	ACT_FAM	Percentage of shares held by founding or related families	Percentage (%)
Independent	State Ownership	STATEOWN	Percentage of shares held by the State or public entities	Percentage (%)
Independent	Ownership Concentration	CONCENT	Combined ownership held by the three largest shareholders	Percentage (%)

Control	Firm Size	SIZE	Firm size	Natural logarithm of total assets
Control	Profitability	ROA	Economic performance of the firm	Net income / Total assets
Control	Leverage	LEV	Firm indebtedness level	Total debt / Total assets

Source : Authors' elaboration.

2.3 Econometric Model Specification

The econometric framework adopted in this study is consistent with prior studies such as Dyck et al. (2019), Cucari et al. (2018), and Nekhili et al. (2017), which employ panel data regression models to examine the relationship between ownership structure and ESG performance.

The proposed econometric model aims to empirically assess the impact of different ownership structures on firms' ESG performance:

$$ESGS_i = \beta_0 + \beta_1 CONCENT_{it} + \beta_2 INSTOWN_{it} + \beta_3 FAMOWN_{it} + \beta_4 STATEOWN_{it} + \beta_5 SIZE_{it} + \beta_6 ROA_{it} + \beta_7 LEV_{it}$$

To investigate the impact of ownership structure on ESG performance among Moroccan listed firms, this study estimates multiple linear regression models using panel data covering the period 2019–2024. The dependent variable is the ESG score, while the main explanatory variables correspond to different ownership structures (CONCENT, INSTOWN, FAMOWN, and STATEOWN). Financial control variables (SIZE, ROA, and LEV) are also included to isolate the specific effect of ownership structure on ESG performance.

Three panel regression specifications are estimated using RStudio: pooled Ordinary Least Squares (OLS), Random Effects, and Fixed Effects models. This approach makes it possible to compare estimation results and identify the most appropriate specification while accounting for firm-level heterogeneity across the sample.

3. Results and Discussion

3.1 Descriptive Statistics

Table 2 reports the descriptive statistics for the main variables of the study based on 240 firm-year observations. The ESG score exhibits a mean value of 41.48 and a median of 41.34, indicating a relatively symmetric distribution. However, the high standard deviation (16.42) and the wide range between the minimum value (11.59) and maximum value (79.35) reveal substantial heterogeneity

in ESG practices across the sampled firms, suggesting considerable disparities in sustainability engagement and extra-financial transparency.

Ownership concentration (CONCENT) presents a high average value of 0.71, with a similar median value of 0.72, indicating that most firms in the sample are characterized by highly concentrated ownership structures, a common feature in emerging markets. The relatively moderate standard deviation (0.16) suggests a certain degree of homogeneity regarding ownership concentration among Moroccan listed firms.

Regarding ownership categories, institutional ownership (INSTOWN) displays an average of 0.32 and a lower median value (0.19), reflecting a positively skewed distribution and the presence of several firms with high institutional participation. Family ownership (FAMOWN) exhibits an average value of 0.34 and a median of 0.38, confirming the dominant role played by family shareholders within Moroccan listed companies. By contrast, state ownership (STATEOWN) remains relatively limited, with a mean value of 0.08 and a median equal to zero, indicating that most firms do not include significant public ownership, although some companies display high levels of state participation, with a maximum value reaching 0.88.

Concerning the control variables, firm size (SIZE) presents an average value of 9.40 with moderate dispersion (standard deviation of 0.78), suggesting relative homogeneity in firm size across the sample. Profitability (ROA) shows a positive average of 0.06 but substantial variability, including negative values and a high maximum value of 1.45, reflecting highly heterogeneous financial performance among firms. Finally, leverage (LEV) exhibits particularly high dispersion (standard deviation of 5.08) and extreme values, indicating significant differences in firms' financial structures and debt policies.

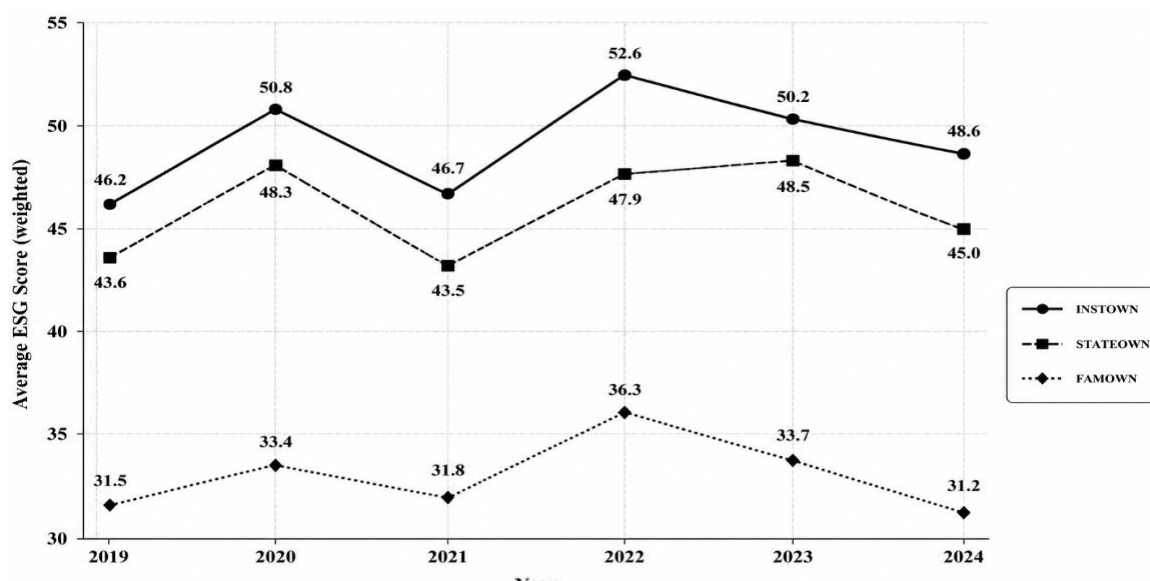
Table 2: Descriptive statistics of variables

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
ESGS	240	41.48	41.34	16.42	11.59	79.35
CONCENT	240	0.71	0.72	0.16	0.22	0.96
INSTWON	240	0.32	0.19	0.30	0.00	0.90
FAMOWN	240	0.34	0.38	0.29	0.00	0.83
STATEOWN	240	0.08	0.00	0.20	0.00	0.88
SIZE	240	9.40	9.42	0.78	6.57	11.79
ROA	240	0.06	0.04	0.14	-0.14	1.45
LEV	240	2.05	0.73	5.08	-2.87	38.93

Source : Authors' elaboration.

Figure 2 shows that firms characterized by institutional ownership consistently exhibit the highest ESG scores throughout the 2019–2024 period, suggesting a positive role played by institutional investors in promoting sustainable practices. State-owned firms display intermediate ESG scores, indicating a relatively favorable but less stable effect on ESG performance. In contrast, family-owned firms report the lowest ESG levels, suggesting a more limited commitment to ESG initiatives. Overall, these findings reveal a clear hierarchy of ESG performance according to ownership structure.

Figure 2. Evolution of ESG Scores by Ownership Structure



Source : Authors' elaboration.

3.2 Correlation Analysis

The correlation matrix presented in Table 3 highlights differentiated relationships between ESG performance and the explanatory variables. ESG performance is positively correlated with institutional ownership ($r = 0.49$), suggesting that a greater presence of institutional investors is associated with stronger ESG practices. Conversely, a significant negative correlation is observed between ESG performance and family ownership ($r = -0.58$), indicating that family dominance may constrain ESG engagement.

The correlation between ESG performance and state ownership remains weak and positive ($r = 0.11$), suggesting a limited influence of public ownership on firms' ESG performance. In addition, firm size is moderately correlated with ESG performance ($r = 0.28$), confirming that larger firms tend to achieve better ESG scores, probably due to greater resource availability and stronger institutional pressures.

The correlations between ESG performance and the financial variables ROA and EDT remain relatively weak, indicating that ESG performance does not appear to be directly associated with profitability or leverage at the descriptive stage of the analysis.

Finally, the correlations among the explanatory variables remain generally below the critical threshold of 0.8, suggesting the absence of serious multicollinearity issues and confirming the suitability of the variables for multivariate econometric analysis.

Table 3: Correlation Matrix

Variable	<i>ESGS</i>	<i>CONCENT</i>	<i>INSTOWN</i>	<i>FAMOWN</i>	<i>STATOWN</i>	<i>SIZE</i>	<i>ROA</i>	<i>LEV</i>
<i>ESGS</i>	1.00	0.00	0.49	-0.58	0.11	0.28	-0.13	0.14
<i>CONCENT</i>	0.00	1.00	0.18	0.18	0.13	0.18	0.03	-0.30
<i>INSTOWN</i>	0.49	0.18	1.00	-0.67	-0.31	0.09	-0.12	0.09
<i>FAMOWN</i>	-0.58	0.18	-0.67	1.00	-0.29	-0.09	0.11	-0.16
<i>STATOWN</i>	0.11	0.13	-0.31	-0.29	1.00	0.09	0.01	-0.13
<i>SIZE</i>	0.28	0.18	0.09	-0.09	0.09	1.00	-0.07	-0.22
<i>ROA</i>	-0.13	0.03	-0.12	0.11	0.01	-0.07	1.00	-0.07
<i>LEV</i>	0.14	-0.30	0.09	-0.16	-0.13	-0.22	-0.07	1.00

Source : Authors' elaboration.

3.3 Regression Results

3.3.1 Pooled OLS Model

The pooled Ordinary Least Squares (OLS) model assumes homogeneous coefficients across firms and time periods, disregarding firm-specific heterogeneity. The estimation results indicate that the model explains approximately 41% of the variation in ESG performance, with an adjusted R² of 0.4092, while the overall specification remains highly significant (F = 24.65; p < 2.2e-16), confirming the joint explanatory power of the selected variables. Among the explanatory variables, family ownership (FAMOWN) exhibits a negative and statistically significant effect on ESG performance (Estimate = -20.42; p = 0.015), suggesting that a higher concentration of family shareholders may constrain ESG engagement. Conversely, firm size (SIZE) and leverage (LEV) display positive and significant effects (SIZE = 5.05; p < 0.001; LEV = 0.42; p = 0.019), indicating that larger and moderately leveraged firms tend to achieve higher ESG scores. In contrast, ownership concentration (CONCENT), institutional ownership (INSTOWN), state ownership (STATEOWN), and profitability (ROA) do not show statistically significant effects within this model specification.

Table 4. Results of the Pooled OLS Mode

Variable	Estimate	Std. Error	t value	p-value
(Intercept)	-5.2920 ^{Ns}	10.9335	-0.484	0.6288
CONCENT	1.7752 ^{Ns}	8.7285	0.203	0.8390
INSTOWN	12.6401 ^{Ns}	8.1324	1.554	0.1215
FAMOWN	-20.4218 [*]	8.3401	-2.449	0.0151
STATEOWN	5.7774 ^{Ns}	8.9804	0.643	0.5206
SIZE	5.0534 ^{***}	1.0958	4.612	6.6e-06
ROA	-4.6592 ^{Ns}	6.0546	-0.770	0.4424
LEV	0.4154 [*]	0.1755	2.367	0.0188

Ns: No significative, * = $p < 0.05$, *** = $p < 0.001$

Source : Authors' elaboration.

Statistics	Value
R^2	0.4265
R^2 adjusted	0.4092
F-statistic	24.65
P-value F-statistic	< 2.2e-16

Source : Authors' elaboration.

3.3.2 Random Effects Model

The Random Effects model assumes that unobserved individual heterogeneity is random and uncorrelated with the explanatory variables. Unlike the pooled OLS specification, this model preserves the panel structure of the data and provides more efficient estimators when this assumption is satisfied.

Regarding the estimated coefficients, institutional ownership (INSTOWN) appears as the most significant explanatory variable and is positively associated with ESG performance (Estimate = 14.43; $p = 0.016$). This result suggests that firms monitored by institutional investors tend to adopt more responsible practices and achieve higher ESG performance. Firm size (SIZE) also exhibits a positive effect (Estimate = 2.17), although its significance remains marginal ($p = 0.092$), indicating that larger firms may slightly benefit from better ESG performance without representing a highly robust determinant within this specification.

The remaining variables included in the model, namely ownership concentration (CONCENT), family ownership (FAMOWN), state ownership (STATEOWN), profitability (ROA), and leverage (LEV), do not display statistically significant effects on ESG performance. This finding implies

that, within this panel setting, these variables do not reliably explain differences in ESG scores across firms.

Overall, the model exhibits a relatively low explanatory power, with an R^2 of 0.056, indicating that the selected variables explain only 5.6% of the total variation in ESG scores. The overall model test remains marginally significant (Chi-square = 13.82; $p = 0.054$), suggesting that the model captures a weak but existing global effect. Altogether, these findings highlight that ESG performance variation is primarily driven by firm-specific characteristics, while institutional ownership emerges as the most relevant explanatory factor identified in this specification.

Table 5: Results of RE Model

Variable	Estimate	Std. Error	z-value	p-value
(Intercept)	20.917 ^{Ns}	12.927	1.618	0.106
CONCENT	-7.914 ^{Ns}	7.610	-1.040	0.298
INSTOWN	14.425 ^{**}	5.972	2.415	0.016
FAMOWN	1.395 ^{Ns}	5.098	0.274	0.784
STATEOWN	6.541 ^{Ns}	7.324	0.893	0.372
SIZE	2.169 [*]	1.286	1.686	0.092
ROA	0.426 ^{Ns}	1.647	0.259	0.796
LEV	0.091 ^{Ns}	0.071	1.288	0.198

NS = non significant, ** = $p < 0.05$, * = $p < 0.1$

Source : Authors' elaboration.

Statics	Value
R^2	0.0562
R^2 adjusted	0.0277
Chisq	13.82
P-value Chisq	0.0545

Source : Authors' elaboration.

3.3.3 Fixed Effects Model

To further investigate the impact of ownership structure on ESG performance, a Fixed Effects panel model is estimated in order to control for:

- unobserved firm-specific heterogeneity,
- and macroeconomic shocks common to each period.

The Fixed Effects estimation indicates that none of the explanatory variables are statistically significant at the conventional 5% significance level ($p > 0.05$). Consequently, ownership

concentration (CONCENT), institutional ownership (INSTOWN), family ownership (FAMOWN), state ownership (STATEOWN), firm size (SIZE), profitability (ROA), and leverage (LEV) do not appear to reliably explain within-firm variations in ESG performance over time.

The model also exhibits a very low explanatory power, with an R^2 of 0.016 and a negative adjusted R^2 (-0.218), indicating that the Fixed Effects specification explains only a very limited proportion of the temporal variation in ESG scores. Furthermore, the F-statistic (0.461; $p = 0.862$) confirms that the explanatory variables do not jointly contribute significantly to explaining ESG performance.

The residuals remain relatively centered around zero (median = -0.327), suggesting the absence of major systematic estimation errors. However, the lack of coefficient significance indicates that ESG score variations are mainly driven by unobserved or time-invariant firm characteristics rather than by the explanatory variables included in the model.

Table 6: Results of FE Model

Variable	Estimate	Std. Error	T-value	P-value
CONCENT	-7.965 ^{Ns}	8.095	-0.984	0.326
ACT_INST	7.726 ^{Ns}	6.512	1.186	0.237
ACT_FAM	3.970 ^{Ns}	5.163	0.769	0.443
ACT_ETA	4.670 ^{Ns}	7.974	0.586	0.559
TAIL	1.183 ^{Ns}	1.423	0.831	0.407
ROA	0.667 ^{Ns}	1.627	0.410	0.682
EDT	0.056 ^{Ns}	0.072	0.779	0.437

Ns : non significatif aux seuils usuels (1 %, 5 %, 10 %)

Source : Authors' elaboration.

Statistics	Value
R-squared	0.0164
Adjusted R-squared	-0.218
F-statistic	0.461
p-value F-statistic	0.862
Mean	-0,327

Source : Authors' elaboration.

➤ Hausman Test

The Hausman test results ($\chi^2 = 18.688$; $p = 0.0092$) indicate that the Random Effects model is inconsistent, since the difference between the coefficients estimated under the Fixed and Random Effects specifications is statistically significant. This finding implies that firm-specific effects are correlated with the explanatory variables, making the Fixed Effects model more appropriate for analyzing ESG performance. Consequently, the determinants of ESG scores should be interpreted based on the Fixed Effects specification, which more reliably captures the impact of firms' internal characteristics on ESG performance.

3.4 Discussion

The empirical findings obtained from the three econometric models reveal contrasting effects regarding institutional ownership. In the pooled OLS model, INSTOWN is not statistically significant ($p = 0.122$), suggesting that its direct contribution to ESG performance is not robust when firm-specific heterogeneity is ignored. However, in the Random Effects model, institutional ownership becomes positive and statistically significant (Estimate = 14.43; $p = 0.016$), indicating that firms monitored by institutional investors tend to adopt more responsible and sustainable practices. This positive relationship is consistent with the governance literature emphasizing the role of institutional investors as monitoring mechanisms that encourage corporate social and environmental responsibility. Nevertheless, the Fixed Effects model reveals that institutional ownership loses its significance ($p = 0.237$), suggesting that once firm-specific characteristics are controlled for, the influence of institutional investors becomes less determinant. Overall, Hypothesis 1 receives partial support, highlighting that the effect of institutional ownership strongly depends on the estimation methodology and the consideration of individual heterogeneity. Family ownership (FAMOWN) exhibits a negative and statistically significant effect in the pooled OLS model (Estimate = -20.42 ; $p = 0.015$), supporting Hypothesis 2, which suggests that strong family control may limit ESG engagement, possibly due to a stronger focus on ownership preservation and control rather than sustainability objectives. This finding indicates that when firm-specific effects are not controlled for, family ownership may constitute an obstacle to ESG performance. However, this variable becomes insignificant in both the Random and Fixed Effects models, suggesting that the perceived negative effect may actually reflect firm-specific or time-invariant characteristics. Consequently, Hypothesis 2 is only partially supported, as the negative effect remains sensitive to the estimation method employed.

The results also show that state ownership (STATEOWN) does not exert any statistically significant effect on ESG performance across all estimated models ($p > 0.05$). This finding

suggests that, within the studied context, state ownership neither acts as a direct driver nor as a constraint on ESG performance. The absence of a significant relationship may be explained by heterogeneous governance practices among state-owned firms or by institutional differences not captured by the econometric model. Therefore, Hypothesis 3 is not supported by the empirical findings, indicating that the mere presence of the State in corporate ownership does not constitute a decisive determinant of ESG performance.

Regarding ownership concentration (CONCENT), the estimated coefficients remain statistically insignificant across all three models ($p > 0.05$) and even display negative signs within the Random and Fixed Effects specifications. These findings suggest that higher ownership concentration does not systematically lead to better ESG performance and may, in some cases, be associated with less responsible practices if dominant shareholders prioritize control or short-term profitability over sustainability considerations. Consequently, Hypothesis 4 is not supported, implying that ownership concentration does not appear to represent a key determinant of ESG performance within the sampled listed firms.

Conclusion

The comparative analysis of the three econometric specifications highlights the crucial role of firm-specific heterogeneity in explaining ESG performance. The pooled OLS model may generate biased results by ignoring individual effects, whereas the Hausman test confirms that the Fixed Effects model represents the most appropriate specification for the panel data used in this study. Within this framework, none of the ownership structure variables examined — institutional ownership, family ownership, state ownership, or ownership concentration — remain statistically significant, suggesting that ESG performance is primarily driven by firm-specific characteristics and potentially influenced by unobserved or time-invariant factors. Nevertheless, some tendencies identified in the pooled OLS and Random Effects models, particularly the negative effect of family ownership and the positive influence of institutional investors, provide valuable insights for corporate governance policies and ESG-oriented strategic decisions.

References

- (1) Bammens, Y., Voordeckers, W., & Van Gils, A. (2011). Boards of directors in family businesses: A literature review and research agenda. *International Journal of Management Reviews*, 13(2), 134–152.
- (2) Boubakri, N., Cosset, J.-C., & Saffar, W. (2013). The role of state and foreign owners in corporate risk-taking: Evidence from privatization. *Journal of Financial Economics*, 108(3), 641–658.
- (3) Brammer, S., & Pavelin, S. (2006). Voluntary environmental disclosures by large UK companies. *Journal of Business Finance & Accounting*, 33(7–8), 1168–1188.
- (4) Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behavior. *The Accounting Review*, 73(3), 305–333.
- (5) Chrisman, J. J., Chua, J. H., Pearson, A. W., & Barnett, T. (2012). Family involvement, family influence, and family-centered non-economic goals in small firms. *Entrepreneurship Theory and Practice*, 36(2), 267–293.
- (6) Cormier, D., & Gordon, I. M. (2001). An examination of social and environmental reporting strategies. *Accounting, Auditing & Accountability Journal*, 14(5), 587–617.
- (7) Cucari, N., Esposito De Falco, S., & Orlando, B. (2018). Diversity of board of directors and environmental social governance: Evidence from Italian listed companies. *Corporate Social Responsibility and Environmental Management*, 25(3), 250–266.
- (8) Dahya, J., Dimitrov, O., & McConnell, J. J. (2008). Dominant shareholders, corporate boards, and corporate value: A cross-country analysis. *Journal of Financial Economics*, 87(1), 73–100.
- (9) Dimson, E., Karakaş, O., & Li, X. (2015). Active ownership. *Review of Financial Studies*, 28(12), 3225–3268.
- (10) Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*, 131(3), 693–714.
- (11) Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60(11), 2835–2857.
- (12) Fauver, L., & Fuerst, M. E. (2010). Does good corporate governance include employee representation? Evidence from German corporate boards. *Journal of Financial Economics*, 82(3), 673–710.

- (13) Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- (14) Gerged, A. M. (2020). Factors affecting corporate environmental disclosure in emerging markets: The role of corporate governance structures. *Business Strategy and the Environment*, 29(4), 1379–1396.
- (15) Goranova, M., & Ryan, L. V. (2014). Shareholder activism: A multidisciplinary review. *Journal of Management*, 40(5), 1230–1268.
- (16) Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- (17) Krüger, P. (2015). Corporate goodness and shareholder wealth. *Journal of Financial Economics*, 115(2), 304–329.
- (18) La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, 54(2), 471–517.
- (19) Le, T. T., & Surroca, J. (2020). Corporate sustainability and state ownership: International evidence. *Corporate Governance: An International Review*, 28(1), 1–20.
- (20) Liang, H., & Renneboog, L. (2017). On the foundations of corporate social responsibility. *The Journal of Finance*, 72(2), 853–910.
- (21) Megginson, W. L., & Netter, J. M. (2001). From state to market: A survey of empirical studies on privatization. *Journal of Economic Literature*, 39(2), 321–389.
- (22) Miller, D., & Le Breton-Miller, I. (2006). Family governance and firm performance: Agency, stewardship, and capabilities. *Family Business Review*, 19(1), 73–87.
- (23) Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315.
- (24) Nekhili, M., Nagati, H., Chtioui, T., & Rebolledo, C. (2017). Corporate social responsibility disclosure and market value: Family versus nonfamily firms. *Journal of Business Research*, 77, 41–52.
- (25) Orlitzky, M., & Benjamin, J. D. (2001). Corporate social performance and firm risk: A meta-analytic review. *Business & Society*, 40(4), 369–396.
- (26) Shleifer, A., & Vishny, R. W. (1994). Politicians and firms. *Quarterly Journal of Economics*, 109(4), 995–1025.
- (27) Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, 52(2), 737–783.

- (28) Thomson Reuters. (2020). *Environmental, social and governance (ESG) scores from Refinitiv*. Thomson Reuters.
- (29) Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18(4), 303–319.
- (30) Zeng, S. X., Xu, X. D., Yin, H. T., & Tam, C. M. (2010). Factors that drive Chinese listed companies in voluntary disclosure of environmental information. *Journal of Business Ethics*, 93(3), 349–367.