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ESG rating, corporate dividends policy, and the moderating role of corporate life cycle: Cross country study

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Abstract

This article investigates the link between environmental, social, and governance performance (ESG) and dividend policy, as well as how likely the corporate life cycle might moderate this association. Using cross-country data from 2010 to 2020, the findings of this study reveal that ESG has a favorable influence on corporate dividend payments as measured by dividend payout ratio, dividend yield, and dichotomous variable. This conclusion holds true when the three ESG pillars are examined independently on dividend policy measurements. Furthermore, this analysis reveals that the firm's life cycle stage moderates the association between ESG and corporate dividend policy, exhibiting a negative moderating impact. This study specifically reveals that the relationship between ESG and dividends is stronger for firms in the early stages of their life cycle than for those in the mature stages. This relationship applies to firms operating in developed economies compared to developing economies. The study findings particularly highlight the dynamic nature of the link between ESG and dividends, underlining that this relationship is dependent on the stage of a company's life cycle. Understanding this relationship may assist stakeholders, such as investors and management, in making educated decisions about dividend expectations and sustainable practices depending on the life cycle of a firm.

KEYWORDS

corporate life cycle, dividends payout ratio, dividends yield, ESG rating

JEL CLASSIFICATION
Q01, Q56, F65, G30

1 | INTRODUCTION

Recently, the international market has driven a stronger emphasis on transparency and ensuring effective sustainability practices of corporations worldwide, making them more aware of the need to improve their environmental, social, and governance (ESG) performance (Ananzeh, 2024a). This has resulted in the number of corporations making sustainable investments increasing, which is why this type of investment has gained traction among both stakeholders and stockholders worldwide (Ananzeh, 2024b, Ellili, 2022a). Recent figures show that approximately 26% of all assets professionally managed across Europe, the USA, Canada, Australia, New Zealand, and Asia are sustainable investments. Similarly, in 2019, the HSBC/UK reported that over USD 21.4 trillion had been allocated to sustainability investments worldwide, a sign that ESG is a critical component of capital market decisions.

Furthermore, particular considerations of whether firms behave in a sustainable manner are incorporated into the investment decisions of some of the world's largest institutional investors (Al Amosh, 2024a; Ellili, 2022a). Consequently, ESG performance has undoubtedly become a prominent element to look at by both institutional and individual socially aware investors as it can likely provide a more accurate and comprehensive way to depict business-responsible performance. The increasing focus on ESG performance has prompted researchers to explore its economic impacts, such as cost of capital (Ng & Rezaee, 2015), firm performance (Huang, 2021), risk management (Korinth & Lueg, 2022), and firm value (Wong et al., 2021). Enhanced ESG practices generally improve a company's reputation and transparency, influencing factors like borrowing costs, investor base, and sales volume, all of which directly affect corporate liquidity. Given the financial significance of dividend policies, several studies have examined how ESG performance impacts dividend payouts (Ananzeh et al., 2024). This interest has intensified post-COVID-19, as firms have needed to manage dividends prudently to remain profitable amid financial instability.

The corporate life cycle can plays a crucial role in the relationship between ESG performance and dividend policy, with payout behaviors varying across different life stages (Oliver Ikechukwu, 2017). Mature firms, with stable financial conditions and strong customer bases, are more likely to pay higher dividends, often using their ESG performance to enhance their reputation and foster investor confidence (Atif et al., 2022). Companies recognized for their responsible ESG practices may experience lower agency costs, which can lead to reduced dividend payouts as they retain earnings for reinvestment rather than distribution (Puspitaningtyas, 2019). In contrast, growth-oriented firms in the early stages of their life cycle are more likely to reinvest profits into ESG initiatives and business development rather than paying dividends (Cheung et al., 2018). These companies prioritize building a strong brand and customer loyalty, appealing to consumers and investors focused on sustainability. By aligning with ESG practices, they enhance their long-term financial performance and attract future investors. Thus, strategic ESG improvements not only foster brand value and sustainability but also position these firms for long-term success and financial stability (Bae et al., 2021).

The purpose of this study is to examine the link between ESG (environmental, social, and governance) responsibility performance, both generally and individually, based on each of the three pillars, and the dividend policy by considering the potential role of the corporate life cycle stage. Despite the growing body of literature on sustainability and ESG, there is limited data on the implications of such ESG performance scores on a firm's capacity and dividend decisions. This study is the first to analyze the relationship between ESG performance and dividend policies by taking into consideration the function of corporate life cycle stages, and it adds to a better understanding of the possible effect of ESG on dividend policy. Our research adds to the

body of work on the link between sustainability and finance policies and performance. More precisely, the emphasis on the three pillars demonstrates that relationships differ. The report also has management implications for asset managers and regulators.

This study offers a unique contribution to the existing literature by investigating the moderating role of the corporate life cycle in the relationship between ESG performance and dividend policy. While prior studies, such as Bilyay-Erdogan et al. (2023), Zahid et al. (2023), and Verga Matos et al. (2020), have explored the direct association between ESG and dividends, this study introduces the firm's life cycle as a key factor that influences this relationship. The findings reveal that the impact of ESG performance on dividends is dynamic, with a stronger effect in the early stages of a firm's life cycle and a weaker effect as the firm matures. This life cycle perspective offers a new dimension to understanding how ESG initiatives interact with corporate financial strategies over time, highlighting that the relationship between ESG and dividends is contingent upon the firm's developmental stage. Moreover, this study focuses on cross-country analysis, which compares firms in both developed and developing economies. This broader geographical scope allows for a more comprehensive understanding of how market contexts influence the ESG-dividend relationship. In developed economies, firms with strong ESG performance tend to use it as a substitute for dividends as they mature, signaling financial stability and sustainability to investors. In contrast, firms in developing economies rely more heavily on dividends as a signal of financial health, even as their ESG performance improves. This comparative approach extends the existing literature by demonstrating that the relationship between ESG and dividends is not uniform across different economic environments.

Furthermore, this study makes a significant contribution by breaking down ESG into its three pillars—Environmental, Social, and Governance—and examining the individual effects of each pillar on dividend policy. Previous studies have largely focused on the overall ESG score, but this research provides a more granular analysis, allowing for a deeper understanding of how each aspect of ESG influences corporate financial decisions. The findings indicate that the environmental and governance components, in particular, have a pronounced effect on dividend policies, while the social dimension also plays an important role. This disaggregated approach adds a new level of insight into the specific ways that sustainability initiatives affect financial outcomes. Methodologically, this study advances the literature by employing rigorous econometric techniques to establish a more robust understanding of the relationship between ESG and dividend policy. By using Instrumental Variable (IV) methods and two-stage least squares (2SLS) regression, the study addresses potential endogeneity concerns, ensuring that the observed relationships are not merely correlational but also reflect underlying causal mechanisms. This methodological rigor sets this study apart from prior research, providing stronger empirical evidence of how ESG performance influences dividend policy, particularly when moderated by the firm's life cycle.

The life cycle is also found to have a negative moderation effect on the relationship between dividends policy and ESG. In other words, the positive association between ESG and dividends payout is less prominent for businesses in the mature life cycle stage compared to those in the early life cycle stage. This relationship pertains to companies functioning within developed economies as opposed to those in developing economies. According to the agency theory, ESG and corporate dividends can be considered efficient mechanisms to reduce agency problems (Lloyd et al., 1985; Ellili, 2022a). In addition, a better ESG rating indicates the management's orientation towards aligning their interests with those of shareholders (Healy & Palepu, 2001). Here, ESG could function as an equivalent substitute for corporate dividends to reduce agency costs, even though corporate dividends play a significant role in reducing agency costs (Lloyd et al., 1985). Because such firms enjoy a solid market reputation, they are likely to have a good ESG initiative in place, and cash holdings are unlikely to be affected by ESG initiatives (Al Amosh, 2024a; Atif et al., 2022). Thus, managers of mature corporations may target a better ESG practice in place of dividend payouts.

On the other hand, there is likely a greater focus on sustainability, including ESG efforts, in the early stages of a company's life cycle. In addition, these companies are keen to create a reputable brand, follow ethical standards, and be seen as ethical in the eyes of society. Therefore, especially those new growth that adheres to the best practices of (ESG) are more likely to have better internal governance, which lowers the possibility of managers acting opportunistically by holding surplus cash and having the backing and loyalty of outside investors and stakeholders, which enables them to access the capital market (Atif et al., 2022). Due to these companies' intentional engagement in ESG practices, they are more likely inclined to better dividend policy due to the benefits gained from being socially responsible and to target more future investors.

This paper is structured as follows. Section 2 contains a review of the literature and hypotheses development, while Section 3 discusses the study methodologies and data. Section 4 analyzes and discusses the findings as well as the paper's contributions.

2 | LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Both institutional and individual investors, in particular, have begun to recognize that ESG is a valuable source of opportunities as well as a potential risk for today's corporations (Limkriangkrai et al., 2017). Thus, ESG performance is becoming greatly popular as a criterion that worldwide investors use to decide whether to invest in a company (Ellili, 2022a, Verga et al., 2020). This has also led to increasing numbers of stakeholders calling for ESG to be incorporated into corporations' code of conduct. To facilitate this integration, firms should strive to integrate environmental, social, and governance considerations into their decision-making processes rather than solely focusing on shareholder wealth. According to Limkriangkrai et al. (2017), managing environmental activities (E) involves a firm's efforts to avoid negative environmental impacts by complying with existing regulations and acknowledging future environmental impacts. In terms of social (S) activities, firms ensure fair treatment of stakeholder groups and protect the social ecosystem in which they operate (Al Amosh, 2024b). The concept of governance (G) incorporates the values of ethics and integrity, which include principles such as transparency and fair dealing, as well as the effective functioning of the board.

It has been evident that the ESG integration into firms' code of conduct is likely to allow for value creation for shareholders by not only boosting firms' economic performance (Ellili & Nobanee, 2022, Huang, 2021, La Torre et al., 2021), firm market value (Aureli et al., 2020, Wong et al., 2021), the efficiency of firms investment (Ellili, 2022b) but also it is likely to forecast the effectiveness of the volatility of financial asset (Capelli et al., 2021), reduce the cost of equity capital (Ng & Rezaee, 2015, Raimo et al., 2021), as well as the potentiality of promoting firm nonfinancial indicators, such as reputation and transparency (Murè et al., 2021). It seems likely that this different outcome will significantly affect firms' financial decisions since they are the direct sources of liquidity. Thus, an alternative way to examine how likely the ESG affects the distribution of the value created is by considering the dividend policy (Verga Matos et al., 2020). It is, however, surprising that the impact of sustainability on dividend policies has not yet been adequately discussed in the literature, particularly regarding its importance in determining dividend payment decisions and dividend amount determination. Also, evidence of whether the corporate life cycle can moderate this relationship is unknown. Thus, we propose to fill this gap through our contribution.

2.1 | ESG and corporate dividends

Corporate dividends and ESG are explained by two competing theories. A first view suggests that dividends and ESG are negatively related. Following the agency theory, both ESG and corporate dividends can be considered efficient mechanisms that companies can adopt to reduce agency problems (Lloyd et al., 1985, Ellili, 2022a). According to Pérez (2015), social and environmental disclosure is likely to provide an avenue through which to control managerial behavior while signaling to the market that managers are following best practices. While ESG is likely to reflect better disclosure behavior, better ESG rating can, therefore, be deemed to be a good indicator of the management's orientation towards aligning their interests with those of shareholders (Healy & Palepu, 2001). As a result, ESG can function as an equivalent substitute for corporate dividends to reduce agency costs, even though corporate dividends play a significant role in reducing agency costs (Lloyd et al., 1985). On the other hand, signaling theory states that insufficient information disclosure causes investors to be concerned about information asymmetry (Ellili, 2022a). In this sense, investors who lack sufficient information are more likely to demand high dividends from companies with transparency risks as a substitute for the low-level information provided by firms (Dhaliwal et al., 2011). Therefore, to alleviate existing information asymmetry problems and mitigate the agency problem, corporations can target a better ESG rating in place of dividend payouts. Accordingly, dividend policies are not necessary for firms with better ESG ratings to mitigate agency issues, suggesting a negative relationship between the two. ESG, commonly known by its trending acronym, refers to three crucial nonfinancial aspects that determine a corporation's sustainability, namely environment, social, and governance.

The second view suggests that dividends and ESG are positively related. Based on the agency theory, reduced information asymmetry allows a company to pay higher dividends due to reducing shareholders' transaction costs, which is likely to result from more transparent communication (Cuadrado-Ballesteros et al., 2016). Furthermore, ESG may affect dividend payments by decreasing the cost of debt, which in turn causes the company to pay higher dividends owing to its reduced cost of borrowing (Cheung et al., 2018; Ellili, 2022a). Moreover, managers may be more likely inclined to overinvest behavior if they are given excess cash flow access and worthwhile investment opportunities that demonstrate a positive net present value (Liu & Zigan, 2024). As a lining outcome, managers gain control over more assets and leverage their compensation, and they may be inclined to invest excessively in environmental and social initiatives to gain personal benefits at the expense of shareholders (Barnea & Rubin, 2010; Verga Matos et al., 2020). Hence, corporate dividends could be used to prevent overinvestment in ESG initiatives and remove agency problems. Consequently, firms with high ESG scores will likely pay higher dividends.

On the other hand, the signaling theory provides another perspective (Benartzi et al., 1997; Miller & Rock, 1985). While better ESG signals a company's strong commitment to society and the environment (Ellili, 2022a), companies may be better likely to reap the benefits of improved image and reputation in the capital markets, resulting in more profitable operations and higher dividend payouts (Bae et al., 2021). Moreover, dividends tend to deliver a positive signal to investors about the prospects of a company by indicating that managers are expecting future earnings growth. In addition, this signal may affect the firm's ability to allocate additional resources to ESG initiatives without compromising the firm's cash flow/returns (Verga Matos et al., 2020).

Although rare, research on ESG and dividends indicates a positive relationship between CSR performance and dividends. Verga Matos et al. (2020), for example, found that enterprises with stronger ESG are more likely to have a better dividend policy, using data from the Stoxx Euro 600 from 2000 to 2019. Ellili (2022a) adopted a sample of publicly traded firms in the UAE financial markets between 2010 and 2020 and found a positive correlation between ESG and dividend policy. This leads to the following hypothesis:

H1: There is a positive relationship between ESG and corporate dividends policy.

2.2 | Life cycle stage ESG and corporate dividends

The life cycle of a corporation significantly impacts its dividend policy, with firms at different stages exhibiting varying payout behaviors. According to Oliver Ikechukwu, (2017), mature companies are more inclined to offer substantial dividends to maximize shareholder value and communicate financial stability. In contrast, Puspitaningtyas (2019) and Bukalska, (2019) emphasize that early-stage firms typically reinvest earnings to fuel growth, resulting in smaller or no dividend payouts. This divergence in dividend behavior may, therefore, shape the pattern in which ESG and dividends interact throughout the life cycle. Thus, it is to be expected that the relation between ESG and dividends is highly contingent upon the life cycle stage of a firm. This relationship can be explained from an agency theory lens, which explains how governance mechanisms such as dividends and ESG are employed to align the interests of the managers with shareholders and reduce agency conflicts (Cheung et al., 2018; Ellili, 2022a). In particular, the intensity and role of both ESG considerations and dividends not only as instruments of agency cost reductions but also change across the transition of firms from early-stage growth to maturity (Huang, 2021, La Torre et al., 2021).

In the initial phases of their life cycle, companies prioritize reinvestment aimed at expansion, increasing market share, and improving profitability. Bukalska, (2019) notes that emerging enterprises frequently allocate a significant portion of their earnings towards activities such as research and development (R&D), marketing, and product innovation. These investments, focused on growth, limit the capacity of these firms to distribute substantial dividends. Instead, they emphasize capital retention to secure long-term growth, which may inadvertently elevate agency costs (Ellili & Nobanee, 2022, Verga Matos et al., 2020). Consequently, dividends during this stage of a firm's development are typically minimal or entirely absent (Puspitaningtyas, 2019). Furthermore, agency theory posits that managers, due to information asymmetry and their control over firm resources, may pursue initiatives that do not align with shareholder interests (Lloyd et al., 1985). To address these agency-related issues, firms often implement both ESG practices and dividends to better align their goals with those of their shareholders (Ellili & Nobanee, 2022; Nguyen et al., 2020). In the context of early-stage companies, where dividend payouts are often limited, ESG initiatives also serve as a crucial governance mechanism to foster trust and demonstrate ethical business conduct (Bae et al., 2021; Puspitaningtyas, 2019). Additionally, these firms frequently leverage ESG performance as a signaling tool to enhance their credibility and distinguish themselves from competitors (Bae et al., 2021; Wong et al., 2021). Robust ESG practices are essential for attracting external investors, establishing a strong brand, and increasing market share, particularly as these companies strive to validate their long-term sustainability (Bae et al., 2021). Therefore, while dividends may be reduced or absent during these formative stages due to the necessity for reinvestment, ESG functions as a complementary mechanism for signaling corporate responsibility and ethical standards, in accordance with agency theory (Lloyd et al., 1985).

Conversely, mature firms have established stable revenue streams, a solid client base, and a strong track record of financial performance (Huijuan, 2016; Nguyen et al., 2020). These companies often prioritize dividends as a key mechanism for rewarding investor loyalty and attracting new shareholders (Mangantar et al., 2019). Mature firms have less need to reinvest their earnings at the same aggressive rate as younger companies, allowing them to allocate a larger portion of their earnings to dividend payouts (Huijuan, 2016; Oliver Ikechukwu, 2017). As a result, dividends become a more important signaling tool, indicating the firm's financial health and long-term profitability (Bae et al., 2021; Puspitaningtyas, 2019). In these stages, the emphasis on dividend distributions may reduce the need for high ESG investments as a tool for managing agency costs, weakening the relationship between ESG and dividends (Nguyen et al., 2020).

On the other hand, as companies move into the mature stages of their life cycle, their priorities and mechanisms for addressing agency issues shift. Mature firms typically enjoy stable revenue streams, established market positions, and strong financial track records (Bae et al., 2021; Huijuan, 2016; Nguyen et al., 2020). At this stage, the need for reinvestment diminishes compared to early-stage companies, allowing mature firms to allocate a greater portion of their earnings to dividend payouts. According to Oliver Ikechukwu, (2017), mature companies are more likely to offer substantial dividends as a way to maximize shareholder value and communicate financial stability. Dividends become a key tool in reducing agency costs by limiting the amount of free cash flow available to managers, thus preventing the misuse of funds on projects that do not benefit shareholders (Nguyen et al., 2020; Verga Matos et al., 2020).

At this stage, the relationship between ESG and dividends weakens. Established companies have already cultivated their reputation and credibility through a history of successful performance (Cheung et al., 2018; Mangantar et al., 2019). Consequently, the necessity to utilize dividends as a signaling tool is reduced. Although ESG practices continue to play a crucial role in ensuring long-term sustainability and social responsibility, they have increasingly emerged as the principal governance mechanism for aligning the interests of management and shareholders (Bukalska, 2019; Puspitaningtyas, 2019). According to Mangantar et al. (2019), mature firms leverage ESG to synchronize management and shareholder objectives while also appealing to potential investors, thereby emphasizing the significance of ESG over dividends during this stage. Thus, in mature firms, ESG can act as a substitute for dividends when it comes to mitigating agency conflicts. The need to use ESG as a signaling tool or governance mechanism is less prominent as dividends serve this role more effectively (Al Amosh, 2024a; Oliver Ikechukwu, 2017). While mature firms with strong ESG practices may still enjoy reduced agency costs and better alignment between management and shareholders, the role of ESG in supporting dividend payouts is diminished compared to early-stage firms (Mangantar et al., 2019).

H2: The corporate life cycle moderates the relationship between ESG and corporate dividends.

3 | METHOD

3.1 | Study sample and data

As part of this study, a cross-country sample and Thomson Reuters Eikon database were used to collect data covering the period between 2010 and 2020 for the study. A list of countries included in the final sample of the study is presented in Table 1. A former step has been taken to narrow the initial sample due to the lack of dividends data and insufficient data to calculate all the control variables in some countries. Table 1 presents the study sample distribution depending on the countries included in our research. This study included a total of 53 in the sample since companies in those countries were found to report ESG data. The distribution of the sample revealed that companies from the United States and the United Kingdom accounted for the largest share. On the other hand, it was noticed that companies located in emerging countries constituted the smallest portion of the sample distribution.

3.2 | Research models

As in Model 1, the multiple regression model was employed to investigate the association between ESG and dividend policy. This study incorporates an interaction term between ESG and life cycle in Model 2 of the study to evaluate how life cycle could influence the association

TABLE 1 Tabulation of the study sample.

Country/Region of headquarters	Freq.	Percent	Cum.
Argentina	2	0.01	0.01
Australia	1190	7.23	7.24
Austria	84	0.51	7.75
Belgium	122	0.74	8.49
Bermuda	36	0.22	8.71
Brazil	265	1.61	10.32
Cambodia	1	0.01	10.33
Canada	396	2.41	12.73
Chile	85	0.52	13.25
The Chinese mainland	1238	7.52	20.77
Colombia	32	0.19	20.96
Denmark	162	0.98	21.94
Egypt	19	0.12	22.06
Finland	158	0.96	23.02
France	472	2.87	25.89
Germany	496	3.01	28.90
Greece	57	0.35	29.25
Hong Kong, China	438	2.66	31.91
Hungary	17	0.10	32.01
India	411	2.50	34.51
Indonesia	166	1.01	35.51
Ireland; Republic of	157	0.95	36.47
Israel	31	0.19	36.66
Italy	121	0.73	37.39
Japan	1591	9.66	47.05
Kazakhstan	1	0.01	47.06
Korea; Republic (S. Korea)	561	3.41	50.47
Kuwait	1	0.01	50.47
Luxembourg	37	0.22	50.70
Malaysia	217	1.32	52.02
Malta	9	0.05	52.07
Mexico	194	1.18	53.25
Netherlands	198	1.20	54.45
New Zealand	119	0.72	55.17

TABLE 1 (Continued)

Country/Region of headquarters	Freq.	Percent	Cum.
Norway	107	0.65	55.82
Peru	17	0.10	55.93
Philippines	96	0.58	56.51
Poland	63	0.38	56.89
Portugal	37	0.22	57.12
Qatar	17	0.10	57.22
Russia	168	1.02	58.24
Saudi Arabia	35	0.21	58.45
Singapore	181	1.10	59.55
South Africa	428	2.60	62.15
Spain	134	0.81	62.97
Sweden	377	2.29	65.26
Switzerland	389	2.36	67.62
Taiwan, China	316	1.92	69.54
Thailand	74	0.45	69.99
Turkey	145	0.88	70.87
United Arab Emirates	17	0.10	70.97
United Kingdom	1440	8.75	79.72
United States of America	3339	20.28	100.00
Total	16464	100.00	

Note: In our sample, apart from Hong Kong and Taiwan, which are regions/parts of China, all others are countries.

between ESG and dividend policy. This study uses Pooled ordinary least squares (OLS) and the logit regression approach clustered at the country level to evaluate the research hypotheses. We are clustering at the country level aids in avoiding the problem of heteroscedasticity. We also incorporate the sector-fixed impact to adjust for sector-specific variances, considering the distinctive characteristics that may alter firm dividends (Ananzeh, 2024a). Furthermore, a specific trend toward dividends may occur around a specific time. As a result, we account for the time impact by introducing a dummy variable for each year.

Before we begin the analysis, we validate that the OLS regression assumptions, such as linearity, normality, and homogeneity, are not violated. Furthermore, because multicollinearity is a concern, the current investigation generates a comprehensive set of matrix correlations between the variables included in the study, as shown in Table 2. The correlation matrix results can be used to infer the presence of multicollinearity. When the correlation coefficients approach eight, multicollinearity is obvious. The results show that the independent variables were not multicollinear.

(Model 1)

$$\begin{aligned} DV_{it} = {} & \beta_0 + \beta_1 ESG_{it} + \beta_2 Size_{it} + \beta_3 PrPlantEq_{it} + \beta_4 PROF_{it} + \beta_5 Lev_{it} \\ & + \beta_6 NumberAnalysts_{it} + \beta_7 TO\_binsq_{it} + Year + Sector + \varepsilon_{it}, \end{aligned}$$

TABLE 2 Matrix of correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) DV PAT	1.000												
(2) DV YD	0.597	1.000											
(3) DV DUM	0.534	0.496	1.000										
(4) ESG_Combined	0.170	0.130	0.139	1.000									
(5) SPS	0.155	0.106	0.098	0.868	1.000								
(6) GPS	0.110	0.086	0.073	0.622	0.393	1.000							
(7) EPS	0.165	0.170	0.169	0.826	0.736	0.363	1.000						
(8) Size	−0.079	−0.139	0.031	0.143	0.127	0.164	0.187	1.000					
(9) PrPlantAEqui	0.018	0.076	0.136	0.348	0.335	0.218	0.498	0.462	1.000				
(10) PROF	0.051	0.078	0.069	0.058	0.082	0.023	0.013	0.066	−0.101	1.000			
(11) lev	−0.077	−0.037	−0.091	0.074	0.082	0.055	0.073	0.088	0.250	0.052	1.000		
(12) NumberAnalysts	0.012	−0.052	0.066	0.328	0.339	0.194	0.355	0.458	0.404	0.135	0.020	1.000	
(13) TO_binsq	−0.018	−0.201	−0.070	−0.058	−0.019	−0.067	−0.123	0.086	−0.292	0.345	−0.248	0.096	1.000

(Model 2)

$$DV_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 Size_{it} + \beta_3 PrPlantEq_{it} + \beta_4 PROF_{it} + \beta_5 Lev_{it} + \beta_6 NumberAnalysts_{it} + \beta_7 TO\_binsq_{it} + \beta_8 L - cycle * ESG_{it} + Year + Sector + \varepsilon_{it}.$$

3.3 | Measurement of the study variables

3.3.1 | Independent variable

ESG rating scores are widely used in academic empirical research as a metric for measuring corporate sustainability (e.g., Rajesh, 2020; Verga Matos et al., 2020); however, other methods of measuring corporate sustainability are available and used as well (Diez-Cañamero et al., 2020). This study uses the ESG rating score to measure corporate sustainability.

Thomson Reuters offers an ESG score that measures a firm's sustainability performance. The ESG rating score is composed of the following dimensions referred to as ESG pillars: environmental (E), social (S), and governance (G). Hence, using reported data in the environmental, social, and governance pillars, the ESG score measures the firm's overall performance between 0 and 100 (Verga Matos et al., 2020).

Thomson Reuters calculates ESG measures based on a subset of 178 relevant fields grouped into 10 categories. Resource use, emissions, and innovation fall under the environmental category; workforce, human rights, community, and product responsibility fall under the social category; and management, shareholders, and CSR strategies fall under governance. Based on factors such as comparability, data availability, and industry relevance, the underlying measures are created. In combination, each of these 10 categories is weighted proportionately to the number of measures it contains within each category to formulate the three pillar scores, which ultimately allows the creation of ESG scores. According to the ESG, environmental factors comprise 34.0% of the weight, social factors comprise 35.5%, and governance factors comprise 30.5%. Overall, the ESG rating can be considered as a reflection of the company's environmental, social, and governance performance, commitment, and effectiveness. More than 7000 publicly listed companies are rated (more than 2900 companies in North America and more than 1200 in Europe), with small firm data extending back to 2002.

A key independent variable is the ESG score, which is essentially presented by the sum of its three components (E, S, and G). Moreover, as part of this study, we replicate its primary analysis by disentangling the ESG score into its constituent subcomponents (E, S, and G) to draw clear inferences about the interactions between the different perspectives affecting the outcome variable.

On the other hand, the corporate life cycle was another variable of interest. The business life cycle is a conceptual framework that describes the stages a company goes through over time from its inception to its final closure. It can be proxied using the ratio of the company's retained earnings to its total assets (Hasan et al., 2015).

3.3.2 | Dependent variable

Dividends policy was assessed in this study utilizing a range of proxies. In general, determining a firm's dividend policy entails evaluating numerous dividend-related proxies that give information about how the company distributes earnings to its shareholders. This study used a dividend payout ratio, dividend yield, and a dichotomous variable that captures whether or not the corporation paid dividends. First, the proportion of earnings that a company pays out to

shareholders is considered a measure of the dividends payout ratio. In line with Ellili (2022a), this study uses the ratio of total dividends to total net income to calculate the dividends payout ratio. Second, dividend yield is a fundamental indicator that compares a company's stock price to its yearly dividend income. It can be computed by the ratio of annual dividends per share to the stock price per share (Saeed & Zamir, 2021). While dividend yield is indeed influenced by stock prices, it is also a widely used measure in dividend policy studies as it provides a direct link between the market valuation of a company and its dividend payments (Verga Matos et al., 2020). Investors often view dividend yield as a signal of financial health and sustainability, which aligns with the objectives of our study in exploring the relationship between ESG performance and corporate financial policies. Dividend yield remains relevant for capturing how ESG initiatives might influence investor perceptions and thus stock prices, while still reflecting a company's commitment to returning value to shareholders through dividends. To further mitigate the concern raised, we have added the dividend payout ratio as a key dependent variable in our analysis. The dividend payout ratio directly reflects the proportion of earnings paid out as dividends, independent of stock prices. This measure complements dividend yield and provides a more complete picture of a firm's dividend policy, allowing us to isolate the impact of ESG performance on actual dividend distributions. Third, a dummy variable is used to capture whether a firm has distributed earnings to its shareholders or not. Therefore, a value of one has been assigned if the firm has dividends and 0 otherwise.

3.3.3 | Control variable

In accordance with other research, we take into account a variety of risk indicators and business characteristics that are likely to affect the dividend policy. Those factors are firm profitability, firm size, corporate leverage, number of analysts, and market value (Ananzeh et al., 2024). Table 3 provides a summary of the definitions of the variables included in this study.

4 | EMPIRICAL ANALYSIS

4.1 | Descriptive statistics

Table 4 shows the descriptive statistics for a data set with 16,464 observations. The variable **DV PAT** has a mean of 0.015, showing a relatively low mean, indicating that firms are not dedicating a large portion of their profits to dividends on average. The range from −1.508 to 3.843 shows a significant dispersion of data points around the mean. Similarly, **DV YD**, or Dividend Yield, has a mean of 0.011 with a range of −1.654 to 3.843. **DV DUM** has a mean value of.884 and a standard deviation of.32.

The combined ESG score is represented by the variable **ESG_Combined** which has a mean of 44.216 and a standard deviation of 19.583. This shows that firms have a modest ESG score, with significant variability in their ESG performance. The range of ESG ratings recorded across the firms is from 5.404 to 85.418.

When looking at the ESG pillars independently, such as **SPS** (Social Performance Score), **GPS** (Governance Performance Score), and **EPS** (Environmental Performance Score), their statistics show various means and standard deviations, emphasizing their diverse distributions across the data set.

PROF (Profitability) has a mean value of 16.724 whereas **Size** has a mean of 15.179 and a standard deviation of 2.369, showing substantial variation in the size of the firms included in the sample. **lev** (Leverage) has a mean of 0.234 and a standard deviation of 0.161, indicating a

TABLE 3 Measurement of the study variables.

Variable	Symbole	Measure
Dividend payout ratio	DV PAT	The ratio of total dividends to total net income
Dividends Yield	DV YID	The ratio of annual dividends per share to the stock price per share
Dividends Dummy	DV DUM	A value of one has been assigned if the firm has dividends and 0 otherwise
ESG score	ESG_Combined	The total ESG performance
Environmental Score	EPS	The environmental performance
Social Score	SPS	The social performance
Governance Score	GPS	The governance performance
Return on assets	PROF	Net income to total assets
Property, plant & equipment		The log value of the total number property, plant & equipment
Firm size	Size	The log value of the company's total assets
Leverage	Lev	Total debt to total assets
Number of analysts	Analysts	Total number of firm analysts
The market value	TO_binsq	TO_binsq
The life cycle	L-cycle	Retained earnings to total assets
Year		The year dummies
Sector		The sector-type dummies
ε		Error term
i		The company
t		The year

moderate variation of leverage throughout the sample. Furthermore, **NumberAnalysts** (Number of Analysts) shows a mean of 2.492, showing that firms are typically followed by 2 to 3 analysts, with a standard deviation of 0.648 indicating some variety in analyst coverage. Finally, **TO_binsq** (Tobin's Q) has a mean of 1.68 and a standard deviation of 2.326, indicating a modest distribution of Tobin's Q-Squared values ranging from 0.007 to 44.954.

4.2 | Results and discussion

Table 5 displays the regression analysis findings for investigating the association between ESG ratings, company dividend policy, and the moderating role of the business life cycle on this relationship. Dividends payout ratio (**DV PAT**), Dividend yield (**DV YD**), and a dummy variable for Dividends (**DV DUM**) are the dependent variables (**DV**). The positive coefficients for ESG_Combined are statistically significant across all three dependent variables **DV PAT**, **DV YD**, and **DV DUM**. This shows that organizations with higher **ESG** ratings tend to give a bigger share of their revenues as dividends, underlining their commitment to sustainable operations.

TABLE 4 Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
(1) DV PAT	16464	0.015	0.963	−1.508	3.843
(2) DV YD	16464	0.011	0.973	−1.654	3.843
(3) DV DUM	16464	0.884	0.32	0	1
(4) ESG_Combined	16464	44.216	19.583	5.404	85.418
(5) SPS	16463	45.593	24.675	0.053	98.637
(6) GPS	16464	50.859	22.246	0.251	98.723
(7) EPS	16463	39.835	28.247	0	98.872
(8) Size	16464	15.179	2.369	7.018	19.285
(9) PrPlantAEqui	16464	21.288	1.812	16.055	25.475
(10) PROF	16464	16.724	18.007	−22.194	119.182
(11) lev	16464	0.234	0.161	0	0.674
(12) NumberAnalysts	16464	2.492	0.648	0.693	3.638
(13) TO_binsq	16464	1.68	2.326	0.007	44.954

The **Size** coefficients are positively and statistically significant for **DV PAT** and **DV YD**, indicating a significant favorable association between business size and dividend allocation. Larger corporations, as defined by size, tend to devote a bigger part of their earnings to dividends since the potential for future growth is rare.

PROF coefficients are positive and statistically significant for all three dependent variables. This suggests that corporations with bigger profits are more inclined to devote a larger portion of their earnings to dividends.

Robust standard errors clustered by country level

Lev is negatively and statistically significantly associated with dividends policy across all dependent variables. This implies that more financial leverage is connected with smaller dividend payouts, which might be due to corporations prioritizing debt repayment rather than dividends to preserve financial stability.

There is a negative association between **TO_binsq** with dividends policy. On the other hand, control variables such as **PrPlantEq_log** and **NumberAnalysts** are not associated with corporate dividends.

In terms of the moderating influence of the corporate life-cycle, the interaction term **ESG * L-cycle** is negative and statistically significant for **DV PAT** and **DV YD**. In the early stages of the corporate life cycle, the impact of ESG rating on dividends is more prominent. On the other hand, ESG ratings and dividends tend to have a weaker relationship as a firm progresses through its life cycle.

Robust standard errors clustered by country level

In Table 6, the results show a positive and significant relationship between social pillar score and corporate dividend policies. Firms with higher social scores tend to allocate a larger proportion of their earnings to dividends. In the same vein, **Size** and **PROF** exhibit a positive and statistically significant association with dividend allocation while **lev**and **TO_binsq** show a negative association with corporate dividends.

TABLE 5 The impact of ESG rating on corporate dividends and the moderation role of life-cycle.

Variables	(1) DV PAT	(2) DV YD	(3) DV DUM	(4) DV PAT	(5) DV YD	(6) DV DUM
ESG_Combined	0.00922***	0.00743***	0.0201***	0.00941***	0.00770***	0.0228***
	[5.54]	[3.47]	[2.59]	[5.33]	[3.53]	[3.38]
Size	0.0405**	0.0562***	0.0160	0.0408**	0.0564***	0.0144
	[2.54]	[2.72]	[0.31]	[2.59]	[2.77]	[0.27]
PrPlantEq_log	0.0177	0.0539	0.298	0.0157	0.0517	0.277***
	[0.62]	[1.67]	[0.75]	[0.56]	[1.62]	[4.84]
PROF	0.00332***	0.00920***	0.0203***	0.00325***	0.00921***	0.0196**
	[3.03]	[3.71]	[3.31]	[2.99]	[3.76]	[2.26]
lev	−0.594***	−0.681***	−2.906***	−0.591***	−0.678***	−2.719***
	[−4.30]	[−4.50]	[−5.93]	[−4.26]	[−4.37]	[−5.71]
NumberAnalysts	−0.0288	−0.125	−0.203	−0.0306	−0.128**	−0.226
	[−0.53]	[−0.24]	[−1.02]	[−0.56]	[−2.27]	[−1.18]
TO_binsq	−0.0100*	−0.0810***	−0.0595***	−0.00981*	−0.0809***	−0.0569***
	[−1.95]	[−5.98]	[−3.45]	[−1.90]	[−6.06]	[−3.42]
L-cycle				0.0144***	0.0151*	0.366
				[4.40]	[1.78]	[1.64]
(ESG* L-cycle)				−0.0198***	−0.0255*	−0.0448*
				[−3.31]	[−1.99]	[−1.65]
Constant	0.261	0.502	−3.172***	0.288	0.520	−2.901***
	[0.60]	[1.18]	[−3.26]	[0.67]	[1.23]	[−3.26]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fe	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,464	16,464	16,464	16,416	16,416	16,416
R-squared	0.072	0.165		0.072	0.166	

When the moderating impact of the corporate life cycle is examined, the interaction term **SPS * L-cycle** exhibits negative coefficients; however, a possible influence of the corporate life cycle on the link between social performance and dividend policies may not exist because it is not statistically significant.

According to the results in Table 7, stronger governance performance **GPS** is associated with a higher allocation of earnings to dividends. Similarly, larger organizations and profitable ones, as indicated by positive coefficients, tend to distribute a higher percentage of earnings as dividends, which is in line with traditional financial expectations. Other control variables, such as **Lev**, and **Tobin's Q**, were also shown to affect firms' dividends negatively with varying degrees of significance.

TABLE 6 The impact of social performance on corporate dividends and the moderation role of life-cycle.

Variables	(1) DV PAT	(2) DV YD	(3) DV DUM	(4) DV PAT	(5) DV YD	(6) DV DUM
SPS	0.00689***	0.00545***	0.0110*	0.00689***	0.00552***	0.0122**
	[5.57]	[3.10]	[1.85]	[5.25]	[3.12]	[2.29]
Size	0.0381**	0.0545**	0.0199	0.0385**	0.0549**	0.0192
	[2.36]	[2.61]	[0.40]	[2.42]	[2.66]	[0.38]
PrPlantEq_log	0.0177	0.0543	0.319***	0.0164	0.0529	0.302***
	[0.62]	[1.61]	[5.69]	[0.59]	[1.58]	[5.08]
PROF	0.00328***	0.00917***	0.0207**	0.00321***	0.00920***	0.0198**
	[3.02]	[3.74]	[2.40]	[2.97]	[3.80]	[2.35]
lev	−0.614***	−0.697***	−2.965***	−0.614***	−0.697***	−2.815***
	[−4.39]	[−4.57]	[−5.92]	[−4.39]	[−4.43]	[−5.78]
NumberAnalysts	−0.0288	−0.124**	−0.156	−0.0292	−0.125**	−0.172
	[−0.53]	[−2.23]	[−0.80]	[−0.53]	[−2.24]	[−0.90]
TO_binsq	−0.0127**	−0.0832***	−0.0651***	−0.0126**	−0.0832***	−0.0624***
	[−2.34]	[−6.29]	[−3.80]	[−2.29]	[−6.38]	[−3.80]
L-cycle				0.00715*	0.0105	0.240
				[1.84]	[1.27]	[1.31]
(SPS* L-cycle)				−6.33e-05	−0.000156	−0.00220
				[−1.24]	[−1.46]	[−1.02]
Constant	0.327	0.547	−3.335***	0.347	0.559	−3.090***
	[0.79]	[1.24]	[−3.17]	[0.85]	[1.26]	[−3.14]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fe	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,463	16,463	16,463	16,415	16,415	16,415
R-squared	0.068	0.162		0.068	0.162	

The interaction term **GPS * L-cycle** implies that the corporate life cycle may have a moderating effect, with significant negative coefficients showing that the stage of the company's life cycle may influence how governance performance affects dividend decisions positively in young firms compared to mature ones.

Robust standard errors clustered by country level

Table 8 exhibits the influence of environmental performance **EPS** on company dividend policy, considering the moderating role of the business life cycle. The coefficient values over all dividend-related variables show a substantial positive link between environmental performance and dividend allocation, implying that better environmental performance will likely increase earnings to dividends percentage. Similarly, larger and more profitable firms, as indicated by positive coefficients, tend to distribute a higher share of earnings as dividends in keeping with

TABLE 7 The impact of governance performance on corporate dividends and the moderation role of life-cycle.

Variables	(1) DV PAT	(2) DV YD	(3) DV DUM	(4) DV PAT	(5) DV YD	(6) DV DUM
GPS	0.00498***	0.00406***	0.00696	0.00519***	0.00432***	0.0106***
	[4.99]	[4.61]	[1.60]	[4.80]	[4.60]	[3.35]
Size	0.0542***	0.0673***	0.0439	0.0547***	0.0677***	0.0397
	[3.03]	[2.95]	[0.74]	[3.07]	[2.99]	[0.63]
PrPlantEq_log	0.0439	0.0749**	0.351***	0.0420	0.0731*	0.327***
	[1.32]	[2.03]	[5.67]	[1.29]	[2.00]	[4.85]
PROF	0.00382***	0.00960***	0.0214**	0.00374***	0.00960***	0.0209**
	[3.32]	[3.93]	[2.52]	[3.26]	[3.96]	[2.47]
lev	−0.619***	−0.701***	−2.949***	−0.616***	−0.699***	−2.711***
	[−4.38]	[−4.46]	[−5.98]	[−4.35]	[−4.36]	[−5.62]
NumberAnalysts	0.0284	−0.0795	−0.0645	0.0268	−0.0814	−0.0927
	[0.55]	[−1.54]	[−0.38]	[0.51]	[−1.59]	[−0.57]
TO_binsq	−0.00978*	−0.0808***	−0.0642***	−0.00952	−0.0806***	−0.0611***
	[−1.68]	[−5.89]	[−3.41]	[−1.64]	[−5.94]	[−3.33]
L-cycle				0.0184***	0.0173***	0.556**
				[4.46]	[2.84]	[2.18]
(GPS* L-cycle)				−0.000234***	−0.000258***	−0.00670**
				[−3.83]	[−2.81]	[−2.17]
Constant	−0.149	0.171	−3.904***	−0.129	0.182	−3.712***
	[−0.30]	[0.37]	[−4.19]	[−0.27]	[0.40]	[−4.21]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fe	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,464	16,464	16,464	16,416	16,416	16,416
R-squared	0.056	0.155		0.057	0.156	

traditional financial expectations. Other control factors, including **Lev** and **Tobin's Q**, have been shown to hurt company dividends with varied degrees of significance.

The interaction term **EPS * L-cycle** has negative and significant coefficients, indicating that the company life cycle may have a moderating influence on **DV PAT** and **DV YD**. The influence of the EPS score on dividends is particularly pronounced in the early phases of the company life cycle. EPS ratings and dividends, on the other hand, tend to have a weaker association as a company proceeds through its life cycle.

Robust standard errors clustered by country level

Overall, the findings of this study show that more sustainable companies have more consistent dividend distribution. This conclusion remains true when the ESG pillars, particularly the environmental and governance pillars, are evaluated. The ESG effort, according to agency

TABLE 8 The impact of environmental performance on corporate dividends and the moderation role of life-cycle.

Variables	(1) DV PAT	(2) DV YD	(3) DV DUM	(4) DV PAT	(5) DV YD	(6) DV DUM
EPS	0.00661***	0.00631***	0.0163***	0.00672***	0.00646***	0.0172***
	[3.78]	[3.15]	[2.84]	[3.71]	[3.15]	[3.21]
Size	0.0410***	0.0548***	0.0161	0.0413***	0.0551***	0.0153
	[2.77]	[2.83]	[0.34]	[2.82]	[2.89]	[0.31]
PrPlantEq_log	0.00292	0.0345	0.262***	0.00116	0.0328	0.247***
	[0.13]	[1.28]	[5.75]	[0.05]	[1.23]	[5.10]
PROF	0.00352***	0.00926***	0.0207**	0.00346***	0.00930***	0.0202**
	[3.05]	[3.61]	[2.29]	[3.04]	[3.69]	[2.25]
lev	−0.556***	−0.639***	−2.806***	−0.555***	−0.639***	−2.679***
	[−4.12]	[−4.36]	[−5.88]	[−4.11]	[−4.27]	[−5.76]
NumberAnalysts	−0.0191	−0.128**	−0.201	−0.0202	−0.129**	−0.217
	[−0.33]	[−2.15]	[−1.03]	[−0.35]	[−2.17]	[−1.15]
TO_binsq	−0.0101*	−0.0805***	−0.0597***	−0.00987*	−0.0804***	−0.0578***
	[−1.87]	[−6.16]	[−3.71]	[−1.82]	[−6.24]	[−3.69]
L-cycle				0.0102***	0.0104**	0.185
				[5.24]	[2.40]	[1.43]
(EPS* L-cycle)				−0.000131***	−0.000186***	−0.00160
				[−3.44]	[−3.56]	[−1.01]
Constant	0.659*	0.949**	−2.263**	0.685**	0.964**	−2.017**
	[1.96]	[2.50]	[−2.05]	[2.06]	[2.53]	[−1.97]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fe	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,463	16,463	16,463	16,415	16,415	16,415
R-squared	0.070	0.170		0.071	0.171	

theory, favors a more open dividend policy due to lower transaction costs (Cuadrado-Ballesteros et al., 2016), as well as lower debt costs due to lower borrowing costs (Cheung et al., 2018; Ellili, 2022a). Furthermore, signaling theory suggests that corporations are more likely to benefit from enhanced image and reputation in the capital markets, resulting in more successful operations and bigger dividend payouts (Bae et al., 2021).

However, the life cycle is revealed to have a negative moderating influence on the link between dividend policy and ESG. In other words, the favorable relationship between ESG and dividend distribution is less pronounced for organizations in the maturity life cycle phase compared to those in the early life cycle stage. This indicates that the impact of ESG practices on dividend policies is likely to be affected by the life cycle stage of the company. During the initial stages of a firm's life cycle, also known as the infancy stage, firms are likely to use both

ESG practices and dividend policies as communication tools to convey good governance and business ethics. Therefore, these companies wish to gain the interest of potential investors and ensure that consumers consider them trustworthy market participants (Lloyd et al., 1985; Ellili, 2022a). Dividends do the same when combined with ESG initiatives since it helps to give confidence to investors that the firm is also concerned with the social aspect of business apart from the financial aspect of the business. This is because, a higher ESG score is a good sign of management's commitment to aligning their interests with those of shareholders (Healy & Palepu, 2001). Thus, a stronger emphasis on sustainability, including ESG activities, will likely be noted throughout the early phases of a company's life cycle. Furthermore, these businesses want to build a reputable brand, adhere to ethical standards, and be perceived as ethical by society. As a result, new growth companies that adhere to ESG best practices are more likely to have better internal governance, which reduces the possibility of managers acting opportunistically by holding surplus cash, and to have the backing and loyalty of outside investors and stakeholders, which allows them to access the capital market (Al Amosh, 2024b; Atif et al., 2022).

As companies transition into more established phases of their life cycle, the dynamics of their relationship with dividends and ESG practices shift. According to the agency theory, ESG and corporate dividends can be regarded as efficient tools for reducing agency concerns (Lloyd et al., 1985; Ellili, 2022a). Regarding this, in these mature organizations, ESG initiatives can sometimes be used to mitigate agency costs in the same way dividends are used. Agency costs are costs due to divergence of interest between managers and shareholders and ESG can minimize such costs since it fosters truth, accountability, and integrity (Ellili, 2022a). In other words, ESG might serve as an equal alternative for corporate dividends in decreasing agency costs, even though corporate dividends play a considerable role in reducing agency costs. Because such businesses have a high market image, they are likely to have a reasonable ESG effort, and ESG initiatives are unlikely to affect cash holdings (Atif et al., 2022). Consequently, the management of mature firms may choose to prioritize ESG practices above dividend distributions.

4.3 | Heterogeneity analysis

The results presented above demonstrate a heterogeneity analysis between developed and developing countries, focusing on how the corporate life cycle affects of ESG -dividend policy relationship across these different contexts. The results show that in developed countries, the life cycle stage has a significant positive effect on payout and yield, indicating that firms in more advanced stages of their life cycle tend to distribute higher dividends. However, for the dividend dummy, the effect of the life cycle is only marginally significant. Such a relationship is not proven among developing countries.

The interaction between ESG performance and the corporate life cycle (ESG * LC-cycle) reveals important differences in how this relationship affects dividend policy in developed and developing countries. In developed countries, the interaction term has a negative and significant effect on the three proxies of corporate dividends. This indicates that as firms mature, the positive influence of ESG on dividend payouts diminishes. Mature firms in these economies, which already have strong governance structures and solid reputations, may use ESG performance as a substitute for dividends to signal stability and financial health to investors. In this case, increasing dividend payouts becomes less important because these companies rely more on their established ESG practices to demonstrate their commitment to sustainability and governance, reducing the necessity for high dividend distributions as a signal to the market.

TABLE 9 Heterogeneity analysis between developed and developing countries.

	Developed countries			Developing countries		
Variables	**DV PAT**	**DV YD**	**DV DUM**	**DV PAT**	**DV YD**	**DV DUM**
ESG_combined	0.0110***	0.00899***	0.0299***	0.00698***	0.00432	0.0154*
	[4.84]	[3.62]	[3.94]	[3.89]	[1.40]	[1.76]
Size	−0.0466**	−0.0660***	−0.0626	−0.0228	−0.0463	0.109**
	[−2.36]	[−2.87]	[−1.07]	[−1.11]	[−1.40]	[2.43]
PrPlantEq_log	0.0205	0.0449	0.322***	−0.00572	0.0537	0.110
	[0.53]	[1.05]	[3.71]	[−0.30]	[1.53]	[1.41]
PROF	0.00198**	0.00704***	0.0160**	0.00922***	0.0181***	0.0507***
	[2.07]	[4.39]	[2.56]	[6.10]	[7.69]	[6.11]
lev	−0.512***	−0.595***	−2.774***	−0.679***	−0.804***	−2.453***
	[−2.96]	[−3.33]	[−4.41]	[−4.05]	[−6.14]	[−4.43]
NumberAnalysts	−0.0558	−0.0874	−0.418	−0.0271	−0.188*	0.0938
	[−0.71]	[−1.30]	[−1.58]	[−0.37]	[−1.99]	[0.64]
TO_binsq	−0.0149**	−0.0841***	−0.0711***	−0.0160*	−0.0970***	−0.0916***
	[−2.18]	[−4.70]	[−2.81]	[−1.74]	[−6.13]	[−2.98]
L-cycle	0.0122***	0.0111**	0.294*	0.135	0.0642	1.227
	[3.97]	[2.26]	[1.68]	[0.71]	[0.50]	[1.33]
(ESG* L-cycle)	−0.000153**	−0.000176**	−0.00358*	−0.00263	0.000799	−0.0213*
	[−2.62]	[−2.24]	[−1.66]	[−1.15]	[0.20]	[−1.78]
Constant	0.416	0.683	−3.191***	0.212	0.201	−0.371
	[0.75]	[1.31]	[−2.74]	[0.49]	[0.37]	[−0.20]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fe	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,132	12,132	12,132	4284	4284	4284
R-squared	0.081	0.174		0.098	0.223	

In contrast, for developing countries, the interaction term shows a weaker and less consistent effect. While the interaction is not significant for payout and yield, it is marginally significant and negative for the dividend dummy. This suggests that in developing economies, the moderating effect of the corporate life cycle on the ESG-dividend relationship is less pronounced. Firms in these markets, even as they mature, may still rely on dividend payments to a greater extent than ESG performance to signal financial stability. The integration of ESG practices in developing markets is likely less advanced than in developed economies, meaning that dividends remain a more important tool for communicating financial health and market credibility (Table 9).

Robust standard errors clustered by country level

4.4 | Robustness test

4.4.1 | Alternative measure

This research adopts an alternative approach to assessing the corporate life cycle by utilizing another financial metric: the ratio of total retained earnings to total equity. This measure provides a unique perspective on a company's growth stage and financial health, as it reflects the extent to which a firm reinvests its profits back into the business rather than distributing them to shareholders. We repeated the analysis for the combined ESG score and the findings (not reported) were found to be consistent with and reinforce the conclusions drawn earlier. This alignment suggests that the ratio of retained earnings to equity is a reliable indicator of a company's developmental phase and supports the validity of previous findings. Furthermore, the corroboration of these results across different studies enhances the overall understanding of corporate behavior and financial strategies throughout various stages of the corporate life cycle. This consistency not only strengthens the credibility of the current research but also contributes to the broader discourse on corporate finance and strategic management.

4.4.2 | Endogeneity concern

It is of paramount importance to evaluate the potential presence of an endogeneity concern within our model. To this end, we have employed the Instrumental Variable Method (IV) in conjunction with 2SLS regression as the cornerstone of our primary analysis. In this regression, we have classified the overall ESG score as an endogenous variable. For the selection of our instruments, we have drawn upon the ESG score, utilizing the mean values across country, industry, and year as a pivotal benchmark. This approach acknowledges that a firm's practices may be influenced by the behaviors of its industry peers within each nation, given their analogous business environments. The mean values across country, industry, and year are unlikely to directly affect dividend distributions. Furthermore, we have also instrumented the adoption of GRI for each firm, as it is expected to significantly influence ESG practices. Additionally, the presence of a CSR sustainability committee has also been incorporated as an instrument within the model.

A comprehensive series of diagnostic evaluations was conducted to validate our choice of instruments. Notably, these instruments exhibited a substantial correlation with the ESG score at a 1% significance level, thereby affirming their relevance. Moreover, Hansen's over-identification test upheld the null hypothesis of exogeneity, indicating that the instruments are indeed valid and free from correlation with the error term. It is important to highlight that the assumption regarding the exogeneity of the ESG variable was successfully validated, suggesting that endogeneity does not pose a concern. Additionally, our findings (not reported) derived from the IV-2SLS method, align with our main model.

5 | CONCLUSION

This thorough cross-country study gathered significant insights into the relationship between ESG rating, company dividend policy, and the moderating impact of the business life cycle. The analysis shows a substantial positive link between environmental performance (ESG) and dividend allocation, implying that businesses with superior ESG performance tend to allocate more earnings to dividends. Furthermore, the corporate life cycle has a moderating effect on this link, negatively altering how ESG performance influences dividend decisions at various periods of a company's life cycle. The influence of ESG ratings on dividends is particularly visible in the early stages of a company's life cycle. ESG ratings and dividends, on the other

hand, tend to have a weaker association as a business proceeds through its life cycle. This relationship is more likely relevant for firms operating in developed economies compared to developing economies. This underscores the intricate dynamics inherent in dividend policy, as well as the necessity for a comprehensive examination of a firm's ESG practices and life cycle stage when establishing dividend allocations.

The findings of this study have important implications for businesses looking to include ESG elements in their financial plans, underlining the significance of linking sustainability initiatives with dividend policy. Finally, this research leads to a better understanding of the complicated relationship between sustainability, financial decisions, and organizational success.

Also, the positive association identified between ESG and dividend allocation has significant implications for both corporations and stakeholders. Firms should understand the potential benefits of strong ESG performance, not just in terms of sustainability but also in terms of shareholder value. Efficient resource management, sustainable practices, and aggressive ESG measures may boost a company's reputation, favorably affecting investor opinions and, as a result, dividend distributions. Investors, on the other hand, should view ESG performance as a useful predictor of a company's long-term financial stability and dividend potential. By incorporating such factors into investing selections, investors may support environmentally responsible businesses while possibly benefiting from their dividend programs.

Interestingly, the company life cycle's moderating influence on the link between ESG performance and dividend policy highlights the need for adaptable tactics. Dividend policy should be tailored to the stage of a company's life cycle. During growth stages, when investing for expansion is critical, a balanced strategy of dividends and ESG activities is prudent. In mature phases, prioritizing dividend distributions, particularly for businesses with high ESG performance, may attract investors seeking both financial returns and alignment with sustainability. Such business life cycle methods can increase financial performance, satisfying shareholders, and long-term organizational sustainability.

There are various prospective research directions. Cross-sector analysis may identify sector-specific patterns and dynamics by expanding this study to examine specific industry sectors. ESG ratings and the business life cycle may have varying effects on dividend policy across industries. Furthermore, a longitudinal approach may reveal how these associations change over time. Tracking firms through various life cycle stages and analyzing changes in dividend policy in response to fluctuations in ESG ratings might provide significant insights into such relationships. Furthermore, it would be instructive to investigate how different nations' legal and regulatory frameworks impact the link between ESG criteria, company dividends, and the business life cycle. Legal and regulatory variations can have a big impact on how organizations think about sustainability and dividends.

Also, a better understanding would be gained by supplementing quantitative data with qualitative insights into how organizations create and implement plans while taking ESG considerations and the corporate life cycle into account. Interviews, case studies, or surveys of business decision-makers might reveal strategic intricacies. Future studies in these areas will help us comprehend the complex interplay between ESG issues, dividend policy, and the business life cycle, allowing organizations to make more informed and sustainable strategic decisions.

AUTHOR CONTRIBUTIONS

Husam Ananzeh: Data curation; formal analysis; investigation; resources; supervision; visualization; writing—original draft. **Amin Khalifeh**: Conceptualization; formal analysis; methodology; project administration; visualization. **Hamza Alqudah**: Data curation; investigation; software; validation; visualization; writing—review and editing. **Hassan Ali Al-Ababneh**: Conceptualization; investigation; methodology; resources; software; visualization. **Hamzeh Al Amosh**: Conceptualization; data curation; funding acquisition; methodology; resources; supervision; writing—review and editing.

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ETHICS STATEMENT
Not applicable.

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