



# Moderating role of corporate governance and ownership structure on the relationship of corporate sustainability performance and dividend policy

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## ABSTRACT

The aim of this study is to investigate the influence of corporate governance and ownership structure on the relationship of corporate sustainability performance and dividend policy by using a panel dataset of 79 non-financial companies listed on Borsa Istanbul 100 Index for the years 2014–2020. We employed the panel logit, probit and tobit regression models for the analysis. The results indicate that corporate governance and family ownership significantly and positively moderate the relationship between corporate sustainability performance and dividend policy, while concentrated ownership and institutional ownership do not play a significant moderating role on this relationship. The findings also show that firm-level corporate governance is associated with high dividend payments, suggesting that this institutional mechanism helps reduce agency problems and lead companies to allocate capital more efficiently. The findings provide valuable insights for companies in structuring sustainability activities and shaping dividend policies with regard to ownership structure. It also offers policy prescriptions in emerging markets in the area of corporate financing policies.

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## 1. Introduction

The interaction of corporate sustainability performance (CSP) and finance has received immense attention from academia, business community and financial industry due to the increasing influence of social and environmental challenges on organizations. Companies consider CSP a new strategic choice to improve reputation and gain more competitive advantage since CSP ultimately focuses on long-term corporate value rather than simply maximizing short-term earnings (Oh and Park 2021). Hence, companies position themselves to balance the association of CSP and firm value by aligning environmental, social and governance (ESG) goals within the strategic decisions (Dahlsrud 2008; Montiel 2008). This is especially true for emerging markets where the tangible and intangible

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benefits of sustainability activities will bring more competitive advantages over time. Thus companies in these markets should embed sustainability in all levels of organizations and prioritize developing solid relationships with investors and stakeholders through a sustainability lens (Stan, Stan, and Bratian 2020).

Meanwhile, companies use different policies to meet the expectations of shareholders and stakeholders. Dividend policy is one of them. It is an important way for investors to generate return on investment, and thus, it can be viewed as a socially responsible attitude toward the distribution of wealth (Oh and Park 2021). Companies use dividend policy to distribute a certain amount of net profit to the shareholders. Given that companies are generally engaged with good corporate governance and socially responsible actions, dividend policy may be influenced by implementing sustainability actions and its tridimensional perspective called Triple Bottom Line (Harjoto and Jo 2011). The latter focuses on integrating environmental, social, governance and economic concerns into the long-run performance of companies (Montiel 2008; Van Marrewijk 2003). Benlemlih (2019) claims that CSP affects the distribution of wealth in companies. Thus, in combination with the dividend policy, sustainability may act as a value driver for shareholders and stakeholders to meet the goals of different interested parties.

Although many authors focus on the interaction of CSP and financial performance (e.g. Benlemlih 2019; Brooks and Oikonomou 2018; Margolis, Elfenbein, and Walsh 2009; Naseem et al. 2020; Orlitzky, Schmidt, and Rynes 2003; Wang, Dou, and Jia 2016; Xie et al. 2019 among many others), many of these studies elaborate on the nexus between CSP and dividend policy in developed markets (e.g. Benlemlih 2019; Cheung, Hu, and Schwiebert 2018; Matos, Barros, and Sarmiento 2020; Samet and Jarboui 2017; and Sheikh et al. 2021). Thus there is a gap to be filled in emerging markets that have witnessed unprecedented growth in trade and investment during the last two decades. Their share of global trade volume has increased from 32% in 2000 to 46% in 2019. Approximately 15% of foreign direct investment was destined for emerging economies in 2000, while in 2019 this figure has increased to 46% (OECD 2021). However, these markets are usually characterized by weak corporate governance and investor protection, market uncertainty and concentrated/family ownership (Khan and Baker 2022). These features cause agency conflicts between controlling and minority shareholders due to potential expropriation of resources and require companies to make substantial efforts for improving sustainability performance (Khan 2022; Latif et al. 2020; Sheikh, Shah, and Akbar 2018). Friede, Busch, and Bassen (2015) analyzed more than 2000 empirical studies and concluded that consideration of ESG criteria has a positive effect on corporate financial performance, particularly in emerging markets. However, CSP may have opposite effect on financial decisions. For instance, companies may tend to reduce dividends because liquidity must be secured for sustainability activities that meet the expectations of stakeholders. In this sense, there is a tendency in emerging markets that controlling shareholders channel resources towards sustainability activities resulting in negative effect on dividend policy (Al-Najjar and Kilincarslan 2016; Sheikh et al. 2021).

In this context, Turkey is an exciting setting for examining the contingency perspective of corporate governance and ownership structure as moderators in exploring the CSP and dividend policy relationship. Turkish capital markets have high ownership concentration and are dominated by family companies that generally shape board decisions on CSP strategies and dividend policy (Al-Najjar and Kilincarslan 2016; Khan 2022;

Yildirim-Öktem and Üsdiken 2010). Turkey has corporate governance rules, environmental regulations and investor protection laws that ensure different aspects of sustainability. Capital Markets Board of Turkey introduced corporate governance principles in 2003 to increase transparency, and Borsa Istanbul (BIST) launched the Corporate Governance Index (BIST CGI) in 2007 to encourage listed companies to comply with these principles and disclose their policies on corporate governance. In 2014, Borsa Istanbul launched the Sustainability Index (BIST SI) to urge firms to improve ESG policies to be a member of that index. Further, the number of sustainability reports published in compliance with the Guidelines of the Global Reporting Initiative has risen significantly since 2014. All these efforts affect the CSP of Turkish companies and their financial decisions, including dividend policy.

Using a panel dataset of 79 non-financial companies listed on the Borsa Istanbul 100 Index from 2014 to 2020, the present study aims to explore the relationship between the engagement of companies in sustainability activities and dividend policy, particularly examining the influence of corporate governance and ownership structure on this relationship. We choose this sample since most of the companies in this sample have large capitalization and have shown significant progress in sustainability performance since 2014. We employ the panel logit, probit and tobit regression models to conduct the analyses. This study contributes to the literature in twofolds. First, it closes a gap by considering the moderating role of corporate governance and ownership structure in validating the relationship between CSP and dividend policy in an emerging market setting, i.e. Turkey. Exploring this relationship is reliable in making implicit and explicit strategic decisions for the long-run performance of companies. Second, our findings help companies in emerging markets to improve their corporate governance policies and facilitate the protection of minority shareholders rights in bringing a positive and complementary association between CSP and dividend policy. Hence, it assists firms in meeting the expectations of investors and stakeholders. Finally, the findings could be used by investors that use ESG-screening as a decision criterion when investing in emerging markets.

Our results first show that companies with high CSP should spend more effort to raise the dividend payout. Second, corporate governance and family ownership have a significant moderating role in determining the interaction between dividend payout and sustainability performance. In contrast, concentrated ownership and institutional ownership have no significant moderating effects on the relationship. These findings provide valuable insights for companies and policymakers to develop and enhance corporate governance, sustainability and dividend policy policies to reduce agency problems and more efficiently shape the allocation of capital resources.

The remaining parts of the study is organized as follows: Section 2 reviews the theoretical background and develops the hypotheses. Section 3 provides the data, variables and research methodology. Section 4 presents empirical findings, and finally, Section 5 concludes and discusses the implications of the findings.

## 2. Theoretical background and hypotheses development

Following the dividend theory postulated by Miller and Modigliani (1961), extensive studies have proposed various expositions of the dividend policy puzzle, namely, agency theory (Jensen 1986; Jensen and Meckling 1976), the 'bird-in-the-hand' theory

(Gordon 1963; Lintner 1962), signaling theory (Ross 1977), life-cycle theory (Fama and French 2001; Mueller 1972) and stakeholders' theory (Freeman 1984).

Earlier research on the relationship of CSP and dividend policy have been mostly held on developed markets and identified a positive relationship (Benlemlih 2019; Cheung, Hu, and Schwiebert 2018; Matos, Barros, and Sarmento 2020; Rakotomavo 2012; Samet and Jarbouai 2017). They claim that CSP not only meets the expectations of investors but also acts as an effective monitoring mechanism, and constrains managers' opportunistic behavior regarding the use of free cash flow, translating it into higher corporate payouts. However, there are also studies that found negative (Saeed and Zamir 2021), weak (Kim and Jeon 2015) and mixed relationships (Cheung 2016; Cheung, Hu, and Schwiebert 2018; Sheikh et al. 2021; Trihermanto and Nainggolan 2020; Villiers and Ma 2017) between CSP and dividend payout. Table 1 provides the summary of the earlier studies. Among many, two prominent theories fit in examining the relationship between CSP and dividend policy, i.e. agency theory and signaling theory.

According to the agency theory, managers are inclined to use the resources of the company in environmental and social investment to get more benefits for themselves acting as good stakeholders without much considering the interests of shareholders (Barnea and Rubin 2010; Brown, Helland, and Smith 2006; Jensen 1986; Jensen and Meckling 1976). In such cases, corporate sustainability may create agency costs. In emerging markets, this situation is more important since ownership of companies is usually concentrated in the hands of families and few large institutional shareholders (Khan and Baker 2022). Typically, controlling shareholders are more concerned with non-financial activities for preserving corporate reputation and responding to the expectations of stakeholders vis a vis social and environmental problems (Anderson and Reeb 2003; Berrone et al. 2010; López-González, Martínez-Ferrero, and García-Meca 2019; Van Gils et al. 2014). Thus they tend to overinvest in sustainability matters beyond optimal level for gaining more recognition and raising long-term capital gains (Godfrey 2005; Ye and Zhang 2011). This perspective may not help minority shareholders, as the latter are more interested in steady dividend payments instead of uncertain future capital gains in line with the bird-in-the-hand theory (Brown, Helland, and Smith 2006). Under this approach, one viable solution to this agency cost is controlling free cash flow for investing in useless projects and paying high dividends (Barnea and Rubin 2010; Jensen 1986). In this sense, dividend policy has a monitoring role in reducing agency conflicts (De Cesari and Ozkan 2015; Easterbrook 1984; Fluck 1998).

The second theory that is closely associated with the relationship between CSP and dividend policy is signaling theory (Bhattacharya 1979). According to this theory, companies use dividend payments to give a positive signal to the market about the expected results of the company (Benartzi, Michaely, and Thaler 1997; Miller and Rock 1985; Oh and Park 2021). Using 115 Indian listed companies over the period of 2009–2012, Seth and Mahenthiran (2022) find that signaling via corporate social responsibility (CSR) and dividends are complementary means of managing stakeholder relations. The findings are similar to the study of European firms by De Villiers, Ma, and Marques (2020) in showing that managers use both CSR disclosure and dividends to signal sustainable performance. From a CSP perspective, dividend payout serves as a signal for two main reasons. First, companies are expected to satisfy the requirements of stakeholders through sustainable wealth creation. This is in line with stakeholder theory.

**Table 1.** Summary of the previous studies.

Author(s)	Sample/duration	Dependent variable(s)	Explanatory variables	Methodology	Relevant theories	Findings
Rakotomavo (2012)	17,670 US firm-year observations/1991–2007	Dividend payouts	CSR Scores	Univariate and multivariate regression analysis	Stakeholder theory, Resource dependence theory, Prospect theory	Positive
Kim and Jeon (2015)	668 domestic firms and 2390 foreign subsidiaries listed on the Korea Composite Stock Index/2000–2010	Dividend payout ratio	CSR activity	Lintner's dividend model	Evolutionary theory, Stakeholder theory	Weak relation
Cheung (2016)	Kinder, Lydenberg, and Domini (KLD) 1,965 firms/1991–2010	Dividend payout ratio	ESG score	First-stage regression	Agency theory	Negative/positive
Samet and Jarboui (2017)	397 firms from 17 European countries listed in STOXX Europe 600 index/2009–2014	Dividend payout ratio	CSR performance	Cross-sectional time-series FGLS regression	Agency theory, Life-cycle theory, Stakeholder theory	Positive
Villiers and Ma (2017)	Kinder, Lydenberg, and Domini (KLD) 1604 US firms/2006–2008	Dividend dummy variable, dividend payout ratio	CSR scores	Logit regression model	Bird-in-the-hand theory, Agency theory, Signaling theory	Positive
Cheung, Hu, and Schwiebert (2018)	KLD 1965 firms/1991–2010	Dividend payout ratio, Dividend Dummy variable	CSR score	FIML estimation approach	Agency theory	Mixed (negative/positive)
Trihermanto and Nainggolan (2020)	527 Indonesian firms/2008–2015	Dividend payouts	CSR expenses	Ordinary least squares regression model	Bird in hand theory, Agency theory, Life-cycle theory	Positive
Benlemlih (2019)	22,839 US firm-year observations/1991–2012	Cash dividend payments	CSR scores	Univariate and multivariate regression models	Agency theory, Signaling theory, Life-cycle theory	Positive
Matos, Barros, and Sarmiento (2020)	Firms listed on the Stoxx Euro 600 index / 2000–2019	Dividend Dummy variable, Dividend payout ratio, Dividend yield	ESG scores	Panel logit regression	Agency theory, Signaling theory, Stakeholder theory	Positive
Saeed and Zamir (2021)	721 non-financial firms of India, China, Indonesia, Pakistan, Malaysia, Korea, Turkey, and Russia/2010–2018	Dividend payout ratio	CSR disclosure index	Multivariate regression model	Agency theory, Signaling theory, Life cycle theory	Negative
Sheikh et al. (2021)	215 firms listed on Pakistan Stock Exchange (PSX)/2010–2016	Cash dividend payout	CSR content analysis	Multivariate regression model	Signaling theory, Agency theory, Stewardship theory	Positive

This theoretical view asserts that the responsibilities of companies should expand beyond the shareholders' value maximization (Freeman 1984). In this sense, a high dividend payout strategy indicates that sustainability activities are far from using a company's resources; it rather shows a better allocation of it. Second, this approach strengthens companies' reputation and help them enhance the loyalty of the customers (Ambarish, John, and Williams 1987). Hence, it conveys an ethical approach in distributing wealth among those who have developed the company (He, Li, and Tang 2012).

In emerging markets with a distinct ownership structure and corporate governance measures, few studies have explored the relationship between CSP and dividend policy and most of them support a positive relationship between CSP and dividend policy (Oh and Park 2021; Saeed and Zamir 2021; Sheikh et al. 2021; Trihermanto and Naing-golan 2020). In a recent study, using panel data from 320 listed firms from the top 10 emerging countries for the years 2015–2019, Lucas (2020) confirmed that there is a positive impact of sustainability on dividends, indicating that all the interests of stakeholders and shareholders can be aligned. These results are important since in emerging markets, massive shareholdings are held by families, and concentrated owners, influencing short- and long-run decisions of companies. Thus it is vital to examine the influence of ownership structure, and corporate governance in analyzing CSP and dividend payout relationship. In addition, from the viewpoint of corporate governance, there is a possibility of increasing dividends as part of an effort to reduce agency costs in these markets.

### **2.1. Corporate sustainability performance and dividend payout policy**

Drawing on the agency and signaling theories, many academicians claim that companies are encouraged to create wealth in an ethical and sustainable way that keeps the interests of financial and non-financial stakeholders aligned. Furthermore, they assert that high dividend payout policy is expected to signal the market that expenditures on sustainability activities are far from exhausting company's cash and lead to adequate allocation of resources and shareholders' satisfaction (Benlemlih 2019). In this frame, most of the prior studies provide evidence of the value relevance of non-financial information and find positive results in the relationship between CSP and dividend policy. For instance, Rakotomavo (2012) identified a positive relationship between CSR scores and dividend payouts for 17,670 US firm-year observations from 1991 to 2007. Benlemlih (2019) indicated a positive relationship between high CSR levels, high dividends, and increased stability of dividend policies for a sample of 3040 US firms from 1991 to 2012. Villiers and Ma (2017) found a similar result for a sample of 1604 US companies for the years 2006–2008. Samet and Jarbouï (2017) analyzed the relationship between CSR performance and dividend policy for a sample of 397 companies from 17 European countries listed on the STOXX Europe 600 Index from 2009 to 2014 and detected that high CSR performance increases dividend payout levels. Similarly, Cheung, Hu, and Schwiebert (2018) reported that companies with high CSR scores provide high dividend, claiming that higher CSR scores increase earnings due to lower risk and better relationships with stakeholders. Almost all these studies argue that sustainability activities enhance earnings and give more competitive advantages to companies through better managing relationships with stakeholders.

On the other hand, companies enhance their sustainability aspects to increase legitimacy. The legitimacy theory claims that companies should adjust their policies and strategies to guarantee acceptance by society. Hence, firms are expected to conduct insightful sustainability activities and prepare attractive reports to show their dedication to the contract between themselves and their surrounding environment. In this sense, the positive relationship between CSP and dividend policy would ease the acceptance of companies by the stakeholders and society and make them appear as attractive investments targets for potential investors (Gnanaweera and Kunori 2018; Hardiningsih et al. 2020). Thus they behave responsibly to promote environmental, social and ethical values that enhance CSP. Thus we propose the following hypothesis:

H1: There is a positive relationship between CSP and dividend payout policy.

## ***2.2. The moderating role of corporate governance on the CSP and dividend policy relationship***

Incorporating good corporate governance improves corporate performance by ensuring the protection of shareholders' rights, reducing firm risk, enhancing corporate reputation, and raising shareholders' value (Birkey et al. 2016; Coskun and Sayilir 2012). Therefore, investors feel more comfortable investing in companies with a strong reputation and high rating in corporate governance (Saeed and Zamir 2021). With good corporate governance, it also becomes imperative to alleviate information asymmetry costs and provide non-financial information to enhance reputation, particularly in emerging markets (Boubakri, Cosset, and Guedhami 2005; Claessens and Yurtoglu 2013; Dhaliwal et al. 2011). Corporate governance is also an indispensable component of sustainability performance. Harjoto and Jo (2011) claim that the CSP is positively associated with good governance. In a recent article, Benlemlih (2019) confirm the positive impact of corporate governance on the CSP and dividend policy relationship for a sample of 3040 US firms. Hence, corporate governance score is likely to be positively related to dividend payout as better-governed companies offer stronger protection rights to shareholders by returning more cash to the investors (Mitton 2004). In contrast to the positive findings on the moderating role of corporate governance on the CSP and dividend policy relationship, there are relatively few studies claiming opposite argument. John, Knyazeva, and Knyazeva (2015) argue that companies that have poor corporate governance tend to make high dividend payments to remedy agency problem. Aydin and Cavdar (2016) find an insignificant result for the association of corporate governance and dividend policy for a sample of 19 firms listed on the Borsa Istanbul CGI. Although there are different parameters to measure corporate governance performance we focus on the corporate governance performance of BIST companies measured by the independent rating agencies approved by the Capital Markets Board of Turkey (CMB). We use BIST CGI to evaluate the CG performance of companies listed on BIST based on four pillars: shareholders, board of directors, stakeholders and public disclosures and transparency. Drawing on these facts, we propose the following hypothesis:

H2: Corporate governance positively moderates the relationship between CSP and dividend payout policy.

### ***2.3. Moderating role of ownership structure on the CSP and dividend payout policy relationship***

The relationship between CSP and ownership structure of companies has emerged as a new field of research after 1980s. Ownership structures affect decision-making on strategic matters, including sustainability and dividend policy (Oh, Chang, and Martynov 2011). This situation stems from the fact that the potential benefits of shareholders from payouts should be balanced with the expectations of stakeholders. Hence, one should understand the moderating effect of ownership structures, i.e. family, concentrated and institutional ownership, on the relationship of CSP and dividend policy.

#### ***2.3.1. The moderating role of family ownership***

Family companies generally operate differently than non-family companies based on their wealth preservation priorities (López-González, Martínez-Ferrero, and García-Meca 2019; Miller, Minichilli, and Corbetta 2013). Further, they may play a moderating role in influencing different relationships within companies due to the specific targets of controlling family such as enhancement of reputation, responsiveness to social issues (Anderson and Reeb 2003; Berrone et al. 2010; Kotlar and De Massis 2013; López-González, Martínez-Ferrero, and García-Meca 2019; Naldi et al. 2013; Van Gils et al. 2014). In that case, family ownership could be employed as an alternative governance mechanism to dividend payout due to reputation cost concerns of families. This argument might be based on the integrated actions of family-owned companies in terms of CSP, in particular the long-term relationship with investors and society (He, Li, and Tang 2012).

On the other hand, it is likely that family companies may prefer paying high dividends to shareholders to manage agency conflicts with minority shareholders and improve reputation (Pindado, Requejo, and de la Torre 2012; Setia-Atmaja 2010; Yoshikawa and Rasheed 2010). This is usually attributable to the socio-emotional wealth approach of companies (Berrone et al. 2010). In a recent study held by Sheikh et al. (2021) on a sample of 1480 observations from Pakistan for the period 2010–2016, the authors find that in family companies, high CSP activities decreases the propensity to pay dividends but increases the dividend payout in dividend-paying companies. They also show that the relationship between CSR and dividend policy in emerging markets is weaker than in developed markets. Given the preceding discussion, one may expect a positive association between CSP and dividend policy in family companies. Thus, we propose the following hypothesis:

H3a: Family ownership positively moderates the relationship between CSP and dividend payout policy.

#### ***2.3.2. The moderating role of ownership concentration***

In business environment, ownership concentration may have positive or negative effects on the relationship between CSP and dividend policy depending upon the perception of controlling and minority shareholders. Controlling shareholders usually support sustainability-related activities due to its positive implications in improving corporate



reputation, while minority shareholders view sustainability activities as expenditures, reducing firm value (Chiu and Sharfman 2011). These contrasting perspectives may exacerbate agency costs. Previous studies reveal inconclusive results on the relationship between CSP and ownership concentration. Some studies reported a positive relationship between CSP and ownership concentration (Crisóstomo, Freire, and Parente 2013; Prado-Lorenzo, Gallego-Alvarez, and Garcia-Sanchez 2009; Said, Zainuddin, and Haron 2009; Sufian and Zahan 2013), while other studies reported a negative relationship (Barnea and Rubin 2010; Clark and Hebb 2005; Li and Zhang 2010; López-Iturriaga and López-de-Foronda 2011; Rees and Rodionova 2012), asserting that sustainability actions create cost that decreases profits available for distribution to shareholders. Other research provides insignificant results (Halme and Huse 1997; Prado-Lorenzo, Gallego-Alvarez, and Garcia-Sanchez 2009; Roberts 1992). In a recent study held by Akben-Selçuk (2019) it is indicated that ownership concentration has a negative moderating role on the relationship of CSR and financial performance for non-financial companies listed on BIST 100 Index. Although the results are inconclusive, there is a general belief that concentrated owners may affect business decisions and limit sustainability activities to manage agency issues through dividend payments. Thus we propose the following hypothesis:

H3b: Ownership concentration positively moderates the relationship between CSP and dividend payout policy.

### ***2.3.3. The moderating role of institutional ownership***

In the last decades, institutions like pension funds, investment corporations have become key players in the emerging capital markets. They hold large shares of listed companies that give them power in decision-making on corporate policies. They actively monitor management activities and exert influence for information disclosure, including social and environmental ones (Ntim and Soobaroyen 2013; Nurleni, Bandang, and Amuriddin 2018). Institutional owners usually positively influence sustainability activities since they invest in the long run performance of a firm (Graves and Waddock 1994; Jo and Harjoto 2012; Oh, Chang, and Martynov 2011). They also aim to lessen external pressures and political costs by meeting the social and environmental expectations of stakeholders (Faller and zu Knyphausen-Aufseß 2018; Lamb and Butler 2018; Masud, Nurunnabi, and Bae 2018).

Some prior studies reported a positive relationship between CSP and institutional ownership (see, e.g. Harjoto and Jo 2011; Majeed, Aziz, and Saleem 2015 among others). They claim that institutional ownership serves as a substitute to mitigate agency issues that are related with dividend policy due to strong monitoring role of the owners (Chen, Hong, and Stein 2001; Shaheen and Ullah 2018; Truong and Heaney 2007). However, other studies indicate a negative association between institutional ownership and dividend policy (Bhattacharyya 2007; Ferreira, Massa, and Matos 2010; Maury and Pajuste 2002; Wen and Jia 2010). Saeed and Zamir (2021) claimed that the institutional ownership negatively moderates the nexus between CSR disclosures and dividend payout decisions in their study held on emerging markets for the years 2010–2018. Other studies assert that institutional owners in emerging markets are short-term oriented and they tend to get primarily short-term returns and

are less concerned with the sustainability activities of companies (Cox and Wicks 2011; Neubaum and Zahra 2006). Given that corporate governance mechanisms are not strong in emerging markets, investigating the moderating role of institutional ownership contributes to understanding how companies in these markets use CSP and dividend to signal their performance (Seth and Mahenthiran 2022). Thus we propose the following hypothesis:

H3c: Institutional ownership negatively moderates the relationship between CSP and dividend payout policy.

### 3. Data and methodology

#### 3.1. Data

Sustainability and corporate social responsibility have become hot topics in the Turkish capital markets since the beginning of 2010s. In particular, the increase in the number and expectations of investors that are sensitive to these issues, have raised awareness among the Turkish companies and regulatory authorities. Borsa Istanbul has also played a leading role in promoting sustainability among emerging markets, by being one of the five pioneering stock exchanges that signed Sustainable Stock Exchanges initiative launched in 2012 at Rio+20 Summit. Borsa Istanbul launched the BIST Sustainability Index (BIST SI) in November 2014, and the number of companies that satisfy BIST SI criteria has increased from 15 to 65 in 2022 (Borsa Istanbul 2022).

To test the hypotheses, we use data for a sample of 79 non-financial companies listed on Borsa Istanbul 100 Index for the years 2014–2020. We choose this sample since most of the companies in this sample are large and have shown significant progress in sustainability performance since 2014. In the sample, 12 companies show persistent inclusion on the BIST SI each year, while other companies are occasionally included in the BIST SI depending on their sustainability performance rated by the international rating agency, Vigeo-EIRIS. The final sample represents 553 firm-year observations. From 2014 to 2020, the performance of companies has been evaluated each year by Vigeo-EIRIS according to the minimum criteria set up on each sustainability pillar. During the sample period, companies did not get any scoring but were included into the BIST SI if they satisfy the minimum criteria.

**Table 2.** Distribution of firms across industries.

Name of Industry	No. of firms	Sample (%)
General industrials	15	19
Automobiles and parts	9	11
Construction and materials	7	9
Foods and beverages	7	9
Electronic and hardware equipment	5	6
General retailers	4	5
Travel and leisure	4	5
Telecommunications and media	4	5
Industrial metals and engineering	10	13
Chemicals and pharmaceuticals	6	8
Other industries	8	10
Total firms	79	100

**Table 3.** Distribution of firms in the sample across BIST SI and BIST CGI.

Year	Number of firms in BIST SI	Number of firms in BIST CGI
2014	10	19
2015	21	19
2016	33	17
2017	37	17
2018	41	17
2019	46	17
2020	50	17

Table 2 shows the distribution of companies across industries, while Table 3 presents the distribution of firms across BIST SI and BIST CGI for our sample. One may notice that the number of non-financial companies included in the BIST SI has increased 10–50 from 2014 to 2020.

The timeframe covers the years of 2014–2020 since the BIST SI was initially launched in 2014. We obtain the data from the following sources: (1) Borsa Istanbul, (2) Public Disclosure Platform, (3) Central Registry Agency, (4) company annual reports, (5) company webpages and (6) Eikon DataStream database. The data for the dependent variables, i.e. PDP, DPOR, DY are collected from the Eikon DataStream, while we use BIST SI membership as a proxy for the independent variable – corporate sustainability performance. Sustainability index membership is a widely used measure of corporate sustainability in the academia although there are other available measures. BIST SI checks public disclosures of companies on environmental, social and corporate governance matters. Companies listed on the BIST SI are required to meet a minimum threshold for each category. These categories cover several sustainability indicators including natural resources, environmental pollution, biodiversity, human rights, employee relations, shareholder rights, business ethics, board information and product safety.

To measure the corporate governance performance of Turkish companies, we used BIST Corporate Governance Index (BIST CGI) launched in 2007. BIST CGI evaluate the corporate governance performance of companies listed on BIST based on four pillars: shareholders, board of directors, stakeholders, and public disclosures and transparency. Rating process is mainly built on the CMB (2005) Corporate Governance Principles, and companies are assessed on a voluntary basis by the independent ratings agencies permitted by the CMB. Companies that get a rating of minimum at 7 over 10 on average, and minimum of 6.5 for each section are included in the BIST CGI.

### 3.2. Variable definition and measurement

The following section presents the definitions and measurements of the variables.

#### 3.2.1. Dependent variables

We use three dependent variables for dividend payout policy: (1) the probability of dividend payments (PDP) as a binary variable (Al-Rahahleh 2017; Byoun, Chang, and Kim 2016; Pucheta-Martínez, Bel-Oms, and Olcina-Sempere 2016; Ye et al. 2019), ‘1’ for the dividend-paying companies and ‘0’ for non-dividend paying ones, (2) dividend payout

ratio (DPOR), calculated as the ratio of cash dividend per share to net income (Attig et al. 2016; Lam, Sami, and Zhou 2012) and (3) dividend yield (DY), which is estimated by the ratio of cash dividend to the price per share (Byoun, Chang, and Kim 2016).

### 3.2.2. Independent variables

We used three sets of independent variables, namely corporate sustainability performance, corporate governance performance and ownership structure. CSP was proxied by the BIST SI membership, while corporate governance performance was proxied by the BIST CGI membership. Finally, ownership structure involves family ownership, ownership concentration and institutional ownership.

*Corporate sustainability performance (CSP)* is measured using a dummy variable that assumes '1' if the company is a member of the BIST SI and '0' otherwise (Aksoy et al. 2020; Ates 2019; Lassala, Apetrei, and Sapena 2017; Lourenço and Branco 2013).

*Corporate Governance Index (CGI)* shows the corporate governance performance of the companies listed on Borsa Istanbul. Following the previous studies (Ciftci et al. 2019; Ararat, Black, and Yurtoglu 2017; Kowalewski, Stetsyuk, and Talavera 2008; Setiawan and Phua 2013), we used BIST CGI as a proxy for corporate governance performance. If a company gets a BIST CGI rating of at least 7, then it is presented as '1' and '0' otherwise.

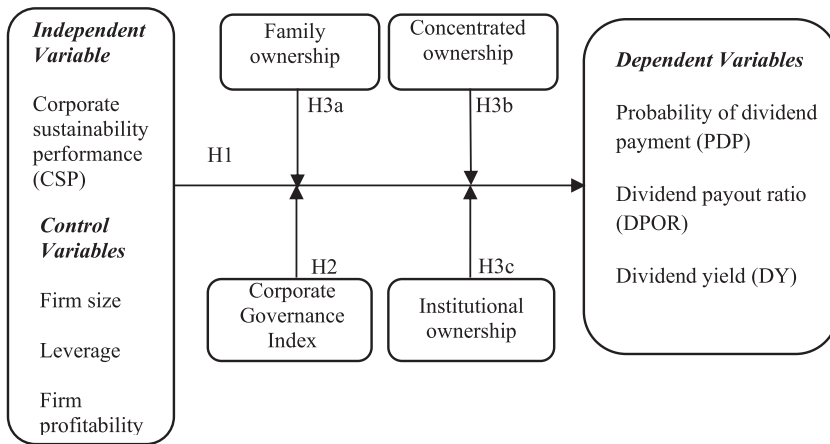
*Family Ownership (FamilyOwn)* is a variable that takes the value of '1' when the family, spouse and children hold at least 10% of the company's shares and '0' otherwise.

*Ownership Concentration (ConcentOwn)* shows that few individuals or groups holds the majority of the company's shares. It is defined by the percentage of a company's shares.

*Institutional Ownership (InstOwn)* is calculated as the percentage of institutional investors in total company's shares.

**Table 4.** The definitions and measurement of the variables.

Variable	Code	Measurement	Data source
<b>Dependent variables</b>			
The probability of dividend payments (dummy)	PDP	"1" for dividend-paying firms and '0' otherwise	DataStream
Dividend payout ratio	DPOR	Cash dividend to net income	DataStream
Dividend yield	DY	Cash dividend to stock price	DataStream
<b>Independent variables</b>			
Corporate sustainability performance	CSP	If a firm is a BIST SI member, it is '1' and '0' otherwise	Borsa Istanbul
Corporate governance index	CGI	If a firm has a rating of 7 over 10, it is '1' and '0' otherwise	Corporate Governance Association of Turkey
Family ownership	FamilyOwn	'1' if family, spouse, and children own at least 10% of the shares	Annual Reports
Concentrated ownership	ConcentOwn	% of concentrated ownership	Annual Reports
Institutional ownership	InstOwn	% of institutional ownership	Annual Reports
<b>Control variables</b>			
Firm size	FSize	Log of total assets	DataStream
Leverage	Lev	Total debt to total assets	DataStream
Firm profitability	ROA	Net income to total assets	DataStream



**Figure 1.** Conceptual framework.

### 3.2.3. Control variables

The following control variables are included into the analysis: firm size, leverage and firm profitability.

*Firm Size (FSize)* is calculated by taking the natural logarithm of total assets.

*Leverage (Lev)* is estimated as the ratio of total debt to total assets. *Firm Profitability (ROA)* is calculated as the ratio of net income to total assets.

Table 4 presents the definition and measurement of variables, and Figure 1 shows the conceptual framework.

### 3.3. Research methodology

To estimate the influence of CSP, corporate governance performance and ownership structure on dividend payout policy, the following regression models (Equations 1, 2, 3, 4, 5) are estimated. The year dummy variable and the industry dummy variable are also included in the model.

$$\begin{aligned}
 \text{Dividend Payment}_{i,t} = & \alpha + \beta_1 \text{CSP}_{i,t-1} + \beta_2 \text{CGI}_{i,t-1} + \beta_3 \text{FamilyOwn}_{i,t-1} \\
 & + \beta_4 \text{ConcentOwn}_{i,t-1} + \beta_5 \text{InstOwn}_{i,t-1} + \beta_6 \text{FSize}_{i,t-1} + \beta_7 \text{Lev}_{i,t-1} + \beta_8 \text{ROA}_{i,t-1} \\
 & + \sum_{j=1}^n \beta_j \text{YEAR}_{j,i,t} + \beta_k \text{INDUSTRY}_{k,i,t} + e_{i,t}
 \end{aligned} \tag{1}$$

To assess the role of corporate governance and whether the association between CSP and firm-level dividend payout varies with the corporate governance quality, we add CGI variable to our model in Equation (2). We also interact CSP with CGI. The idea is that corporate governance influences the firm-level dividend payout by controlling information asymmetry and agency cost that arises from the agency conflict between management and shareholders (Cormier, Lapointe-Antunes, and Magnan 2015; Zadeh 2020). We expect that the role of CSP as an external monitoring mechanism is amplified when other monitoring mechanisms such as governance quality are not as strong, thus

implying a substitution role.

$$\begin{aligned} \text{Dividend Payment}_{i,t} = & \alpha + \beta_1 \text{CSP}_{i,t-1} + \beta_2 \text{CGI}_{i,t-1} + \beta_3 (\text{CSP}_{i,t-1} * \text{CGI}_{i,t-1}) \\ & + \beta_4 \text{FamilyOwn}_{i,t-1} + \beta_5 \text{ConcentOwn}_{i,t-1} + \beta_6 \text{InstOwn}_{i,t-1} + \beta_7 \text{FSize}_{i,t-1} \\ & + \beta_8 \text{Lev}_{i,t-1} + \beta_9 \text{ROA}_{i,t-1} + \sum_{j=1}^n \beta_j \text{YEAR}_{j,i,t} + \sum_{k=1}^n \beta_k \text{INDUSTRY}_{k,i,t} + \beta_{i,t} \end{aligned} \quad (2)$$

$$\begin{aligned} \text{Dividend Payment}_{i,t} = & \alpha + \beta_1 \text{CSP}_{i,t-1} + \beta_2 \text{CGI}_{i,t-1} + \beta_3 \text{FamilyOwn}_{i,t-1} \\ & + \beta_4 (\text{CSP}_{i,t-1} * \text{FamilyOwn}_{i,t-1}) + \beta_5 \text{ConcentOwn}_{i,t-1} + \beta_6 \text{InstOwn}_{i,t-1} + \\ & \beta_7 \text{FSize}_{i,t-1} + \beta_8 \text{Lev}_{i,t-1} + \beta_9 \text{ROA}_{i,t-1} + \sum_{j=1}^n \beta_j \text{YEAR}_{j,i,t} + \sum_{k=1}^n \beta_k \text{INDUSTRY}_{k,i,t} + e_{i,t} \end{aligned} \quad (3)$$

$$\begin{aligned} \text{Dividend Payment}_{i,t} = & \alpha + \beta_1 \text{CSP}_{i,t-1} + \beta_2 \text{CGI}_{i,t-1} + \beta_3 \text{FamilyOwn}_{i,t-1} \\ & + \beta_4 \text{ConcentOwn}_{i,t-1} + \beta_5 (\text{CSP}_{i,t-1} * \text{ConcentOwn}_{i,t-1}) + \beta_6 \text{InstOwn}_{i,t-1} \\ & + \beta_7 \text{FSize}_{i,t-1} + \beta_8 \text{Lev}_{i,t-1} + \beta_9 \text{ROA}_{i,t-1} + \sum_{j=1}^n \beta_j \text{YEAR}_{j,i,t} \\ & + \sum_{k=1}^n \beta_k \text{INDUSTRY}_{k,i,t} + e_{i,t} \end{aligned} \quad (4)$$

$$\begin{aligned} \text{Dividend Payment}_{i,t} = & \alpha + \beta_1 \text{CSP}_{i,t-1} + \beta_2 \text{CGI}_{i,t-1} + \beta_3 \text{FamilyOwn}_{i,t-1} \\ & + \beta_4 \text{ConcentOwn}_{i,t-1} + \beta_5 \text{InstOwn}_{i,t-1} + \beta_6 (\text{CSP}_{i,t-1} * \text{InstOwn}_{i,t-1}) + \beta_7 \text{FSize}_{i,t-1} \\ & + \beta_8 \text{Lev}_{i,t-1} + \beta_9 \text{ROA}_{i,t-1} + \sum_{j=1}^n \beta_j \text{YEAR}_{j,i,t} + \sum_{k=1}^n \beta_k \text{INDUSTRY}_{k,i,t} + e_{i,t} \end{aligned} \quad (5)$$

Dividend Payment<sub>i,t</sub> is a proxy for the PDP, DPOR and DY. We apply panel logit and probit regression estimations when the outcome of the dependent variable is binary (PDP), i.e. either the company pays dividend – ‘1’ or does not pay dividend – ‘0’. On the other hand, we use the panel tobit regression model to measure the intensity of dividend payment using proxies DPOR and DY. The tobit model is designed to estimate linear relationships between the variables when there is either left- or right-censoring in the dependent variable. The dependent variables, i.e. dividend payout ratio and dividend yield, may either be zero or positive. Thus the data are censored. In the literature, any estimation of the dividend behaviour using data on individual firms that have this censoring characteristic, necessitates the use of the tobit model (Gyapong et al. 2021; Maddala 1987; Zadeh 2020).

If we consider  $i = 1, 2, \dots, 79$  firms as panels and time period  $t = 1, 2, \dots, 7$  years (2014–2020), then the most appropriate regression model for the DPOR and DY can

be expressed as in Equations (6) and (7):

$$y_{it}^* = x_{it}\beta + \alpha_i + \varepsilon_{it} \quad (6)$$

$$y_{it} = \begin{cases} = 0 & \text{if } y_{it}^* = 0 \\ = y_{it}^* & \text{if } y_{it}^* > 0 \end{cases} \quad (7)$$

Additionally, the corresponding logit and probit model for the dividend payment decision (PDP) can be expressed as in Equation (8):

$$y_{it} = \begin{cases} = 0 & \text{if } y_{it}^* = 0 \\ = 1 & \text{if } y_{it}^* > 0 \end{cases} \quad (8)$$

We include 1-year time-lagged values for regressors following prior studies (Al-Najjar and Kilincarslan 2016; Baker and Kilincarslan 2019) to address the endogeneity problem. The endogeneity problem occurs due to two reasons. First, reverse causality may occur when the dependent variable affects one or more independent variables rather than independent variables affecting the dependent variable. Second, the endogeneity may happen due to the correlation of independent variables with the error term because of the omission of explanatory variables in the regression (Wooldridge 2010). Hence, employing the time-lagged values of the given regressors addresses this problem (Ozdemir 2014).

## 4. Empirical results

### 4.1. Descriptive statistics

Table 5 represents the summary of the descriptive statistics. On average, the probability of dividend payout (PDP) is 56%, the dividend payout ratio is 25% and the dividend yield is 3%. The average CSP is approximately 40%, indicating that almost 40% of the companies listed on the BIST 100 Index have performed well for the sustainability activities. Around 22% of the companies in the sample comply with the corporate governance measures on average. The family ownership (FamilyOwn) mean value of 62% indicates the presence of more than 62% family companies in the sample. The institutional and concentrated ownerships account for 30% and 39%, respectively. The mean value for the firm size (FSize), financial leverage (Lev) and firm profitability (ROA) is 6.53, 39% and 8%, respectively.

Table 5 also shows the Pearson correlation matrix and variance inflation factors (VIF) for the variables to estimate multicollinearity. The correlation matrix suggests that CSP does not cut dividend payments, as it is positively correlated with the PDP and DPOR with a correlation coefficient of 0.12 and 0.10, respectively. Similarly, family companies seem to pay higher dividends as indicated by the positive correlation coefficient of 0.19 between family companies and the probability of dividend payment. Firm size is positively related to the dividend payments. According to a common rule of thumb, the correlation coefficient should be less than 0.80 (Gujarati 2003). The correlation matrix shows that none of the correlation coefficients among the explanatory variables is greater than 0.80. Further, the maximum VIF value is 2.19, which is less than 10. Thus it indicates no issue for multicollinearity.

**Table 5.** Descriptive statistics, Pearson correlation matrix and variance inflation factors (VIF).

Variables	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	VIF
(1) PDP	0.56	0.50	1.00											
(2) DPOR	0.25	0.32	0.69*	1.00										
(3) DY	0.03	0.04	0.41*	0.45*	1.00									
(4) CSP	0.40	0.49	0.12*	0.10*	0.11*	1.00								1.58
(5) CGI	0.22	0.42	0.07	0.19*	0.13*	0.24*	1.00							1.12
(6) FamilyOwn	0.62	0.48	0.17*	0.09*	0.05	-0.01	0.16*	1.00						1.61
(7) InstOwn	0.30	0.29	-0.05	-0.04	0.03	-0.04	-0.03	0.04	1.00					2.13
(8) ConcentOwn	0.39	0.29	0.18*	0.08	0.01	0.02	0.21*	0.56*	-0.07	1.00				2.19
(9) FSize	6.53	0.68	0.15*	0.11*	0.12*	0.56*	0.13*	0.16*	-0.01	0.11*	1.00			1.56
(10) Lev	0.39	1.81	0.01	0.02	0.01	0.08	-0.04	0.02	0.01	-0.01	0.07	1.00		1.01
(11) ROA	0.08	0.09	0.28*	0.24*	0.28*	0.01	0.04	0.04	0.03	0.06	-0.13*	0.01	1.00	1.04

\* $p < 0.05$



## 4.2. Estimation results

We use two approaches to analyze the relationship between CSP and dividend payout policy by considering the moderating role of corporate governance and ownership structure. First, we use panel logit and probit regression estimations in investigating the relationship between CSP and PDP. Then, we employ the panel tobit regression left-censored at zero as the distribution sample consists of continuous and discrete values in examining the relationship between CSP and the intensity of dividend payments. Table 6 shows the panel linear regression results of logit, probit and tobit models. The findings indicate that CSP is positive but insignificantly associated with the dividend payout policy, not supporting our first hypothesis (H1). This result suggests that CSP is an insignificant determinant of dividend policy for Turkish companies. Hence, the companies that invest in sustainability do not pay high dividends. Thus CSP is neither an influential factor in alleviating the agency issues nor conveys any positive signal to investors in the form of high dividend payments. These results are in line with the findings of previous studies (Cheung 2016; Cheung, Hu, and Schwiebert 2018; Kim and Jeon 2015).

Table 7 shows that CGI plays a significantly ( $p < 0.05$ ) positive role in moderating the association between CSP and dividend payout policy, supporting our second hypothesis (H2). This result is in line with agency theory since corporate governance mitigates agency conflicts between controlling and minority shareholders by high dividend payments. It also conveys a positive signal to the investors, leading them to have high confidence in the operations of firms. Consequently, good corporate governance enhances the

**Table 6.** Panel linear relationship results.

	Logit PDP	Probit PDP	Tobit DPOR	Tobit DY
CSP	0.490 (0.580)	0.293 (0.332)	0.044 (0.063)	0.012 (0.008)
CGI	1.351 (0.991)	0.792 (0.576)	0.253** (0.120)	0.011 (0.013)
FamilyOwn	1.142 (0.868)	0.636 (0.504)	0.276** (0.109)	0.020 (0.013)
ConcentOwn	3.498** (1.658)	2.004** (0.939)	0.107 (0.173)	0.040* (0.020)
InstOwn	2.139 (1.632)	1.238 (0.926)	0.102 (0.191)	0.052** (0.022)
FSize	1.196* (0.674)	0.672* (0.391)	0.133* (0.076)	0.022** (0.009)
Lev	-0.009 (0.131)	-0.004 (0.077)	-0.004 (0.009)	0.001 (0.001)
ROA	4.571** (2.274)	2.498** (1.167)	0.769*** (0.289)	0.132*** (0.033)
Cons	-12.217*** (4.730)	-6.950** (2.735)	-1.222** (0.535)	-0.189*** (0.060)
YEAR	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
No. of Observations	474	474	474	474
Wald $\chi^2$	28.11	27.79	43.88***	56.85***
Rho value	0.784	0.797	0.614	0.523
LR Test	120.79***	131.01***	131.73***	100.16***

Standard errors are in parentheses.

\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

**Table 7.** CGI as a moderating variable between CSP and dividend policy.

	Logit PDP	Probit PDP	Tobit DPOR	Tobit DY
CSP	-0.040 (0.621)	-0.024 (0.358)	-0.048 (0.069)	0.010 (0.009)
CGI	-0.405 (1.199)	-0.188 (0.686)	0.029 (0.137)	0.007 (0.015)
CSP*CGI	2.868** (1.233)	1.604** (0.685)	0.361*** (0.119)	0.007 (0.015)
FamilyOwn	1.090 (0.853)	0.607 (0.493)	0.261** (0.106)	0.020 (0.013)
ConcentOwn	3.858** (1.669)	2.220** (0.941)	0.109 (0.170)	0.040* (0.020)
InstOwn	2.767* (1.630)	1.613* (0.928)	0.123 (0.188)	0.052** (0.022)
FSize	1.142* (0.654)	0.643* (0.381)	0.147** (0.074)	0.022** (0.009)
Lev	-0.005 (0.126)	-0.002 (0.074)	-0.003 (0.009)	0.001 (0.001)
ROA	4.933** (2.340)	2.657** (1.180)	0.794*** (0.289)	0.132*** (0.033)
Cons	-12.152*** (4.581)	-6.927*** (2.659)	-1.285** (0.520)	-0.190*** (0.059)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Observations	474	474	474	474
Wald $\chi^2$	31.28	31.36	54.15***	57.05***
Rho value	0.774	0.789	0.601	0.522
LR test	118.33***	126.80***	127.93***	99.23***

Standard errors are in parentheses.

\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

capabilities of companies in paying high dividends. This findings also indicates that individual pillars of sustainability is important for the dividend policy. This result endorses prior studies (Aydin and Cavdar 2016; Baker and Jabbouri 2016; Benlemlih 2019; Birkey et al. 2016; Cheng, Lin, and Wong 2016; Mitton 2004; Saeed and Zamir 2021).

Table 8 gives the results of family ownership as a moderating variable on the association of CSP and dividend payout policy. The panel logit and probit regression estimations indicate that family ownership is positive but insignificantly moderating the relationship between CSP and dividend payout policy, while tobit regression estimations indicate that family ownership has a significant ( $p < 0.01$  and  $p < 0.10$ ) and positive role in moderating this relationship. This result supports our third hypothesis (H3a). Family-owned companies are more inclined to overcome agency conflicts with minority shareholders and thus, pay high dividends. They are more concerned with long-term objectives such as reputation, responsiveness to social issues. Hence, the argument that family companies are responsible stewards and respond to all stakeholders appears to be supportable. This finding endorses the results of the prior studies (Pindado, Requejo, and de la Torre 2012; Rodrigues, Felicio, and Matos 2020; Setia-Atmaja 2010; Yoshikawa and Rasheed 2010).

The correlation coefficient of the interaction term (CSP\* FamilyOwn) reveals a different piece of evidence. It is noteworthy that the moderating role of FamilyOwn does not influence the probability of dividend payment but affects dividend payout ratio. Hence, among those companies that pay dividends, firms with high FamilyOwn

**Table 8.** Family ownership as a moderating variable between CSP and dividend policy.

	Logit PDP	Probit PDP	Tobit DPOR	Tobit DY
CSP	-0.237 (0.823)	-0.070 (0.468)	-0.137 (0.090)	-0.003 (0.011)
CGI	1.294 (1.007)	0.769 (0.584)	0.254** (0.123)	0.010 (0.013)
FamilyOwn	0.633 (0.969)	0.376 (0.563)	0.146 (0.119)	0.010 (0.014)
CSP*FamilyOwn	1.274 (0.989)	0.627 (0.556)	0.289*** (0.105)	0.023* (0.013)
ConcentOwn	3.762** (1.717)	2.108** (0.963)	0.079 (0.173)	0.040* (0.021)
InstOwn	2.332 (1.678)	1.298 (0.940)	0.060 (0.193)	0.051** (0.023)
FSize	1.217* (0.688)	0.688* (0.399)	0.139* (0.078)	0.022** (0.009)
Lev	-0.013 (0.135)	-0.006 (0.079)	-0.004 (0.009)	0.001 (0.001)
ROA	4.269* (2.261)	2.382** (1.175)	0.736*** (0.285)	0.129*** (0.033)
Cons	-12.274** (4.832)	-6.978** (2.789)	-1.167** (0.547)	-0.189*** (0.061)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Observations	474	474	474	474
Wald $\chi^2$	28.45	28.05	50.32***	58.47***
Rho value	0.794	0.805	0.639	0.545
LR Test	121.92***	131.56***	139.67***	102.90***

Standard errors are in parentheses.

\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

tend to pay more dividends out of their earnings. These results are consistent with the findings of previous studies (Ayu and Viverita 2020; Miah and Bhuiyan 2022; Miller et al. 2021).

Table 9 indicates that ownership concentration is positive and significantly ( $p < 0.10$ ) moderates the relationship between CSP and dividend payout policy only for the tobit model, where the dependent variable is the DPOR. However, it is insignificant in affecting the relationship between CSP and dividend payout policy in other models, not supporting the fourth hypothesis (H3b). One plausible reason may be that concentrated owners allocate residual income in new projects and are less willing to encourage companies to distribute net income as dividends. They may also be interested in investing in sustainability activities to gain reputation and easily access to external financing for the long run. Thus ownership concentration does not significantly moderate the relationship between CSP and dividend policy. The results are in line with the prior studies (Bradford, Chen, and Zhu 2013; Lam, Sami, and Zhou 2012; Saeed and Zamir 2021; Sheikh et al. 2021).

Table 10 shows that institutional ownership has a negative and significant effect ( $p < 0.05$ ) in moderating the relationship between CSP and DPOR, supporting the fifth hypothesis (H3c). This result suggests that institutional ownership weakens the association between CSP and dividend payout. However, the interaction coefficient is negative but insignificant in all other proxies of dividends. One likely reason may be that institutional owners are interested in short-term gains in the form of dividends rather than

**Table 9.** Concentrated ownership as a moderating variable between CSP and dividend policy.

	Logit PDP	Probit PDP	Tobit DPOR	Tobit DY
CSP	0.262 (0.844)	0.168 (0.490)	-0.088 (0.096)	0.016 (0.011)
CGI	1.349 (0.996)	0.792 (0.578)	0.254** (0.122)	0.011 (0.013)
FamilyOwn	1.136 (0.869)	0.632 (0.505)	0.265** (0.110)	0.021 (0.013)
ConcentOwn	3.233* (1.797)	1.862* (1.022)	-0.012 (0.184)	0.044** (0.022)
CSP*ConcentOwn	0.594 (1.581)	0.319 (0.912)	0.308* (0.169)	-0.011 (0.021)
InstOwn	2.071 (1.649)	1.198 (0.937)	0.062 (0.194)	0.052** (0.022)
FSize	1.219* (0.680)	0.686* (0.395)	0.145* (0.078)	0.021** (0.009)
Lev	-0.009 (0.132)	-0.004 (0.077)	-0.004 (0.009)	0.001 (0.001)
ROA	4.568** (2.275)	2.497** (1.168)	0.765*** (0.288)	0.132*** (0.033)
Cons	-12.249*** (4.751)	-6.969** (2.750)	-1.232** (0.543)	-0.189*** (0.059)
YEAR	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
Observations	474	474	474	474
Wald X <sup>2</sup>	28.22	27.88	46.67***	57.15***
Rho Value	0.789	0.801	0.628	0.522
LR Test	120.65***	130.64***	135.73***	99.04***

Standard errors are in parentheses.

\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .**Table 10.** Institutional ownership as a moderating variable between CSP and dividend policy.

	Logit PDP	Probit PDP	Tobit DPOR	Tobit DY
CSP	1.097 (0.801)	0.618 (0.450)	0.159* (0.085)	0.012 (0.011)
CGI	1.380 (1.001)	0.806 (0.581)	0.263** (0.121)	0.011 (0.013)
FamilyOwn	1.115 (0.872)	0.618 (0.508)	0.260** (0.110)	0.020 (0.013)
ConcentOwn	3.581** (1.670)	2.060** (0.948)	0.098 (0.173)	0.040* (0.020)
InstOwn	2.842 (1.760)	1.634 (1.004)	0.187 (0.197)	0.052** (0.023)
CSP*InstOwn	-1.778 (1.609)	-0.985 (0.918)	-0.338** (0.169)	-0.002 (0.021)
FSize	1.211* (0.683)	0.685* (0.396)	0.134* (0.077)	0.022** (0.009)
Lev	-0.008 (0.132)	-0.003 (0.078)	-0.003 (0.009)	0.001 (0.001)
ROA	4.514** (2.270)	2.481** (1.166)	0.763*** (0.287)	0.132*** (0.033)
Cons	-12.619*** (4.807)	-7.199*** (2.781)	-1.257** (0.543)	-0.190*** (0.060)
YEAR	Yes	Yes	Yes	Yes
INDUSTRY	Yes	Yes	Yes	Yes
Observations	474	474	474	474
Wald X <sup>2</sup>	28.17	27.73	45.88***	57.43***
Rho Value	0.791	0.803	0.635	0.519
LR Test	118.60***	128.28***	133.53***	94.45***

Standard errors are in parentheses.

\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

**Table 11.** Summary of hypotheses.

Hypothesis	Variable Codes	Expected sign	Actual sign	Level of support
<b>Independent variables</b>				
<i>H1. There is a positive relationship between CSP and dividend payout policy.</i>	CSP	(+)	(+)	No
<i>H2: Corporate governance positively moderates the relationship between CSP and dividend payout policy.</i>	CSP*CGI	(+)	(+)***	Yes
<i>H3a. Family ownership positively moderates the relationship between CSP and dividend payout policy.</i>	CSP*FamilyOwn	(+)	(+)***	Yes
<i>H3b. Concentrated ownership positively moderates the relationship between CSP and dividend payout policy.</i>	CSP*ConcentOwn	(+)	(+)*	Yes
<i>H3c. Institutional ownership negatively moderates the relationship between CSP and dividend payout policy.</i>	CSP*InstOwn	(-)	(-)*	Yes
<b>Control variables</b>				
Firm size	FSize	(+)	(+)**	
Leverage	Lev	(-)	(-)	
Return on asset	ROA	(+)	(+)***	

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , & \* $p < 0.10$ .

in achieving long-run non-financial goals through investing in sustainability activities. Another reason may be that an improvement in corporate governance through institutional monitoring and high CSP collectively reduces the role of dividends in mitigating information asymmetry. This result endorses the findings of prior studies (Ferreira, Massa, and Matos 2010; Maury and Pajuste 2002; Saeed and Zamir 2021; Wen and Jia 2010).

Among the control variables, only firm size (FSize) and firm profitability (ROA) are statistically significant and positively related to the dividend payout policy. Firms that generate more profit are likely to pay dividends, ensuring gains for investors. This result is similar to the findings of the prior studies (Benlemlih 2019; Heal 2005; Michaely and Roberts 2012; Saeed and Zamir 2021). On the other side, large firms pay more dividend compared to small and medium ones since they are more mature and have easy access to external funds to finance their operations at low cost. This result is consistent with the findings of previous studies (Matos, Barros, and Sarmento 2020; Saeed and Zamir 2021). Finally, we find a negative but insignificant effect of leverage on the relationship between CSP and dividend payout policy. Table 11 reports the summary of the hypotheses.

#### 4.3. Robustness checks

The decision to pay dividends (PDP) and the intensity of dividend payment (DPOR and DY) should be modelled separately. If the decision to pay dividends is not random and influences the dividend intensity, then modeling of the latter decision may suffer from the sample selection bias or self-selection problem (Heckman 1979). The Heckman self-selection model treats zero values and positive values separately in two equations: (1) selection equation for the probability of paying dividends and (2) and the main equation for the positive values of the dividend payout conditioned on decision to pay.

For the robustness analysis, following previous studies (Gyapong et al. 2021; Sheikh et al. 2021; Zadeh 2020), we adopted Heckman model to handle the potential sample selection biases. In the first step, we model the decision to have payout. In the second

step, we model the decision to determine the amount of payout conditional on non-zero payouts. When we look at the results, we see that the coefficient of Lambda is negative and insignificant, and the null hypothesis of 'Lambda = 0' is accepted. The results are unreported in tables but they will be given upon request. No evidence was found that sample selection bias existed. As a result, the decisions of having payout or not and the density of dividend payment can be estimated separately. The results show that even after we control for self-selection bias by the Heckman model, our conclusions regarding H1 and H2, H3a and H3b remain still valid for DPOR and DY.

## 5. Conclusion and discussion

The exploration of the relationship between corporate sustainability performance and dividend policy may increase the competitive power of companies and enhance their reputation in the eyes of shareholders and stakeholders. In this sense, dividend policy may act in disciplining the use of free cash flows and may signal the market that expenditures on sustainability activities are far from exhausting company's cash and lead to adequate allocation of resources. This refers to a positive association between corporate sustainability performance and dividend payout. However, ownership structure may have different effects on this relationship by impartially satisfying the interests of all stakeholders or prioritizing the specific stakeholders while neglecting others.

Building upon these arguments, the present study investigates how corporate governance and ownership structure moderate the association between corporate sustainability performance and dividend payout policy in the Turkish capital markets. Unlike most of the existing studies, this study analyzes both the decision to pay dividends and the intensity of dividend payments. We use balanced panel data consisting of 553 firm-year observations from 79 non-financial companies listed on Borsa Istanbul for the years 2014–2020. The corporate sustainability performance is measured by a proxy of having a membership in the Borsa Istanbul Sustainability Index.

Using robust methodology and controlling for sample selection bias, we find that greater CSP activities does not significantly increase neither the probability of dividend payment nor the dividend payment density. Thus sustainability activities are not influential in alleviating agency issues between controlling and minority shareholders or instilling confidence among investors. The findings also show that corporate governance as a pillar of sustainability has a significant positive moderating effect on the relationship between sustainability performance and dividend payout. This result indicates the importance of corporate governance in mitigating agency problems by encouraging companies to engage in sustainability matters and pay high dividends.

Further, the results suggest that family ownership has a positive and significant moderating effect on the relationship between corporate sustainability performance and dividend payout policy, showing that dividend payments in family companies are in proportion to the sustainability activities. This finding shows that family companies are interested in paying high dividends to mitigate agency issues with the minority shareholders and convey a positive signal reposing confidence among investors. Hence, family companies satisfy implicit and explicit claims of the stakeholders. Thus they are equally concerned with non-financial objectives such as positive image and reputation that make

them more resilient and competitive, and financial objectives, being profitable that make them capable of paying high dividends.

Ownership concentration has no moderating effect on the corporate sustainability performance and dividend payout policy relationship. This could be attributable to the inclination of concentrated owners towards investing more in growth projects and sustainability activities but without having much preference in distributing the residual income as dividends. Thus it does not help mitigate agency problems and send a weak signal to investors. Finally, institutional owners have a negative moderating impact on the corporate sustainability performance and dividend policy relationship in terms of dividend payment intensity, while this moderating effect is insignificant in other dividend proxies. This finding indicates that institutional owners are more inclined towards getting dividends rather than investing in sustainability activities.

### **5.1. Implications of the study**

The results have several managerial and policy implications and provide valuable insights for companies and policymakers to enhance their approach and guidelines on sustainability activities and dividend policy in Turkey, and in other emerging markets. First, the positive but insignificant relationship between corporate sustainability performance and dividend payout policy suggests that Turkish companies should focus more on sustainability matters. In this frame, an understanding that signaling via corporate sustainability performance and dividends are complementary may help relieve the pressure on emerging market companies that try to satisfy the broader mission of stakeholder relationships. Furthermore, the regulatory authorities may have the effect of accelerating the adaption of environmental and social aspects of corporate sustainability.

Second, the positive moderation of the corporate sustainability performance and dividend payout policy relationship by corporate governance and family ownership implies that the inclusion of corporate governance measures helps preserve the rights of minority shareholders in the Turkish companies, mitigate agency problems and convey positive signals to external stakeholders. Thus companies with moderate-level of CSP should ensure more effective corporate governance mechanisms to alleviate concerns about self-serving managerial behavior on dividend policy. Another implication is that governance structure in family-owned companies in the aspects of CSP and long-term relationships with investors may facilitate the efficiency of family-owned firms.

Finally, the findings may assist policymakers in identifying how family ownership and institutional ownership that are pervasive in emerging markets affect the sustainability activities of companies and dividend payout policies and may lead them to reinforce existing guidelines, and to establish new ones for the welfare of internal and external stakeholders in the capital markets. In this frame, policymakers may take measures to encourage companies in enhancing their CSP in conjunction with corporate dividend payout policies.

### **5.2. Limitations and future research**

We acknowledge that this study has some limitations. First, the present study uses only cash dividends to explore the moderating role of corporate governance and ownership

structure on the relationship between sustainability performance and dividend payout policy and it is held for a single emerging market, i.e. Turkey. Future research may consider exploring other dividend payment options, i.e. stock repurchase, stock dividend and stock splits, by covering other emerging markets with similar institutional settings, to generalize the findings. Second, this research employs only sustainability index inclusion as a proxy to hold the analyses as there is few available data for the ESG scores of non-financial companies listed on Borsa Istanbul in institutional databases. Future studies may use other sustainability measurements and make cross-country analyses to validate the results as increasing number of companies have been taking steps to get rating for the sustainability performance. Third, we did not analyze the relationship between CSP and dividend payout stability since the sample data spans only seven years. Future works may extend the data coverage and examine this relationship. Finally, future research may employ a survey methodology to obtain primary data on the behavior of controlling shareholders, i.e. family, concentrated and institutional owners, in evaluating the moderating effect of ownership structure on the relationship between sustainability performance and dividend policy from the perspective of behavioral finance.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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