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RESEARCH ARTICLE

The Effect of Board Independence on the Relationship between Ownership Structure and Corporate Sustainability Performance Disclosure

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Abstract

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Sustainability is essential in human societies, and companies play an important role in recognizing and properly implementing corporate sustainability, including social, management and environmental dimensions. Mainly, in different companies, sustainability originates from the decisions of the managers of that organization or members of the board of directors and, in general, the ownership structure. The purpose of this research is to investigate the effect of the ownership structure of companies on corporate sustainability performance disclosure with the moderating role of the independent board of directors. For this purpose, 111 companies listed on the Tehran Stock Exchange from 2016 to 2020 have been used as a case study. In this research, multiple regression based on panel data was used. Examining the hypotheses indicates that the structure of family ownership, major ownership and state ownership is effective on the corporate sustainability performance disclosure in social, governance and environmental dimensions. Also, the results show that the independent board of directors adjusts the relationship between the family ownership structure and major shareholders by disclosing the sustainability performance of the companies in environmental, social and governance dimensions. In case, the independent board of directors had no significant moderating effect on the relationship between state ownership and corporate sustainability performance disclosure.

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1. Introduction

Many changes have been made in recent decades regarding companies' disclosure of non-financial worldwide information. This has caused the formation of many concepts related to economic issues, including environmental, social and human concerns (Manes-Rossi et al., 2018). The challenges in economic, social and human development and its combination with environmental development have raised a new paradigm called sustainability and sustainable development, which emphasizes intergenerational and intragenerational justice and social justice, and environmental protection is one of its principal axes (Azadnia et al., 2017). Thus, Increasing the attention of many interest groups on how companies deal with sustainability issues has created a lot of pressure on companies to adopt sustainability reporting practices and has led companies to disclose their environmental and social performance through non-financial reporting (El-Bassiouny and El-Bassiouny, 2018). Therefore, the disclosure of information related to the activities of companies is one of the demands of the stakeholders (Al Amosh and Mansor, 2021), and the issues related to the disclosure of corporate sustainability in environmental, social and governance dimensions have received the attention of the stakeholders. It will give companies this great opportunity to gain the trust of shareholders and increase legitimacy (Khatib et al., 2021). According to the agency theory, the separation of ownership from management has caused conflicts of interest between managers and owners, which has led to agency problems. Besides, the ownership structure, in terms of internal and external shareholders, has characteristics that can affect the affairs of companies and determine the level of agency problems between shareholders and managers (Barzegar et al., 2016). The ownership structure of the companies, the legislative and economic system of the country, as well as the timely disclosure of information are among the factors that affect the relationship between voluntary disclosure of information and the cost of equity capital (Samaha and Dahawy, 2011). Due to the increase in the quality level of disclosure and transparency in companies, the presence of the government in the ownership structure of companies can be useful for other stakeholders. (Al Amosh and Khatib, 2021). Previous studies have raised issues regarding the relationship between government ownership factors and disclosure, but the issue of its relationship with the quality of sustainability disclosure has not been investigated. Khan et al. (2021) have also stated that the presence of government ownership in companies leads to pressure on the board of directors of those companies to consider sustainability issues, including sustainability in environmental, social, human and governance dimensions. Therefore, it will increase companies' legitimacy from the perspective of society (Khan et al., 2013). They also found that majority ownership enables management to dominate the company's decisions and leads to limit participation in social activities to reduce costs which will negatively affect the disclosure of social responsibility. On the other hand, family ownership helps control management behaviour and reduces the manager's authority (Bansal et al., 2018). Lagasio and Cucari (2019) argue that there are still doubts about the effect of family ownership on corporate sustainability disclosure. Chau and Gray (2010) report that family ownership significantly affects voluntary disclosure practices and helps increase transparency and reduce information asymmetry. Jalila and Devi (2012) and Rees and Rodionova (2015) believe that companies with more family ownership do not have a strong incentive to disclose information which has a negative effect on the disclosure level of companies.

On the other hand, the board of directors' independence is needed to strengthen proper governance in companies, where decisions are made without bias or personal interests. Moreover, independent boards of directors also have an important supervisory role in the performance of companies (Fuzi et al., 2016). In addition, independent boards of directors also limit the negative effect of ownership on disclosure methods, such as family ownership (Chau and Gray, 2010). Therefore, it leads to an

increase in the transparency and trust of the shareholders and guarantees that the demands of the stakeholders are taken into consideration. According to the legitimacy perspective, the board's independence strengthens social responsibility disclosure and increases the company's sustainable activities (Fernández-Gago et al., 2018). Thus, it is expected that independent boards of directors are more willing to meet the demands of shareholders and consider methods and tools that guarantee the company's legitimacy in the environment in which it operates. Theoretical foundations, according to the research by Zaid et al. (2020), indicate that the independence of the board plays an essential moderating role in promoting corporate social responsibility because its positive effect on foreign ownership and government ownership is reflected in companies' disclosure methods. Cucari et al. (2018) have stated that companies with a more independent board structure invest more in sustainability activities and are more involved in corporate sustainability activities. Considering the theoretical foundations presented in this research, the moderating role of the independent board of directors in the relationship between the ownership structure and sustainability disclosure performance is investigated. Therefore, the main questions of the current research are presented as follows: Does the ownership structure affect the disclosure of governance, social, and environmental performance? If there is a relationship between the ownership structure and the disclosure of governance, social and environmental performance, does the independent board of directors play a moderating role or not?

2. Theoretical Foundations

In recent years, most companies globally have provided information related to social and environmental activities to other stakeholders. The management of companies has recognized that stakeholders are not only interested in financial information but also seek social, environmental and ethical information about companies; Therefore, companies try to identify their stakeholders and focus on their sustainability information concerning the needs of these stakeholders (Galbreath, 2012). The ongoing concern about the impact of sustainability performance dimensions on the capacity of the business has encouraged most companies to manage their sustainability level (Adams and Frost, 2008); As a sequence, involving more companies to voluntarily engage in governance, social, ethical and environmental activities and clarify it.

Studies have shown that sustainability performance can positively affect a company's image. This process not only helps to support stakeholders but also these activities can be used as a tool for evaluating companies to assess the possible evaluations of activities that they can face in society and the environment (Rao and Holt, 2005); Thus, companies must pay attention to sustainability activities and clarify it. Companies can raise their corporate image and increase their credibility by informing their stakeholders about the sustainability activities under their supervision. Companies that actively participate in sustainability and report it has competitive advantages because they can gain their stakeholders' trust and goodwill (Kolk and Pinkse, 2010) and have loyalty. There are more brands among customers, which increases customer satisfaction. In addition, such companies can attract and retain talented and privileged employees, and in the same way, it causes employees to work with employers with a good corporate reputation (Adams and Zutshi, 2004).

According to the stakeholder theory, organizations more actively apply sustainability measures to stakeholders who have more influence. This theory predicts that managers engage in sustainability actions to fulfil their spiritual, ethical and social obligations to their stakeholders and strategically achieve the company's goals for their stakeholders. Expanding on traditional stakeholder theory, Jensen (2002) presents intellectual stakeholder theory (enlightened value maximization). This theory suggests that managers should make decisions that include the interests of all company stakeholders. When corporate managers serve stakeholders, there must be a trade-off to reduce conflict between

stakeholders and important areas (Hillman et al., 2009). Freeman's stakeholder theory (1984) and Jensen's intellectual maximization theory (2002) recognize the maximization of sustainable performance and the company's long-term value as a measure to balance the interests of all stakeholders. On the one hand, non-financial sustainability activities cause cooperation between the maximization of shareholders' wealth and the maximization of the welfare of beneficiaries, and on the other hand, it causes conflict between them. Overall, this theory states that sustainability activities and performance through fulfilling social responsibilities, addressing environmental obligations (Clarkson et al., 2011) and improving their reputation (Weber, 2008) increase the value of the company in the long term. However, these sustainability activities may require the allocation of significant resources, which may conflict with the goals of maximizing shareholder wealth, and management may be forced to invest solely in sustainability measures that only lead to long-term financial sustainability.

Legitimacy theory emphasizes that organizations are committed to socially desirable actions. According to the literature, corporate sustainability performance and its disclosure is a way for the organization to increase credibility, efficiency, and legitimacy and increase relations with stakeholders (Rodríguez Bolívar et al., 2015). This is an essential tool to achieve organizational legitimacy that can influence society's expectations and perceptions. Sustainability performance disclosure can be considered a dialogue between the organization and its stakeholders. By sharing their activities with stakeholders, organizations control their legitimacy and demonstrate that they behave appropriately and meet the expectations and needs of stakeholders. However, if organizations cannot show that their activities are compatible with social values, even if they are in accordance with society's expectations, their legitimacy will be threatened (Michelon and Parbonetti, 2012).

Signalling theory helps explain managerial motivations to achieve financial and non-financial dimensions of corporate sustainability performance and investors' reactions to sustainability performance information (Grinblatt and Hwang, 1989). This theory states that companies disclose "good news" through mandatory financial reporting for the financial dimension of their sustainability performance and voluntary reporting for the non-financial dimensions of their sustainability performance to differentiate themselves from companies with lower sustainability performance show distinct Voluntary reports by companies may serve as a supplement to information signals about expected future financial performance. Instead, signalling mechanisms can be replaced by providing a negative relationship between the likelihood of voluntary disclosure and the use of these signals (Grinblatt and Hwang, 1989). This theory encourages business organizations to send a single and aligned signal to achieve financial and non-financial dimensions of corporate sustainability performance to communicate with all stakeholders (including supply chain partners) about synergy, integration and dependence on different management resources (Connelly et al., 2011).

Dealing with corporate social responsibility (CSR) and corporate sustainability (CS) can be described as an overall goal of the organization to align various interests (shareholders and stakeholders) with the long-term interests of society as a whole. Addressing these activities creates value for suppliers, employees, customers and other stakeholders (Thomsen and Conyon, 2012). Participation in sustainability and social responsibility activities can increase organizational competitiveness and create social and economic value in the organisation's operating environment (Porter and Kramer, 2011). In response to increasing pressures for companies to act responsibly, incentives to disclose sustainability information have increased to demonstrate their corporate sustainability involvement. Companies involved in sustainability need to realize that sustainability brings them benefits, not in the short term, but in the long term.

2.1 Literature review and hypothesis development

Alnabsha et al. (2018) showed a significant relationship between the characteristics of the board

of directors and corporate governance, and the overall level of disclosure of the company is effective in the mentioned relationship. Babaei et al. (2021) stated that the financial dimension of companies' sustainability significantly affects the company's value. This effect was positive, and also the non-financial dimension of sustainability has a significant and positive effect on the value has a company and also companies with a higher disclosure score; the effect of the independent variable on the dependent variable is greater, and the effect of those variables on each other is greater with the presence of small and large companies. In research, Lin et al. (2022) studied the relationship between the level of sustainability of companies (environmental, social and human) and their performance with the moderating influence of narcissism and pride. The results of their research generally indicated that corporate governance has a significant and positive effect on the company's performance. Al Amosh and Khatib (2021) believe that ownership by foreign shareholders and government ownership has played an important role in influencing the ownership structure on sustainability performance in governance, environmental and social dimensions. Also, the independent board of directors has significantly and effectively improved the relationship between those two variables. Furthermore, institutional shareholders and governance ownership have had a negative effect on the governance, environmental and social sustainability performance of the sample companies mentioned in the research. Malekian et al. (2019) concluded that the ratio of non-obligatory members, the ratio of ownership of the board of directors, the ratio of the presence of women on the board of directors, as well as the level of stability among the members of the board of directors have a positive effect. It has a level of reporting on environmental, social and corporate governance issues.

2.1.1 State ownership and corporate sustainability performance disclosure

In theory, companies with a large percentage of shares owned by the government are expected to be more motivated to participate in sustainability and social responsibility activities and disclose more information to increase their legitimacy (Garde Sánchez et al., 2017). They argue: the role of the state, representing the interests of society, contributing to social welfare, protect the environment and transparent actions to legitimize. It is to forgive its actions." A report by Rigringsconsult (2016) stated that society owns state-owned enterprises (SOEs), increasing the demand for information about their performance. Even if public companies work in a competitive environment, they can affect society, which means they should promote sustainability practices in relation to their stakeholders (e.g., citizens). Public enterprises should consider not only the collective view of their target society but also the specific opinions and goals of specific stakeholders regarding social responsibility and sustainability issues (Deegan, 2002). According to stakeholder theory, public companies should identify their different stakeholders with different interests. Stakeholders pressure government companies to report information related to social and environmental activities and how these activities affect the environment and society. Government companies and other companies disclose information about the impacts on society and the environment in their reports to achieve or maintain good relations with stakeholders as well as to increase their image and reputation (Amin et al., 2018). However, disclosure of sustainability performance can increase competition. Legitimacy theory points out that SOEs should legitimize their actions to gain public trust, which can lead to SOEs becoming more aware of the demand for information about their sustainability performance. Companies with a higher percentage of shares owned by the government are expected to be under more pressure to accept social responsibility. Therefore, there is a need for responsibility and sustainability for public companies (Garde Sánchez et al., 2017). The institutional theory explains that companies strive to improve organizational mechanisms to increase competitive advantages (DiMaggio and Powell, 1983). According to the published literature, the first hypothesis of the research is stated as follows:

H1: Government ownership has a significant effect on corporate sustainability performance disclosure.

2.1.2 Major shareholders and corporate sustainability performance disclosure

Ownership concentration refers to how shares are distributed among the shareholders of a company; the smaller the number of shareholders, the more concentrated the ownership will be. [Zhu and Li \(2008\)](#) point out that multiple major shareholders in the ownership structure of companies lead to balanced conditions because the presence of multiple major shareholders in the company can effectively limit the ability of the largest shareholder to exercise control over the company and confiscate its resources. Moreover, the presence of several major shareholders can play a huge role in supporting the interests of minority shareholders. In this situation, the level of conservatism in the preparation of financial statements increases in proportion to the increase in the limiting power of other major shareholders ([Vaez et al., 2019](#)). Major stakeholders constantly try to influence company decisions by directing managers to engage in a specific program ([Al-Janadi et al., 2016](#)). Empirical analysis of major and large shareholders shows that it can act as a stimulus for investing in social responsibility and corporate sustainability performance because previous theoretical foundations have shown two competitive effects. On the one hand, major stakeholders with "block power" may want to maintain their reputation, especially their social reputation, which may create a positive relationship between major stakeholders and sustainability activities ([Anderson et al., 2003](#)). On the contrary, block power can be expected to reduce agency problems, and therefore, block and major shareholders are expected to negatively affect investment in corporate sustainability ([Ntim and Soobaroyen, 2013](#)). With regard to the above theoretical foundations, the second hypothesis of the research is stated as follows:

H2: Major stakeholders have a significant effect on corporate sustainability performance disclosure.

2.1.3 Family ownership and corporate sustainability performance disclosure

Management and ownership in family firms are controlled by families, which is often associated with an intergenerational view of the firm ([Zellweger et al., 2013](#)). On the other hand, the presence of family-owned shares helps to control management behaviour and reduces the authority of the manager ([Bansal et al., 2018](#)). Companies provide A sustainability report to reduce information asymmetry between informed managers and uninformed investors ([Martínez-Ferrero et al., 2018](#)). Most family firms tend to score higher in values such as altruism, empathy, and zeal ([Payne et al., 2011](#)). Previous results showed that family ownership has a negative effect on the performance of social responsibility ([Block and Wagner, 2014](#)) and the quality of sustainability reporting ([Wang, 2014](#)). After all, greater sensitivity and responsiveness to normative and imitative institutional pressures increase the possibility of family companies participating in corporate social responsibility. [Cordeiro et al. \(2018\)](#) by emphasizing the "long-term horizon" point of view, showed that family firms have higher levels of participation in corporate social responsibility. [Lagasio and Cucari \(2019\)](#) argue that there are still doubts about the effect of family ownership on ESG disclosure. Regarding the proposed theoretical foundations, the third hypothesis of this research is proposed as follows:

H3: Family ownership significantly affects corporate sustainability performance disclosure.

2.1.4 The moderating role of the independent board of directors

Agency theory suggests that an independent board of directors can effectively control and monitor the actions of agents and brokers. In addition, board independence indicates greater clarity and transparency, which increases value in the long term ([Jizi et al., 2014](#)). According to the legitimacy perspective, the board's independence stimulates the disclosure of social responsibility and increases

the sustainability of the company's activities (Fernández-Gago et al., 2018). In the framework of stakeholder theory, board independence is expected to be positively related to a higher level of corporate sustainability performance because outside directors are less pressured by stakeholders and directors than inside directors. In addition, being outside the organization leads to investing in accountability to a wider audience and higher marketing costs (Prado-Lorenzo and Garcia-Sanchez, 2010). In addition, independent boards also limit the negative effect of ownership, such as family ownership, on disclosure procedures (Chau and Gray, 2010). Due to a commitment to society, they try to participate in social and environmental activities (Barzegari Khanagha and Jafari Taraji, 2016). On the other hand, the independence of the board of directors plays an important moderating role in promoting the social responsibility of the company because its positive effect on foreign ownership and government ownership is reflected in the disclosure method of companies (Zaid et al., 2020) and also companies with the structure of boards of directors. More independent, they will invest more in sustainability activities and are more involved in corporate sustainability activities (Cucari et al., 2018). Therefore, according to the cases mentioned above, the fourth to sixth hypotheses of the current research is presented as follows:

H4: The moderating role of the independent board of directors is significant in the relationship between state ownership and corporate sustainability performance disclosure.

H5: The moderating role of the independent board of directors is significant in the relationship between major shareholders and the corporate sustainability performance disclosure.

H6: The moderating role of the independent board of directors is significant in the relationship between family ownership and corporate sustainability performance disclosure.

3. Research Methodology

This research is applied in terms of its purpose and is also considered a semi-experimental type of research. This research is descriptive and belongs to post-event research. The logic of this research is analogy induction. Multiple regression was used to analyze the data. In this research, the information and data related to the variables of this research include many items from the audited financial statements and accompanying explanatory notes, as well as from the report of the activities of the board of directors to the general assembly of shareholders for the variable of corporate sustainability performance by referring to the stock exchange organization library. The statistical population of this research includes companies accepted in Tehran Stock Exchange. The research period is 5 years, from 2016 to 2020. In order to select the sample, the following restrictions have been applied:

- 1) They must be present in the stock market earlier than 2016 to the end of 2020.
- 2) Except for banks, insurance companies, investment companies and intermediaries.
- 3) The end of their financial year is the end of March.
- 4) They have not changed the financial year during the research period.
- 5) They have not withdrawn from the stock market during this period.

According to the application of the above restrictions, 111 companies have been examined for 5 years (a number of 555 companies). In this research, using panel data and using multiple regression, research hypotheses are tested. The first regression model related to the first, second and third hypotheses of the research is as follows:

$$CSPD_{it} = a_0 + \beta_1 OS_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_3 ROA_{it} + \beta_3 AGE_{it} + Year + Industry + \varepsilon_{it}$$

Also, the second model of the research, in which the fourth, fifth and sixth hypotheses of the research are tested, is as follows:

$$CSPD_{it} = a_0 + \beta_1 BIND_{it} + \beta_2 OS_{it} + \beta_3 OS_{it} * BIND_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 AGE_{it} + Year + Industry + \varepsilon_{it}$$

3.1 Measurement of variables

3.1.1 Dependent variable

Corporate sustainability performance disclosure (CSPD):

To measure the disclosure of environmental, governance and social performance, the research of [Al Amosh and Khatib \(2021\)](#) has been followed with 28 indicators. There are 7 environmental indicators, 13 social indicators and 8 governance indicators. If any case is revealed, the number one will be given; otherwise, zero will be given. The mentioned criteria are presented in Table 1.

Table 1. Corporate sustainability disclosure standards

Criterion type	Indicators
Environmental	Is the way energy consumption is directly and indirectly disclosed in the company?
	Are the amount and intensity of energy disclosed in the company?
	Are energy sources (water, electricity, gas or others) disclosed in the company?
	Is the management of water consumption disclosed in the company?
	Is waste management disclosed in the company?
	Is the environmental management disclosed in the company?
	Is the company's environmental impact disclosed?
Social	Is the payment to CEOs disclosed
	Is the payment to female employees disclosed?
	Is the amount paid to the company's employees disclosed
	Is gender diversity disclosed in the company?
	Is non-discrimination among employees disclosed?
	Is the amount of damage that employees may face disclosed?
	Are child labour activities disclosed in the company?
	Are human rights policies disclosed in the company?
	Is managerial diversity disclosed in the company?
	Are charitable donations disclosed?
	Is the method of selection (qualification) of employees disclosed?
	Is the company's social work disclosed?
	Is the way of paying attention to the health of the employees disclosed?
Governance	Is the separate role of each member of the board of directors disclosed?
	How to vote in companies is disclosed.
	Are incentive payments disclosed in the company?
	Are labour rights disclosed in the company?
	Are business ethics indicators disclosed?
	Are consumer rights protection indicators disclosed?
	Are the money laundering and anti-corruption rules disclosed to the partners?
	Is the tax transparency disclosed in the company?

Finally, the corporate sustainability disclosure score is calculated as follows:

$$CSPD = \frac{\sum ENV + \sum SOC + \sum CG}{28}$$

3.1.2 Independent variable

State ownership (STOWN): In order to calculate the variables of state ownership, the percentage of the company's shares owned by the government or its subsidiaries is used.

Major shareholders (MSHARE): In order to calculate the variable of major shareholders, the total percentage of shareholders who own at least 5% of the company's shares has been used.

Family owned (FOWN): Family ownership is a dummy variable in this research. It is 1 if natural

persons own at least 20% of the company's ordinary shares, or at least one relative or causal member of the family is a member of the board of directors or an executive director and actively works in the board of directors; otherwise, it is 0.

3.1.3 Moderating variable

Independent board of directors (BIND): The board of directors independence is calculated using the ratio of non-obligatory members to all members of the company's board of directors.

3.1.4 Control variable

SIZE: The company's size is equal to the natural logarithm of the company's assets at the end of the period.

Financial Leverage (LEV): Financial leverage is calculated by dividing the book value of liabilities by the book value of the company's assets.

Return On Assets (ROA): return on assets is calculated by dividing the operating profit by the book value of the company's assets.

AGE: The company's age equals the natural logarithm of the number of years of presence on the Tehran Stock Exchange.

4. Research Findings

The results of the descriptive statistics of the research data are presented in Table 2. The final data for analysis was 555 company years, representing 111 companies investigated over 5 years. According to the information obtained from the descriptive statistics of the variables of this research, i.e., the dependent variable of governance, environmental and social disclosure, the largest data value equals 0.887, the lowest value equals 0.153, and the average value of this variable is 0.425, which is less than 50%. It shows the low interest of the companies in the examined sample regarding governance, environmental and social issues. The average amount of government ownership in the sample of the investigated companies equals 0.367, which indicates that more than one-third of the shares of the investigated companies in this research are owned by the government. For the measure of ownership of major shareholders, its maximum and minimum values equal 0.891 and 0.052, respectively, and the average value of major shareholders equals 0.238.

Table 2. The descriptive statistics of research variables

Variables	Number	Minimum	Maximum	Mean	Sd	Skewness	Kurtosis
CSPD	555	0.153	0.887	0.425	0.198	1.133	2.950
STOWN	555	0.169	0.815	0.367	0.143	1.211	2.922
MSHARE	555	0.052	0.891	0.238	0.108	3.416	5.938
FOWN	555	0	1	0.249	0.426	1.163	2.353
BIND	555	0.2	1	0.651	0.125	1.332	3.564
SIZE	555	11.082	19.874	13.954	2.672	-0.244	3.561
LEV	555	0.256	0.943	0.607	0.197	-0.055	2.191
ROA	555	-0.100	0.339	0.103	0.113	0.353	2.642
AGE	555	1.098	3.689	2.171	0.137	1.681	3.341

Regarding the criterion of family ownership, its average value for the sample companies in this research shows that approximately 25% of the companies are run by families. Regarding the independence variable of the board of directors, the average value (0.651) shows that approximately 65% of the board of directors members are independent and non-executive. Multicollinearity between variables was tested using Pearson's pairwise correlation coefficient. If the correlation coefficient between two variables is less than 0.8, the multicollinearity problem is very partial and can be ignored

(Gujarati and Porter, 2009). Since the correlation coefficient for all variables is less than 0.8, it can be stated that there is no multicollinearity problem between the variables. Also, this research used the value of the variance inflation factor (VIF) to investigate the collinearity between the variables. According to Table 3, the VIF value of research variables is less than 4, which shows that there is no collinearity between the variables of this research.

Table 3. Correlation and multicollinearity analysis results for independent variables

Variables	CSPD	STOWN	MSHARE	FOWN	BIND	SIZE	LEV	ROA	AGE
CSPD	1.000								
STOWN	0.696	1.000							
MSHARE	-0.459	-0.026	1.000						
FOWN	-0.347	-0.075	0.554	1.000					
BIND	0.665	0.666	-0.050	-0.119	1.000				
SIZE	0.418	0.234	-0.326	-0.393	0.250	1.000			
LEV	-0.452	-0.591	-0.273	-0.354	-0.109	0.381	1.000		
ROA	0.531	0.372	0.465	0.295	0.624	0.396	-0.482	1.000	
AGE	0.474	0.192	-0.586	-0.586	0.163	0.139	-0.295	0.476	1.000
VIF	-	1.83	1.68	1.25	1.30	1.21	2.01	1.98	1.11

Examining the first research model shows that the Wald statistic is significant for all four regressions, so the regression fits well. According to the results obtained from the regression output in Table 4, the relationship between government ownership in companies and the level of corporate sustainability performance disclosure is significant at the 0.05 level. Therefore, the first hypothesis of the research is confirmed. As can be seen from the regression output and the sign of the variable coefficient of government ownership (0.757), it can be interpreted that with the increase in the government's shareholding in companies, the level of attention of those companies to issues such as environmental, social and governance will increase. Thus, a broader conclusion can be made that with the increase in the government's shareholding in companies, these companies pay less attention to profit and profit issues. Then, they do not refrain from spending on the mentioned issues and the cost of these items is less. In the company under their ownership, they pay attention and give more importance to the common interests. Regarding the second hypothesis of the research, the results show that major shareholders in companies have a significant effect on the level of corporate sustainability performance disclosure. Therefore, the second hypothesis of the research is confirmed. The sign of the variable coefficient of major shareholders (-0.613) shows that with the increase of major shareholders in companies, the level of attention of those companies to issues such as environmental, social and governance will decrease and these companies pay less attention to non-profit issues, so They refuse to pay for the issues above. Also, based on Table 4, the results of the third hypothesis show that the relationship between family ownership in companies and the level of corporate sustainability performance disclosure was significant at the 0.05 level. Therefore, the third hypothesis of the research is confirmed. The sign of the variable coefficient of family ownership (-0.169) indicates that with the increase of family ownership in companies, the level of attention of those companies to issues such as environmental, social and governance will decrease. Therefore, family-owned companies will probably refrain from spending on sustainability measures due to the desire to earn more profit by reducing costs. Also, according to Table 4, the results of these hypotheses have been confirmed in the fourth regression.

Table 4. Regression results of the first research model

$CSPD_{it} = \alpha_0 + \beta_1 OS_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 AGE_{it} + \epsilon_{it}$				
Test	1	2	3	4
STOWN	0.757*** (13.77)			0.683*** (9.54)
MSHARE		-0.613*** (-9.38)		-0.527*** (-6.91)
FOWN			-0.169*** (-8.08)	-0.136*** (-5.98)
SIZE	0.014*** (5.76)	0.013*** (5.91)	0.012*** (4.70)	0.013** (2.09)
LEV	-0.203 (-0.41)	-0.251 (-1.12)	-0.198 (-0.98)	-0.679 (-0.87)
ROA	0.311** (2.24)	0.421** (2.39)	0.376** (2.18)	0.299** (2.03)
AGE	0.655*** (7.36)	0.291*** (6.750)	0.551*** (6.77)	0.416*** (5.45)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Wald chi2	497.91	240.16	280.39	183.78
P-Value(Wald chi2)	0.000	0.000	0.000	0.000
R2	0.787	0.622	0.570	0.617

The first line is the variable coefficient, and the second line (z statistic)
 *at 10% significance level, **at 5% significance level and *** at 1% significance level

According to Table 5, the Wald statistic related to the second model for all four regressions is significant at the 0.05 level and has a suitable fit. Based on the results obtained from the fourth hypothesis test of the research, the value of the t statistic (-0.87) is not significant at the 0.05 level for the modifier variable STOWN* BIND. Therefore, it can be concluded that the board of directors' independence does not significantly affect the relationship between state ownership and the disclosure of social, environmental and governance performance. Therefore, the fourth hypothesis of the research is rejected. Examining the fourth hypothesis shows that the modifier variable MSHARE* BIND coefficient is significant at the 0.05 level. As a result, the independent variable of the board of directors significantly affects the relationship between major shareholders and the disclosure of social, environmental and governance performance. Therefore, the fifth hypothesis of the research is also confirmed. The negative sign of this variable shows that the board of directors' independence reduces the negative relationship between the major shareholders and discloses the company's sustainability. On the other hand, the results of the test of the sixth hypothesis of the research, according to Table 5, show that the t-statistic of the FOWN* BIND variable (-3.08) is significant at the 0.05 level. The value of the coefficient of this variable (-0.485) and its sign shows that the board of directors' independence has a negative effect on the relationship between family ownership and corporate sustainability performance disclosure. By confirming the sixth hypothesis of the research, it can be stated that the board of directors' independence reduces the negative effect of family ownership on corporate sustainability performance disclosure. In other words, family-owned companies pay less attention to sustainability measures; as a result, the independent board of directors pressures these companies for more sustainability measures in order to pay more attention to other stakeholders. According to Table 5, the results of these hypotheses are confirmed in the fourth regression for the second model.

Table 5. Regression results of the second research model

$CSPD_{it} = \alpha_0 + \beta_1 BIND_{it} + \beta_2 OS_{it} + \beta_3 OS_{it} * BIND_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 AGE_{it} + Year + Industry + \varepsilon_{it}$				
Test	1	2	3	4
BIND	0.707*** (3.12)	0.943*** (6.74)	0.980*** (13.51)	0.816*** (6.52)
STOWN	0.614*** (4.35)			0.567*** (3.98)
STOWN* BIND	-0.381 (-0.87)			-0.324 (-1.01)
MSHARE		-0.466*** (-2.81)		-0.391** (-2.14)
MSHARE* BIND		-0.511*** (-2.92)		-0.497** (-2.23)
FOWN			-0.166** (-2.01)	-0.182** (-1.99)
FOWN* BIND			-0.485*** (-3.08)	-0.391** (-2.53)
SIZE	0.110*** (4.82)	0.109*** (3.75)	0.098*** (3.48)	0.101*** (4.01)
LEV	-0.215* (-1.82)	-0.198* (-1.91)	-0.204 (-1.26)	-0.221 (-1.16)
ROA	0.329*** (4.80)	0.401*** (3.98)	0.389** (2.39)	0.358*** (3.57)
AGE	0.609*** (6.91)	0.239** (2.42)	0.439*** (4.67)	0.531** (2.36)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Wald chi2	207.01	212.48	335.08	249.11
P-Value(Wald chi2)	0.000	0.000	0.000	0.000
R2	0.591	0.579	0.672	0.515

The first line is the variable coefficient, and the second line (z statistic)

*at 10% significance level, **at 5% significance level and *** at 1% significance level

5. Conclusion

This research aims to investigate the effect of ownership structure on corporate sustainability performance disclosure, such as social, environmental and governance measures. Also, this study uses the board of directors' independence to modify the ownership structure and its effect on corporate sustainability performance disclosure. The study results showed that the ownership structure could affect the disclosure of a company's sustainability performance. The presence of the government in the ownership structure of companies can be useful for other stakeholders, and this is due to the increase in the quality level of disclosure and transparency in companies (Al Amosh and Khatib, 2021). The state ownership in companies leads to pressure on the board of directors of those companies to consider corporate sustainability issues (including sustainability in environmental, social and governance dimensions), which will lead to an increase in the legitimacy of companies from the perspective of society (Barzegari Khanagha and Jafari Taraji, 2016). The findings show that major ownership dominates the company's management decisions. In this way, companies are limited to carrying out corporate sustainability measures to reduce costs, which negatively affects major shareholders' performance disclosure. It shows the stability of a company. Furthermore, the presence of family-owned shares helps control management behavior and reduces the manager's discretion (Bansal et al., 2018). Family ownership pursues its goals through internal corporate governance and informal relationships, and the pressure to fulfil their rights increases, and this causes the governance to be exposed to their demands in order to maintain their positions. This dominance directs the

company's strategies towards the interests of family shareholders and no other shareholders (Wang, 2014). Hence, family-owned companies are not inclined to perform social, environmental and managerial actions and do not significantly affect the disclosure of voluntary actions. The findings of this research also show that the members of the independent board of directors seek to transmit information related to the disclosure of the company's sustainability performance in order to prevent conflict of interest and any tension between the stakeholders. In order to create legitimacy through sustainability measures, the independent members of the board of directors should inform companies and management about this and gain the trust of shareholders and society (Malekian et al., 2019). As a result, the independent members of the board of directors impact family ownership and major shareholders in companies, reducing the conflict of interest between them and other shareholders by disclosing sustainability performance and limiting their opportunistic goals (Chau and Gray, 2010). Therefore, according to the research findings, it is suggested that the ownership structure of the companies be diversified to create legitimacy in society by carrying out sustainability measures so that the interests of the companies are aligned with other stakeholders and society. It can also be suggested to the shareholders in companies with a weak ownership structure that with the presence of an independent board of directors in the structure of the company's board of directors, the relationship between the weak ownership structure such as family ownership and major shareholders, is reduced. In contrast, the relationship between that ownership structure and the corporate sustainability performance disclosure increased. We look forward that these findings will have significant implications for regulators, policymakers, shareholders, and investors, and these concepts have helped to develop a theoretical framework for the role of ownership structures in corporate sustainability performance disclosure practices.

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