Research Article

The Relationship between Institutional Investors and ESG Disclosure: The Moderating Role of CEO Managerial Ability

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ABSTRACT

The purpose of this research is to investigate the effect of institutional investors on environmental (ENVD), social (SOCD), governance (GOVD), and ESG disclosure (ESGD), as well as the moderating role of CEO managerial ability. The samples in this study are Thai non-financial listed firms spanning 2020—2022, with 373 listed companies (total observations of 1,109). We used Hayes' PROCESS macro-based hierarchical regression to conduct data analyses for hypothesis testing. The data creates a checklist of ESG disclosure scores based on the Sustainable Development Goals (SDGs). The research findings indicate that, while institutional investors may not exert a pivotal influence on ESGD, ENVD, and SOCD, they do exhibit a positive impact on GOVD. Furthermore, the study reveals that the positive relationship between institutional investors and ESGD, ENVD, and SOCD is subject to moderation by CEO managerial ability.

From a practical standpoint, the study highlights the importance of institutional investors and the combination of the CEO's managerial ability to improve the firm's ESG performance. This study is the first

to demonstrate complementarities between CEOs' managerial ability and institutional investors' attributes in promoting ESG. Furthermore, it fills the void on how institutional investors impact ESG. While it is conventionally considered that institutional investors are more likely to engage in sustainability-responsible activities, the sensitive findings of this study shed light on the fact that institutional investors had a stronger positive effect on ESG when the CEO's managerial ability was average and above industry, whereas institutional investors had no significant effect on ESG when the CEO's managerial ability was below average.

Keywords: Institutional Investors, Management Ability, ESG Disclosure

บทความวิจัย

ความสัมพันธ์ระหว่างนักลงทุนสถาบันและการเปิดเผยผลการดำเนินงานด้านสิ่งแวดล้อม สังคม และการกำกับดูแลกิจการ : บทบาทอิทธิพลกำกับของความสามารถผู้บริหาร

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ เพื่อตรวจสอบผลกระทบของนักลงทุนสถาบันที่มีต่อการเปิดเผยผลการดำเนินงานด้านสิ่งแวดล้อม สังคม และการกำกับดูแลกิจการ และอิทธิพลกำกับของความสามารถของผู้บริหารระดับสูง กลุ่มตัวอย่างที่ใช้ในการศึกษาคือบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ที่ไม่ใช่กลุ่มธุรกิจการเงิน ในปี พ.ศ. 2563-2565 จำนวน 373 บริษัท (จำนวนทั้งหมด 1,109 ตัวอย่าง) สถิติในการทดสอบสมมติฐานโดยการวิเคราะห์ Hayes Process Regression เก็บข้อมูลค่าคะแนนการเปิดเผยข้อมูลด้วยการสร้างรายการตรวจสอบเนื้อหา (Checklist) โดยใช้เกณฑ์เป้าหมายการพัฒนาที่ นอกจากนี้ผลการศึกษาพบว่า ความสามารถของผู้บริหารระดับสูงมีอิทธิพลกำกับในทิศทางบวกต่อการเปิดเผยผลการดำเนินงานด้านสิ่งแวดล้อม สังคม และ ESG ในภาพรวม

จากมุมมองเชิงปฏิบัติ การศึกษานี้แสดงให้เห็นถึงความสำคัญของนักลงทุนสถาบันและความสามารถของผู้บริหารระดับสูงในการปรับปรุงผลการดำเนินงาน ESG การศึกษานี้เป็นครั้งแรกที่แสดงให้เห็นถึงความสามารถในการบริหารของผู้บริหารระดับสูงและสัดส่วนการถือหุ้นของนักลงทุนสถาบันในการส่งเสริม ESG ให้เป็นไปอย่างมีประสิทธิภาพ นอกจากนี้ยังเติมเต็มช่องว่างของงานวิจัยว่านักลงทุนสถาบันมีผลกระทบต่อ ESG อย่างไร แม้ว่าโดยทั่วไปจะพบว่า

นักลงทุนสถาบันมีแนวโน้มที่จะมีส่วนร่วมในกิจกรรมที่รับผิดชอบต่อความยั่งยืน แต่การค้นพบที่สำคัญของการศึกษานี้แสดงหลักฐานเชิงประจักษ์ให้เห็นว่า นักลงทุนสถาบันมีผลกระทบเชิงบวกที่แข็งแกร่งต่อ ESG เมื่อความสามารถในการบริหารของผู้บริหารระดับสูงเท่ากับค่าเฉลี่ยอุตสาหกรรมเป็นต้นไป ในขณะที่นักลงทุนสถาบันไม่มีผลกระทบอย่างมีนัยสำคัญต่อ ESG เมื่อความสามารถในการบริหารจัดการของ CEO ต่ำกว่าค่าเฉลี่ยของอุตสาหกรรม

คำสำคัญ: นักลงทุนสถาบัน ความสามารถของผู้บริหาร การเปิดเผยข้อมูล ESG

1. INTRODUCTION

A large amount of prior research has examined the direct relationship between environmental, social, and governance (hereafter: ESG) factors and firm financial performance, and eventually firm value (Qiu et al., 2016; Alareeni & Hamdan, 2020; Maji & Lohia, 2023). Most studies find that ESG has a positive relationship with firm performance. This is according to the stakeholder theory (Freeman, 1984). Despite the widespread belief that ESG leads to enhanced firm performance and value, there are still ongoing disputes and contentious disagreements over ESG (Cornett et al.; 2007; Aboud & Diab, 2018). As a result, research on the relationship between ESG and firm performance is on the rise. Only a few studies have examined factors driving ESG performance.

Institutional investors have a substantial influence over company actions. These investors, formerly focused on maximizing shareholder value, are now increasingly acknowledging the importance of non-financial factors (Cornett et al.; 2007; Kim et al., 2020; Velte, 2020b). Consequently, they are incorporating ESG factors into their governance strategies. Firms must prioritize fostering legitimacy to achieve financial outcomes that align with the expectations of institutional investors, particularly those who are interested in socially responsible investments and have a focus on ESG practices (Rashid, 2020; Jiang et al., 2022; Nasta et al., 2024). The important evidential landscape of ESG performance is being shaped by the growing impact of specialized institutional investors, such as pension funds and socially responsible investment funds. These institutions have firmly established themselves as catalysts for advancing business sustainability. Their responsibility is to guide the firm toward a unified performance framework that merges financial measurements with ESG objectives (Aluchna et al., 2022; Velte, 2020)

As the financial world changes, a group of engaged, socially responsible institutional investors is having a big impact on companies' actions (Serafeim, 2018). People are basing more and more of their investment choices on how committed a company is to ESG principles (Cornett et al.; 2007; Jiang et al., 2022). People perceive these as indicators of long-term competitive advantages, performance enhancements, adherence to evolving industry standards, and fulfillment of legal and moral responsibilities (Nasta et al., 2024). Putting money into socially responsible businesses has become more popular. This is part of a larger shift in strategy towards companies that can show they will take care of society and the environment in the long term (Cornett et al.; 2007; Basse Mama & Mandaroux, 2022). In this case, the fact that big investors are so interested in the legitimacy of the company makes ESG factors even more important in the investment. A rising number of people are choosing to put their money into socially responsible businesses. This is a component of a larger shift in strategy that is aimed at establishing a business that is capable of demonstrating long-term

responsibility to society and the environment (Basse Mama & Mandaroux, 2022; Nasta et al., 2024). The fact that major institutional investors are so concerned with the legitimacy of the companies in this scenario significantly increases the significance of ESG considerations in the transaction.

Based on the resource-based view (Bhandari et al., 2022) and the upper echelon theory (Hambrick & Mason, 1984), researchers have said that companies with special, unique human resources, like better management skills, can gain competitive advantages in corporate social responsibility (CSR), which helps them do better in environmental, social, and governance (ESG) issues (Jouber, 2022). First, corporate executives' abilities, skills, and personal values significantly influence a company's strategic decisions, potentially impacting the company's ESG policy decisions. Secondly, the managerial ability of managers influences their strategic decisions. If there isn't enough managerial ability, managers may make decisions that aren't in the best interests of stakeholders (Kao et al., 2024).

Also, according to the agency theory (Jensen & Meckling, 1976), better and more proactive corporate governance systems should be in place to help with making strategic decisions about the company's commitment to being socially sustainable. These systems' main job is to do the work of institutional investors (i.e., monitoring and giving advice). This makes it easier for companies to make strategic decisions about their ESG sustainability commitments. Institutional investors, acting as an external corporate governance mechanism for a listed company, challenge this perspective by safeguarding the interests of a broader stakeholder base. Based on the aforementioned theories, empirical literature, indicates that companies with institutional investors (Dyck et al., 2019; Aluchna et al., 2022; Liu et al., 2023) and top managers with stronger attributes and higher abilities (Sun, 2017; Chen et al., 2020; Kao et al., 2024), attain superior ESG performance.

This literature makes a significant contribution by assuming that a CEO's managerial ability and institutional investors are the main drivers of superior ESG performance. However, the ESG research landscape design neither explicitly incorporates these variables nor considers them jointly to demonstrate how they complement or substitute the impact relationship between institutional investors and ESG. This work's distinguishing characteristic is investigating the joint effect of a CEO's managerial ability and institutional investors on ESG disclosure, which remains unexplored in the literature. Therefore, it is crucial to examine the connection between institutional investors and ESG performance, based on the CEO's managerial ability assumption. My major goal is to hypothesize about the impact institutional investors have on a firm's ESG performance, taking into account how the CEO's management ability can supplement or replace this effect. Explicitly, I want to explore the relationship between institutional investor ownership and a company's ESG, as well as the moderator influence of managerial ability. Thus, the primary research questions proposed in this

study are as follows: (1) Can institutional investors have an impact on ESG? (2) How can managerial ability influence the interaction between institutional investors and ESG?

The rest of the paper is structured as follows: Section 2 delves into a review of the literature and hypothesis development. Section 3 outlines the research methodology employed. Section 4 presents the research findings, followed by the conclusions and recommendations.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 ESG in Thailand Context

The Stock Exchange of Thailand (SET) has mandated that all listed firms in Thailand submit environmental, social, and governance (ESG) reporting in their 56-1 (One Report) reporting beginning in 2021. Previously, ESG reporting was voluntary. The SET has adopted the Global Reporting Initiative (GRI) Standard Guidelines (The Stock Exchange of Thailand, 2022). To develop trust and generate stakeholder interest, listed companies must publish complete, accurate, and transparent information. Financial reporting, for example, illustrates a company's profitability, yet this may not be enough to inform investors' decisions. This is because today's businesses face increasingly complex economic, social, and environmental risks and problems. Non-financial information, including a company's vision, objectives, strategy, and risk considerations, as well as ESG information, is equally important for investment decisions. It not only helps stakeholders comprehend the numerous facets of a company's operations through a more holistic approach, but it also increases stakeholders' trust in the business's long-term prospects. (Treepongkaruna & Suttipun, 2024).

The Thai Stock Exchange (SET) has actively promoted sustainable development among listed firms since 2015 by compiling a list known as the Thailand Sustainable Development Investment (THSI) (The Stock Exchange of Thailand, 2015). This effort seeks to showcase companies that follow ESG criteria, giving investors an alternative set of data for making educated investment decisions. To support this effort, the Thai government issued a comprehensive sustainable development plan in 2020, which acts as a framework for national sustainable development. These targets demonstrate Thailand's commitment to ESG principles, which are important to the country's sustainable development strategy (Treepongkaruna & Suttipun, 2024). To reflect these aims, the Thai Stock Exchange changed the THSI to SET ESG. This shift not only aligns with international ESG language but also emphasizes the relevance of ESG criteria in Thai investment decisions (Janamrung & Issarawornrawanich, 2015). Furthermore, in this framework, the ESG Rating and the ESG Rating Investment Management Company Association play important roles. They give standardized assessments of companies' ESG performance, allowing for more transparent and informed investment decisions. Overall, these measures demonstrate Thailand's

commitment to incorporating sustainable practices into corporate and government plans, establishing the country as a regional leader in ESG-driven growth (The Stock Exchange of Thailand, 2022).

2.2 Institutional Investor and ESG

Institutional ownership involves the company in more actions related to sustainability (Clark et al., 2015; Liu et al., 2023), and other environmental (Basse Mama & Mandaroux, 2022), and social themes (Aluchna et al., 2022). These findings are supported by agency theory. As agency theory argues, managers (agents) frequently have different interests and aims than institutional investors (principals), resulting in principle-agent conflicts (Jensen & Meckling, 1976; Cornett et al.; 2007)

Regarding ESG practices, managers under performance pressure tend to postpone or avoid investing in expensive ESG projects with unclear returns. Instead, they are more likely to priorities short-term profitability to reach financial targets during their tenure (Pinheiro et al., 2024). Large ownership stakes motivate institutional investors to closely monitor corporate operations and demand changes to increase shareholder value and ensure long-term viability (Kim et al., 2020; Rashid, 2020; Jin et al., 2024). The existence of agency costs complicates such efforts because managers, as insiders, often know more about the company than external investors (Huang, 2022). Myopic managers may also exploit information and resources for their own gain rather than actively pursuing sustainability innovation that necessitates long-term investment. As a result, the primary question is how institutional investors direct managerial attention to ESG challenges and persuade them to pursue sustainability through ESG activism. The empirical evidence confirms the success of these relationships between institutional investors and ESG. For example, research has indicated that firms with a high level of institutional investor ownership perform better on ESG performance. Wang et al., (2023) discovered that institutional investors' engagement promotes environmental innovation and reduces instances of greenwashing. Giordino et al., (2024) demonstrate a link between institutional investor involvement, increased transparency, and long-term value development through sustainable practices. Finally, by incorporating the attention-based approach into their engagement strategy, institutional investors can effectively draw managerial attention to ESG problems. This alignment reduces principal-agent conflict and encourages long-term business strategies that benefit both the company and its stakeholders.

According to agency theory, scholars recognized that (1) institutional investors' resources and capabilities are valuable assets that contribute to the firm's long-term competitive advantage, and (2) institutional investors provide synergies to ESG firms' outcomes and offer prominent perspectives in critical decision-making around social, environmental, and good governance tasks. Most academics recognize the favorable impact of institutional investors on ESG. For example, Velte (2023) discovered

that institutional investors have a positive effect on company sustainability based on ESG performance and reporting. Specifically, foreign institutional investors will improve ESG outputs and long-term sustainability. Additionally, long-term institutional investors moderate the positive link between ESG and financial performance. Similarly, Flammer et al., (2021) and Wu et al., (2023) found that institutional investors not only give monetary support for corporate green innovation but also actively promote environmental efforts in their portfolio companies through ESG activism. By the same token, Lopez-de-Silanes et al., (2024) assert that institutional investors have a strong incentive to incorporate high-quality ESG companies into their portfolios. Furthermore, most top institutional investors allocate a greater share of their portfolios to companies that have high ESG score. Within the same context, Kordsachia et al., (2022) showed that the presence of Institutional investors has a positive impact on a firm's environmental performance and institutional investors have a favorable correlation with corporations' readiness to react to the Carbon Disclosure Project. These findings suggest that firms with a higher level of institutional investor ownership are more cognizant of environmental risk. Clark et al. (2015) and Dyck et al. (2019) showed that firms characterized by institutional investors are more effective than other firms in pursuing ESG strategies.

Altogether, the above studies have recognized that there is a required positive impact of institutional investors on the firm's ESG effect. The above evidence underpins the following hypothesis:

H1: Institutional investors have a positive effect on environmental, social, and governance performance disclosure (ESGD).

H2: Institutional investors have a positive effect on environmental performance disclosure (ENVD).

H3: Institutional investors have a positive effect on social performance disclosure (SOCD).

H4: Institutional investors have a positive effect on governance performance disclosure (GOVD).

2.3 Institutional Investors and ESG: the Moderating Effect of CEO Managerial Ability

Two main approaches, upper-echelon theory, and resource-based view theory, could assist in explaining how the CEO's ability to lead others impacts the relationship between institutional investors and ESG.

The upper echelon theory (Hambrick & Mason, 1984; Hambrick, 2007) focuses on top management teams, or CEOs, and emphasizes the dominant role and critical impact they have on organizational outcomes and performance (Khan et al., 2022). In this context, we can question the impact of CEOs' managerial abilities on the relationship between institutional investors and ESG, given that the organization's outcomes mirror their abilities (Fernando et al., 2020). Drawing on upper-echelon theory, the upper echelon theory posits that the influence of a CEO on ESG initiatives and performance is

significant, both within the senior management team and across the entire organization. Not only group-related determinants within the board of directors but also the CEO's pivotal role may be critical in establishing a successful ESG strategy (Hambrick, 2007). When the CEO's conduct aligns with stakeholder expectations, he or she should be more enthusiastic about developing effective ESG initiatives. Increased authority may motivate CEOs to prioritize stakeholder management, potentially enhancing the company's reputation, ESG, and financial performance (Velte, 2020a).

According to the resource-based view theory (Becker & Huselid, 1998, Chuang, 2004) , CEO ability is defined as the managerial knowledge and skills needed to create value and gain a competitive advantage. According to Kao et al., (2024), A CEO with superior capabilities has a greater inclination to pursue third-party validation of their ESG information. The strong correlation emphasizes the essential role that managerial competence plays in enhancing the dependability and excellence of the reported ESG information. CEOs with higher capabilities are more likely to recognize the significance of third-party assurance in verifying and enhancing the credibility of their ESG disclosures (J. Chen & Chen, 2020). These companies demonstrate their commitment to transparency and accountability in their reporting methods by actively pursuing third-party assurance, setting them apart from rivals and bolstering their reputation and credibility (H. Chen et al., 2023).

The above-described theory suggests that firms with stronger CEOs and institutional investors are more capable of achieving superior ESG performance. Aghion et al. (2013) demonstrate that managers are more likely to invest in and pursue innovation projects in the presence of high institutional investors and that there is a that there is complementarity between institutional ownership and high CEO managerial ability. Good corporate governance includes the CEO's managerial ability. According to Atawnah et al. (2024), high managerial ability serves as a tool for reducing agency problems among managers and aligning the interests of managers and owners. More capable managers generate more revenue by efficiently utilizing internal corporate resources, which ultimately increases firm profitability (Demerjian et al., 2012). Efficiently managed companies increase firm value, which maximizes long-term shareholder wealth. Institutional investors' role in monitoring firms leads to greater disclosure and less information asymmetry, resulting in a stronger correlation between managerial ability, which in turn maximizes long-run shareholder wealth. It means that managerial ability and institutional ownership can drive the company's success in ESG (Nurleni et al., 2018).

From the above discussion, I propose the following hypothesis:

H5: The positive effect of institutional investors on ESGD is greater in the presence of a CEO with higher managerial ability.

H6: The positive effect of institutional investors on ENVD is greater in the presence of a CEO with higher managerial ability.

H7: The positive effect of institutional investors on SOCD is greater in the presence of a CEO with higher managerial ability.

H8: The positive effect of institutional investors on GOVD is greater in the presence of a CEO with higher managerial ability.

Conceptually, the model is highlighted in Figure 1.

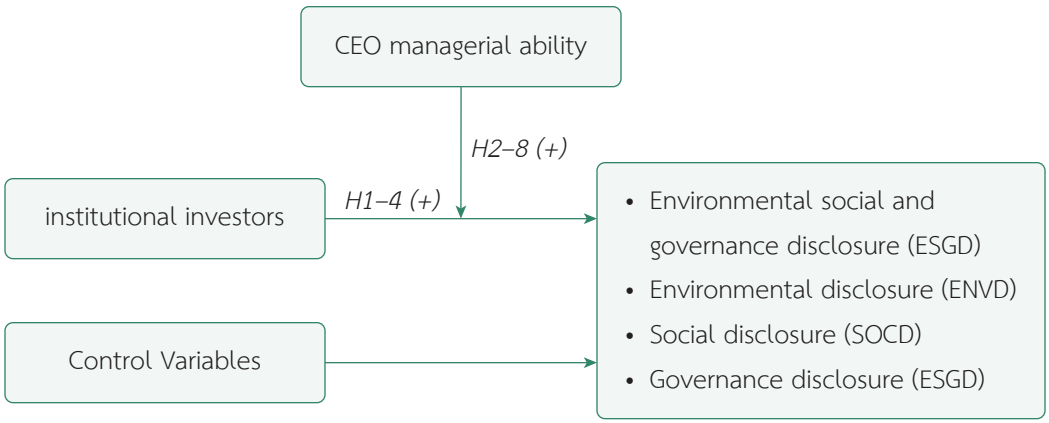

Figure 1 Conceptual Model

3. METHODOLOGY

3.1 Sample Selection

To test the hypotheses, the data on Thai-listed companies from the SETSMART database during the COVID-19 pandemic waves in 2020–2022 were gathered, focusing on their disclosure of ESG performance. Previous research has highlighted the significant impact of ESG on listed companies, linking it to lower financial constraints. For instance, Al Amosh & Khatib, (2022) conducted a study evaluating ESG in both developing and developed countries before and after the COVID-19 pandemic, examining its effects on ESG. They emphasized the importance of ESG in shaping a positive corporate reputation. Additionally, Moalla & Dammak (2023) found that companies with high ESG experience lower stock price volatility compared to those with low ESG. In essence, superior ESG reduces stock price volatility induced by the COVID-19 shock, thereby promoting resilience and stability in stock prices. Furthermore, Adams & Abhayawansa (2022) provided a comprehensive summary of existing literature on the role of environmental, social, and governance (ESG) issues during the COVID-19

global pandemic, highlighting ESG's pivotal role during crises. Several studies suggest that ESG stocks exhibit better stock performance (higher stock returns and firm value) during the pandemic, while others indicate that ESG functions as a risk protection tool during crises, as ESG stocks are associated with lower volatility and downside risk during the COVID-19 crisis. Table 1 contains a summary of the data collection process.

Table 1 Sample Selection

Sample Selection Process	Firms
The listed firms in the Stock Exchange of Thailand (SET)	658
Less: The listed company which are subject to possible delisting	15
Less: Property fund and real estate investment trust	68
Less: Financial Sector	67
Less: Firms with inadequate data to create variables, as well as data outliers	135
Number of unique firms	373
Number of observations (2020–2022)	1,109

3.2 Variable Measurements

This section outlines the variable measurements (as displayed in Table 2) and the methods for measuring ESG performance disclosure (as displayed in Table 3). The Sustainable Development Goals (SDGs) follow this methodology for designing ESG scores. The ESG information pertains to disclosures regarding companies and their interactions with the environment and society, as well as their governance practices. After scrutinizing the ESG information in the annual reports, we conducted an interpretative and, to some extent, critical textual analysis of the reports to pinpoint key themes. These themes emerged from the interpretive analysis after careful observation, reading, and re-reading of the reports. The United Nations in 2019 identified a total of 11 environmental, 7 social, and 7 governance themes. We assigned scores based on the relevance of each environmental (ENVD), social (SOCD), and governance (GOVD) score. Finally, CRISIL created the ESG score to measure the ESG performance of Asian countries. They gave the ENVD, SOCD, and GOVD factors different weights of 35%, 25%, and 40%, respectively (Maji & Lohia, 2023), to get the overall ESG score that showed how important each factor was. The scores range from 0 to 1, with 0 representing the lowest level and 1 representing the highest level of performance.

In this study, the CEO's managerial ability is assessed using the method described by Demerjian et al. (2012). Studies of managerial ability have widely used this method (Sun, 2017; J. Chen & Chen, 2020; Jouber, 2022; Khan et al., 2022; Atawnah et al., 2024; Kao et al., 2024). The estimation of managerial ability in this study follows a two-step process, beginning with an estimation of firm efficiency using Data Envelopment Analysis (DEA). DEA is a statistical technique employed to assess the relative efficiency of separable units known as 'decision-making units (DMUs),' with each DMU transforming specific inputs (assets, capital, labor, etc.) into outputs (revenues, etc.). In their model, individual firms serve as DMUs, with revenues representing outputs and seven financial items representing inputs (property, plant and equipment, operating leases, research and development costs, goodwill from business combinations, other intangible assets, cost of goods sold, and selling, general and administrative expenses). In the first stage, the company's overall efficiency is calculated using an optimization procedure that allows for variable weighting of the seven outputs for each revenue input. In the second stage, the total efficiency of the company is decomposed into company and management capabilities by regressing it on various company characteristics (company size, market share, free cash flow, life cycle, operational complexity, and foreign operations).

Table 2 The Study Variables Description

Independent Moderating and Control Variables		
Variables	***Codes***	***Operationalization***
Independent variable		
Institutional investors	*INSI*	The percentage of the shares owned by Institutional investors as the percentage of shares held by the top 10% as a proportion of total shares
Moderating variable		
Managerial ability	*MA_Score*	The measure CEO's managerial ability developed by Demerjian et al. (2012)
Control variables		
Company size	*COSZ*	The natural logarithm of market capitalization
Company growth	*COGR*	The annual percentage change of sales in the prior year
Industry effect	*INDUS*	Dummy variables for to sub-sectors capture industry effects
Annual effect	*YEAR*	Year dummy variables for each sample's firm year to capture year effects

Table 3 ESG Disclosure Elements

Dependent Variables	*Codes*	*Data coverage*	*Operationalization*
Environmental disclosure	*ENVD*	Sustainable use of water (3 indicators), Waste management (3 indicators), Greenhouse gas emissions (2 indicators), Ozone-depleting substances and chemicals (1 indicator) and Energy consumption (2 indicators)	Dummy 1 for disclosing the item and 0 otherwise
Social disclosure	*SOCD*	Gender equality (1 indicator), Human capital (3 indicators), Employee health and safety (2 indicators) and Coverage by collective agreements (1 indicator)	
Governance disclosure	*GOVD*	Corporate governance disclosures (5 indicators) and Anti-corruption practices (2 indicators)	
Environmental, Social, Governance disclosure	*ESGD*	The measurement weights of 35, 25, and 40% (base on CRISIL) are assigned to the ENVD, SOCD, and GOVD disclosure	

3.3 Research Model

The following PROCESS regression equations were developed to investigate the moderating role of managerial ability in the impact of institutional investors on overall ESG disclosure and its environmental, social, and governance dimensions. The Process regression model for H1-H8 is as in equation (1).

$$\begin{aligned} Disclosure_{i,t} = {} & \beta_0 + \beta_1 INSI_{i,t} + \beta_2 MA\_Score_{i,t} + \beta_3 INSI \times MA\_Score_{i,t} + \beta_4 COSZ_{i,t} \\ & + \beta_5 COGR_{i,t} + INDUS/YEARFixedEffects + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where disclosure refers to three environmental (ENVD), social (SOCD), governance (GOVD), and total environmental, social and governance disclosure (ESGD). (ε) represents a random error, (i) denotes firms, and (t) denotes the period.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics and Data Diagnostics

Table 4 Descriptive Results and Normality Test

Variables	*Obs.*	*Descriptive Results*					*Normality Test*	
		Mean	Median	SD	Min	Max	Skewness	Kurtosis
Panel A: ESG disclosure								
ESGD	1,109	0.477	0.31	0.32	0.04	1	0.65	–1.09
ENVD	1,109	0.347	0	0.45	0	1	0.68	–1.45
SOCD	1,109	0.530	0.29	0.34	0.14	1	0.51	–1.48
GOVD	1,109	0.559	0.57	0.29	0.28	1	–0.05	–0.49
Panel B: Independent and Moderating variables								
INSI (%)	1,109	22.185	15.91	19.79	0	70.92	0.90	–0.23
MA_Score	1,109	0.732	0.69	0.38	0.05	1.80	0.87	0.82
Panel C: Control variables								
COSZ	1,109	15.622	15.37	1.66	11.83	20.92	0.64	0.04
COGR (%)	1,109	1.361	–1.72	25.13	–38.69	59.37	1.36	–1.72

Table 4 presents the descriptive statistics for the ESG measures (panel A), the independent and moderating variables (panel B), and the control variables (panel C). In panel A, the values for ESG range from 0 to 1. Some companies have zero environmental scores, while their social, governance, and overall ESG scores concurrently exceed zero. The mean value of ESG was 0.477, with a maximum value of 1 and a minimum value of 0.04. Regarding the ESG components, the descriptive analysis reveals that governance has the highest mean value (0.559 scores), followed by social (0.530 scores), while environmental has the lowest mean value among the companies (0.347 scores).

Institutional ownership in Thailand, with a mean institutional investor of 22.185%, is noted, along with descriptive statistics for the moderator variable (CEO's managerial ability) having a mean of 0.732 in panel B. Panel C provides descriptive statistics for control variables. Notably, the firms in the sample exhibit firm growth on average (mean: 1.361%; maximum: 59.37%, minimum: –38.69%). The average company size, measured by market capitalization, is 33,056 million Bath (log nature: 15.622), indicating investment opportunities in companies during the Covid-19 pandemic.

As depicted in Table 4, tests for skewness and kurtosis were conducted to assess the normality of the data. The results indicate that all skewness and kurtosis values fall between –2 and +2, suggesting sufficient evidence of a normal distribution (George & Mallery, 2019).

4.2 Variables and Model Diagnostics

The validity of the linear model hinges on the hypothesis that the independent variables are uncorrelated. High multicollinearity tends to inflate the standard errors of the calculated coefficients. Independent variables (X) and moderator variables (W) often exhibit high correlation. Averaging the independent and moderator variables (X*W) mitigates this correlation (Hayes & Scharkow, 2013; Hayes, 2018; Hayes, 2022)

To assess the collinearity of the independent variables, the variance inflation factor (VIF) was used. According to Pinheiro et al. (2024), a VIF exceeding 10 indicates a significant multicollinearity issue for the independent variable in question. The model reveals that the VIF values for all independent variables are less than 10, indicating no significant collinearity. Specifically, the VIF values range from 0.787 to 0.964 for all independent variables, further confirming the absence of significant collinearity (Hair, 2009).

Moreover, the presence of heteroskedasticity is a crucial assumption of regression analysis. The White test was employed to examine for heteroscedasticity. The White test p-values for the four performance measures were all above the conventional significance level of 0.05 (ESGD = 0.492, ENVD = 0.479, SOCD = 0.453, and GOVD = 0.328), leading to accept the null hypothesis that the models did not exhibit heteroscedasticity.

Finally, the Durbin-Watson (DW) test was conducted to investigate the presence of autocorrelation in the research models. The DW values for all four models fell within the range of 1.5–2.5 (ESGD = 1.935, ENVD = 1.937, SOCD = 1.945, and GOVD = 1.973), indicating no autocorrelation issue that could impact the regression results.

4.3 Correlation Results

Table 5 Pearson's Correlation Matrix

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
1. INSI	1.000	.105**	−0.047	0.042	.086*	.110**	.086*	.095**	.118**
2. MA_Score		1.000	.187**	.240**	.102**	.081*	0.071	.086*	0.065
3. INSI × MA_Score			1.000	0.048	0.068	.138**	.143**	.124**	.097**
4. COGR				1.000	.110**	0.055	0.048	0.051	0.050
5. COSZ					1.000	.455**	.449**	.446**	.322**
6. ESGD						1.000	.938**	.952**	.792**
7. ENVD							1.000	.940**	.543**
8. SOCD								1.000	.619**
9. GOVD									1.000

Notes: This table represents the correlation coefficients between Institutional investors, CEO's managerial ability, ESG disclosure and control variables for the whole sample. The variables are defined in Table 2 and Table 3. ** and * Indicates significance at 0.01 and 0.05 level, respectively

Table 5 presents the results of the Pearson correlation matrix. Pearson correlation is typically utilized to illustrate the correlation between continuous variables that exhibit a pattern of normal distribution (Hair, 2009). The correlation matrix elucidates the significant relationships between the key variables in this research. Both institutional investors (INSI) and the interaction term (INSI × MA _score) demonstrated positive associations with disclosure (ESGD, ENVD, SOCD, and GOVD). It is worth noting that the correlation of any pair of predictor variables should not exceed 0.7. In this study, the predictor variables did not exhibit multicollinearity issues, with the highest Pearson correlation recorded at 0.24.

4.4 PROCESS Analysis Results

Table 6 Testing of Hypothesis (Direct Effect and Two-Way Interaction) Hayes (2018) Model Number 1

Variables	ESGD		ENVD		SOCD		GOVD	
	β	*S.E.*	β	*S.E.*	β	*S.E.*	β	*S.E.*
INSI	0.001	0.001	0.001	0.001	0.001	0.001	.001*	0.001
MA_Score	−0.006	0.029	−0.007	0.042	−0.001	0.031	−0.007	0.029
INSI × MA_Score	.003*	0.001	.005**	0.002	.003*	0.002	0.002	0.001
COGR	0.002	0.042	−0.007	0.059	−0.007	0.045	0.014	0.041
COSZ	.095**	0.007	.1319**	0.009	.098**	0.007	.060**	0.006
Industry effect	*Yes*		*Yes*		*Yes*		*Yes*	
Annual effect	*Yes*		*Yes*		*Yes*		*Yes*	
constant	−0.96	0.106	−1.667	0.15	−0.95	0.113	−0.347	0.103
R-square	28.77%		28.49%		26.86%		26.39%	
ΔR-square	.61%, $p < .05$		.66%, $p < .01$		.42%, $p < .05$		.33%, $p < .05$	

Note(s): * p < .05, ** p < .01, D.V. = Disclosure, I.V. = INSI, Mod = MA_Score

*, ** Correlation is significant at the .05, .01 level (2-tailed)

Table 6 provides an explanation of the findings from Hayes's process regression analysis. Institutional investors have no significant relationship with ESGD, the total score in Hypothesis 1, and ENVD and SOCD in Hypothesis 2–3. These results show that ***H1–H3 is not supported***. However, Hypothesis 4 shows the effect of institutional investors on GOVD. The regression coefficient was positive and significant (β = 0.001; $p < 0.05$). The model was significant and explained 26.39% variance in the governance disclosure. These results ***support H4***, that institutional investors are a significant predictor of governance disclosure.

The two-way interaction hypothesis (H5–8) were tested by using model number 1 of Hayes (2018) PROCESS macros, and the results are presented in Table 6. The regression coefficient of interaction term (INSI x MA_Score) was positive and significant with ESGD, ENVD and SOCD (β institutional investors x CEO's managerial ability, = 0.003; $p < 0.05$, $0.005 < p$ 0.05 and 0.003; $p < 0.05$, respectively). These results support ***H5–7***, that CEO's managerial ability moderates the relationship between institutional investor and ESGD, ENVD and SOCD. The model was significant and explained 28.77%,

28.49% and 26.86% variance in the ESG, environmental and social disclosure. The visualization of two-way interaction is presented in Figure 2. Hypothesis 8, however, demonstrates the CEO's managerial ability as a non-moderator in the relationship between institutional investors and GOVD. These results show that H8 is not supported.

Regarding the control variables, firm size positively affects ESG, but firm growth is insignificant to ESG.

Table 7 Conditional Effect of Predictor of The Moderator in Hayes (Process)

	Effect Size	Bootstrap SE	LLCI	UCLI
Conditional M_Score (moderator) effect of INSI on ESGD				
–1 SD	–0.005	0.007	–0.020	0.009
Mean	0.009	0.005	–0.001	0.019
+ 1SD	0.023**	0.008	0.008	0.038
Conditional M_Score (moderator) effect of INSI on ENVD				
–1 SD	–0.013	0.01	–0.033	0.008
Mean	0.008	0.007	–0.006	0.023
+ 1SD	0.029**	0.011	0.008	0.051
Conditional M_Score (moderator) effect of INSI on SOCD				
–1 SD	–0.005	0.008	–0.020	0.010
Mean	0.008	0.006	–0.003	0.018
+ 1SD	0.020*	0.008	0.004	0.036

Note(s): n = 1,109; SE = standard error; LLCI = lower limit confidence interval; UCLI = upper limit confidence interval

** and * Indicates significance at 0.01 and 0.05 level, respectively

The results from the conditional effect of the moderator predictor in the Hayes process are shown in Table 7. They show that there is a link between the CEO's management ability and institutional investors with different amounts of ESGD. As ESGD levels rise, the relationship between managerial ability and institutional investors strengthens. The coefficients are –0.005 when the SD is one standard deviation (SD) below the mean, 0.009 when the SD is the mean, and 0.023 when the SD is one SD above the mean. Furthermore, the findings suggest a similar trend for ENVD and SOCD.

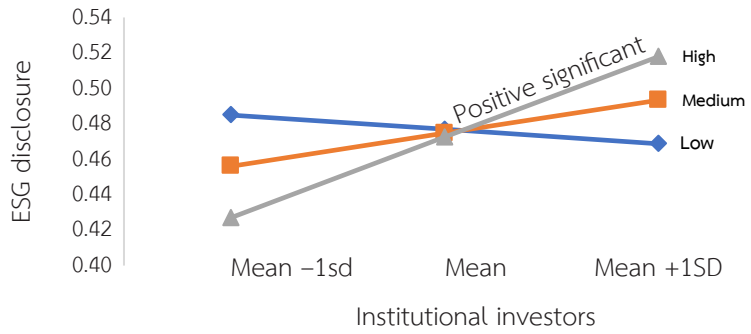

Figure 2 CEO's Managerial Ability as a Moderator in the Relationship between Institutional Investor and ESG Disclosure

Figure 2 shows that when the CEO's managerial ability is high, institutional investors result in higher ESG disclosure compared to lower resistance. When "managerial ability" decreases from "high" to "low," lower managerial ability results in a much lower level of ESG when compared to higher levels of the CEO's managerial ability. The difference in the slopes of the curves is visible, and this supports the moderation hypothesis (H5, H6, and H7 are similar).

It appears that institutional investors may not enhance corporate sustainability disclosure performance, particularly in the environmental and social dimensions. This suggests that institutional ownership might not play a significant role in promoting sustainability disclosure practices in the emerging economy of Thailand, which contradicts previous research findings (e.g Cornett et al.; 2007; Kim et al., 2020) Rashid, 2020; Jiang et al., 2022). However, evidence suggests that institutional investors have a positive impact on governance disclosure during the COVID-19 pandemic.

Considering the influential role of the CEO's managerial ability, the results suggest that institutional investors positively influence ESG performance disclosure. The close cooperation between institutional shareholders and top managers may lead to enhanced ESG levels that meet stakeholder expectations (Velte, 2020b; Aluchna et al., 2022; Giordino et al., 2024). Furthermore, companies involving institutional investors may be more responsive to stakeholder pressure, and institutional owners contribute to improved corporate disclosure behavior. However, the results do not strongly support the relevance of institutional investors to governance performance disclosure but rather highlight the importance of the CEO's managerial ability.

CEO's managers' ability to engage in ESG activities serves to mitigate inter-group bias, particularly in terms of fostering trust and legitimacy and overcoming resource disadvantages associated with being viewed as external stakeholders (Peng & Isa, 2020). This highlights the fact that managerial

ability facilitates the disclosure of sustainability, environmental, and social performance information. Furthermore, companies with highly competent top management demonstrate greater transparency in their disclosure practices (Chen & Chen, 2020). In essence, superior management competence serves as a crucial tool in enhancing transparency, reducing information asymmetry, fostering sustainability-related initiatives, and communicating them to diverse stakeholders (Chuang, 2004; Bhandari et al., 2022). Additionally, top management is well-versed in legitimacy standards and operates in accordance with prevailing social contracts to mitigate legitimacy gaps that may impact the company's operations. (Jouber, 2022)

5. CONCLUSION AND CONTRIBUTIONS

The goal of this study, which is based on agency theory, upper-echelon theory, and resource-based view theory, is to find out how institutional investors affect how Thai listed companies report their ESG performance. Additionally, it examines the CEO's management ability as a moderating factor in the relationship between institutional investors and ESG. Utilizing Hayes' (2013) PROCESS regression models, this research illustrates the impact of the CEO's managerial ability variables on the aforementioned relationship. This study's conceptual and theoretical framework led to the formulation of hypotheses confirming the positive effect of ESG during crises, positing it as a protective measure for stakeholders in adverse circumstances.

Addressing the first objective and corresponding hypotheses 1–4, the findings indicate that institutional investors do not significantly influence overall ESG, environmental, and social performance disclosure. Consequently, hypotheses 1–3 were not supported. However, institutional investors exhibited a positive and statistically significant effect on governance performance disclosure, thus supporting hypothesis 4. The study reveals that companies with a higher proportion of institutional investors tend to demonstrate better governance performance disclosure, contrasting with those with fewer institutional investors, which exhibit lower governance performance disclosure. Consequently, strong institutional shareholders encourage regulators to promote the establishment of robust corporate governance systems in Thai companies. This approach aims to safeguard the interests of both the company and its shareholders (Clark et al., 2015; Giordino et al., 2024; Jin et al., 2024; Lopez-de-Silanes et al., 2024).

For the final objective, which entails analyzing the moderating effect of the CEO's managerial ability on the influence of institutional investors on ESG, Hypotheses 5–8 propose that managerial ability influences the impact of institutional investors on ESG, indicating that the effect of institutional investors on ESG performance disclosure strengthens with increasing the CEO's managerial ability.

The study observed that the CEO's managerial ability positively affects ESG, environmental, and social performance disclosure, thereby supporting hypotheses 5–7. However, managerial capability did not moderate the impact of corporate governance performance, leading to a lack of support for hypothesis 8. The positive influence of institutional investors on ESG, environmental, and social performance disclosure amplifies as managerial ability increases. This effect is particularly pronounced when management capabilities exceed the average. Institutional investors, on the other hand, exhibit no significant influence on ESG, environmental, and social performance disclosure when management capabilities are average or below average. This study contributes to the literature by revealing that institutional investors enhance ESG, environmental, and social performance only in companies with high CEO management ability. (Dyck et al., 2019; H. Chen et al., 2023; Kao et al., 2024)

Furthermore, this study observed that corporate growth does not affect ESG, environmental, social, and governance performance disclosure, which contradicts the findings of J. Chen & Chen (2020). These results suggest that regardless of whether a company experiences low or high growth, effective managerial ability can lead to an increase in ESG. High managerial ability indicates stable growth and is associated with resource management proficiency, leading to varying degrees of success in integrating ESG resources into practice (Jouber, 2022). Therefore, companies need not compromise their ESG performance based on corporate growth (Kao et al., 2024). Companies faced a decline in sales during the 2020–2022 period studied, coinciding with the COVID-19 pandemic, and failed to achieve significant sales growth. Market capitalization, indicative of company size, positively influences ESG, as confirmed by J. Chen & Chen (2020) research. This implies that larger companies tend to exhibit increased ESG. Conversely, smaller companies may experience a decline in ESG.

This study contributes to several theoretical implications in the current literature. The influence of institutional investors and managerial ability on ESG performance is a topic of academic interest, and this study broadens the scope of current research on institutional investors, managerial ability, and sustainable performance. The study adds to what is known about how institutional investors and the CEO's managerial ability affect ESG performance disclosure by looking at publicly traded companies in emerging markets. These markets often have very different ESG practices than developed markets. The study's findings underscore the moderating role of management's ability in the impact of institutional investors on ESG.

Future research could focus on how high managerial ability handles conflicts and how much they sustainably perform under the specific contexts of dominant versus minority shareholders. Furthermore, investigations are required into the moderating effect managerial ability has on institutional investor-ESG under different firm sizes. Furthermore, I encourage future research to develop a more responsive

theory that will shed light on how to reduce agency problems or corporate governance mechanisms other than institutional investors that affect ESG.

The findings provide valuable insights for regulators, policymakers, shareholders, investors, and stakeholders. They reveal that managerial ability moderates the impact of institutional investors on ESG performance disclosure; companies with higher managerial ability are more likely to experience the institutional investor's influence, contributing to higher ESG. Therefore, stakeholders should consider companies with a high percentage of institutional investors and strong management teams as potential indicators of high ESG, particularly during times of crisis.

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Appendix 1

The calculation of CEO's managerial ability.

The first stage, estimates total firm efficiency score, efficiency score measurement is as in equation (2).

$$\text{Max}\theta = \frac{\text{Sales}}{\text{v1CGS} + \text{v2SG\&A} + \text{v3OPL} + \text{v4PPE} + \text{v5GW} + \text{v6OIA} + \text{v7R\&D}} \quad (2)$$

where, Maxθ is the efficiency score for which the values range from 0 to 1. Sales is the output variable, and the seven inputs indicators are:

(1) cost of goods sold (CGS);

(2) selling, general and administrative costs (SG&A);

(3) operating lease expense (OPL);

(4) property, plant and equipment-net (PPE);

(5) goodwill from business combination (GW);

(6) other intangible assets-net (OIA); and

(7) research and development expenses (R&D)

The second stage, a regression analysis is used to separate management efficiency, firm efficiency as in equation (3).

$$\begin{aligned}\text{Firm efficiency} = {} & \beta + \beta_1 \text{lnSize} + \beta_2 \text{Marketprice} + \beta_3 \text{Freecashflow} + \beta_4 \text{lnAge} + \beta_5 \text{Segment} \\ & + \beta_6 \text{Foreigncurency} + \text{Subsector fixed effect} + \text{Year fixed effect} + \varepsilon \end{aligned} \quad (3)$$

Size refers to the book value of total assets. Market price represents the company's sales as a percentage of the total sales of the subsector. Free cash flow is defined as cash flow from operations minus capital expenditures, with a value of 1 when free cash flow is positive and 0 when it is not. Age denotes the number of years the companies have been listed on the Stock Exchange of Thailand. Segment pertains to the business segment, referring to the product segment concentration according to the model of Bushman et al., (2004). Foreign currency is a dummy variable with a value of 1 if the firm provides a nonzero foreign currency adjustment value and a value of 0 if not.