“Factors affecting the readiness for ESG reporting in Vietnamese enterprises”

AUTHORS	Dung Thi Phuong Nguyen Lien Thi Huong Nguyen Anh Thi Mai Nguyen Long Le Thanh Phan

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Dung Thi Phuong Nguyen (Vietnam), **Lien Thi Huong Nguyen** (Vietnam), **Anh Thi Mai Nguyen** (Vietnam), **Long Le Thanh Phan** (Vietnam)

FACTORS AFFECTING THE READINESS FOR ESG REPORTING IN VIETNAMESE ENTERPRISES

Abstract

Countries around the world are taking further steps toward transparency and corporate sustainability. Environmental, social, and governance (ESG) reporting will be required for all firms listed on European exchanges as of 2026 according to the Corporate Sustainability Reporting Directive. Meanwhile, the companies' rate in Vietnam reporting and disclosing ESG information is still limited. There is an empirical gap between the theory and practices of ESG reporting in Vietnam. Therefore, this study aims to investigate the determinants affecting the readiness for ESG reporting in Vietnamese enterprises. Survey questionnaires and quantitative analysis are employed based on the structural models using SmartPLS4 software to analyze the sample of 169 manufacturing, commercial, and service enterprises in Vietnam. The findings show that accountant qualifications, management processes, women on management boards, and information technology systems positively affect Vietnamese firms' readiness to report ESG. The relationship between business executives' ESG awareness, public media pressure, governmental guidelines, and the readiness for ESG reporting is not statistically supported. Based on the research results, Vietnamese enterprises should increase women's participation on management boards, facilitate professional development and training for accountants, invest in information technology systems, and improve management processes to enhance the adoption of ESG reporting in Vietnam.

Keywords environmental, social, and governance reporting, sustainability reporting, Vietnam

JEL Classification M14, M40, M41, Q56

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Dung Thi Phuong Nguyen, Ph.D., Senior Lecturer, School of Economics and Management, Hanoi University of Science and Technology, Vietnam.

Lien Thi Huong Nguyen, Ph.D., Senior Lecturer, College of Business and Management, VinUniversity, Vietnam. (Corresponding author)

Anh Thi Mai Nguyen, Ph.D., Senior Lecturer, School of Economics and Management, Hanoi University of Science and Technology, Vietnam.

Long Le Thanh Phan, MA, CEO, Vietnam Institute of Directors (VIOD), Vietnam.

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INTRODUCTION

Nations worldwide have been currently facing global issues such as climate change, energy poverty, and resource depletion (European Commission, 2021). Businesses are proactively accessing the most popular international practices on environmental, social issues, and governance (ESG) to apply them in their businesses. ESG guides companies and other stakeholders in understanding how to manage risks and take advantage of opportunities in these three ESG aspects.

At the COP26 Climate Summit in Glasgow, Scotland, Vietnam declared its intention to achieve net zero emissions by 2050. Therefore, the Vietnamese government has prioritized issuing policy mechanisms, which is the first step in implementing this commitment. The Vietnam Business Council for Sustainable Development developed the Corporate Sustainability Index (CSI) with 130 indicators in 2022 (Ly, 2022). According to current regulations in Vietnam, only listed firms with revenue of over 100 billion VND are required to disclose ESG. However, to meet current market needs, especially export markets, many small and medium businesses in Vietnam are interested in and wish to apply ESG in production and business activities.

The report on Readiness for ESG Practices in Vietnam conducted by PwC (2022), one of the Big4 auditing companies in the world, shows that up to 80% of businesses have commitments or plan to practice ESG in the next 2-4 years. From the investor's viewpoint, VinaCapital, one of the leading investment funds in Vietnam, clearly indicates that they will assess the ESG performance of firms they consider investing in and include significant ESG concerns in financial analysis (VinaCapital, 2022). The companies with ESG integrated into the strategy would have been publicly traded at higher share prices and with lower capital costs (Chen et al., 2023). Therefore, implementing ESG reporting has become a necessary trend for businesses to develop sustainably. However, ESG is still a new topic that needs to be promoted in Vietnamese firms, especially in non-public companies, as well as small and medium enterprises (SMEs). Understanding the factors that affect the readiness for ESG reporting will help businesses and stakeholders proactively have action plans to accelerate the process of applying ESG in Vietnam.

1. LITERATURE REVIEW

The term "ESG" was first used in a report titled "Who Cares Wins" by the United Nations Global Compact in 2004 (United Nations, 2004). IFC (2021) defines ESG as a framework covering governance, social, and environmental aspects that investors and businesses take into account when making decisions about investments and managing their operations in terms of opportunities, risks, and impacts. ESG is typically a criterion and approach that investors employ to assess the companies' behavior and their potential financial performance (Weston & Nnadi, 2023).

First, environmental criteria evaluate issues related to businesses' influence on the living environment, such as greenhouse gas emissions, water and waste handling, raw material supply, and impacts from climate change. Second, social criteria evaluate issues related to businesses' diversity, equity, and inclusion internally and with stakeholders, such as labor management, security and confidentiality data, and community relations. Third, governance criteria evaluate issues related to corporate governance, business ethics, intellectual property rights protection, and compliance with legal regulations (EBA, 2021).

Several studies have shown that ESG reporting can enhance transparency, increase corporate reputation and customer loyalty, lower expenses, improve business performance, and strengthen competitive advantage (Ioannou & Serafeim, 2017; Ellili, 2022). Along with opportunities, ESG also brings many challenges to businesses, such as a lack of robust ESG data, concern about performance and sacrificing returns, and concerns over greenwashing (Henisz et al., 2019). ESG practices are increasingly becoming a mainstream strategy, even mandatory in some countries, as ESG investment in 2020 exceeded US$35,000 billion (Bloomberg Intelligence, 2022). In addition, ESG is increasingly asserting its position in the world of investment, as only 13% of investors worldwide suppose ESG is a short-term movement. This shows that most investors view ESG as an inevitable trend in long-term investing (Ground, 2022). Furthermore, the European Banking Authority (EBA) indicates that ESG elements may positively or negatively impact the financial performance of an organization, sovereign, or a person (EBA, 2021).

A few main theories, such as stakeholder, signal, and institutional theories, have been employed to support the substantial increase in recent studies on ESG reporting. According to stakeholder theory, a company's success comes from meeting its stakeholders' needs (Freeman, 2010). Everyone interested in, connected to, or impacted by the company is considered a stakeholder in the ecosystem. This includes shareholders, employees, vendors, customers, government agencies, community, and others. ESG information is significant to a wide range of stakeholders. Based on stakeholder theory, corporate managers can determine which stakeholders are truly important to their companies when it comes to ESG reporting. Therefore, ESG information is released for strategic purposes to show that businesses are adhering to and supporting a variety of particularly influential stakeholders (Gray et al., 2003).

Signal theory posits that big firms disclose more information to users, which can help attract more investors, thereby increasing the value of the com-

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pany's stock (Spence, 1973; Rezaee, 2016). ESG reporting serves as a mechanism for the voluntary disclosure of ESG performance metrics and information on sustainability initiatives (Lys et al., 2015). In practice, businesses utilize this voluntary non-financial disclosure to communicate their sustainability successes, validate their existence, and uphold their corporate reputation since it helps investors estimate economic profitability (Acs & Audretsch, 2010).

Institutional theory is a common framework used in the studies of ESG reporting (Campbell, 2007). This theory focuses on how social, political, and economic processes affect how businesses function and acquire legitimacy (Meyer & Rowan, 1977). Flammer et al. (2019) argued that companies with better ESG scores tend to apply sustainable activities and abide by sustainability standards. This theory provides a better understanding of the various institutional variables influencing an organization's ESG reporting (Higgins & Larrinaga, 2014). Businesses that operate in nations with comparable institutional systems typically adopt comparable behavioral patterns, such as moral behavior (Scott, 1995).

Based on signal theory, business executives' viewpoints on corporate organizational behavior can significantly influence firm performance. According to Huang et al. (2020), executives' environmental awareness positively impacted their firms' technological innovation, and they invested more in research and development to achieve higher technological green innovation. Previous studies analyzed the essential role of executive cognition in motivating green technology innovation (Tan & Zhu, 2022). Executives' ESG awareness can offer technology and resources to ensure enterprises' green innovation practices and raise their degree of green innovation.

Public media pressure affects companies' ESG reporting. According to Buniamin et al. (2018), the more urgent the public media interest, for example, time sensitivity or meeting stakeholder needs, the greater the engagement level of ESG reporting perceived by managers. When managers perceive ESG information as necessary and needing public media attention, they report their ESG activities to society. In contrast, companies' leaders think that any ESG information damages companies, so they tend not to report it to outsiders.

Previous studies indicated a positive correlation between board gender diversity and ESG disclosure and reporting (Bear et al., 2010). Considering stakeholder theory, Arayssi et al. (2016) found a connection between companies' good citizenship and the representation of women on corporate boards. Kamaludin et al. (2022) confirmed that women on the board would be a catalyst to get businesses to prioritize ESG disclosure and sustainability activities. Hillman et al. (2002) found that women directors took into account the interests of companies' various stakeholders. There was a greater awareness of sustainability issues among women who served on boards (Bear et al., 2010). Wang and Coffey (1992), Williams (2003), and Post et al. (2011) stated that companies with a higher proportion of female board members tended to be more philanthropic and charitable, and they also appeared to support more environmental efforts. Furthermore, women were typically associated with nurturing qualities and greater care for social issues (Arayssi et al., 2016; Bear et al., 2020). Having women on boards shows the social awareness of gender diversity in companies (Kathy Rao et al., 2012; Kiliç et al., 2015; Velte, 2016). Peng and Chandarasupsang (2023) found that female directors are significantly and positively associated with ESG practices, especially in firms operating in less developed regions.

ESG reporting guidelines have arisen as institutional rules to address what content and methods are acceptable for disclosing sustainability information (Xenitidou & Edmonds, 2014; Gutiérrez-Ponce, 2023). These governmental guidelines give businesses a proper framework for disclosing sustainability information (Romito & Vurro, 2020). Darnall et al. (2022) found that Japanese firms applying ESG guidelines disclose 39% more sustainability information than those that do not adopt ESG reporting frameworks for their sustainability reports. Helfaya et al. (2023) demonstrated that the GRI had a significant impact on the full disclosure of ESG initiatives in Europe. According to institutional theory, organizational structures and activities are shaped by pressures from institutions such as governments, professional bodies, and the society surrounding organizations

(DiMaggio & Powell, 1983). Local authorities have policies to encourage the implementation of ESG, and state management agencies have issued documents to sanction environmental violations in the operation of enterprises.

Information technology (IT) was the most critical driver of organizational innovations and changes. IT had taken over the whole firm's activities (Granlund & Mouritsen, 2003). IT systems are essential for embedding ESG strategies into daily business operations and making strategic decisions. IT architecture driven by its ESG strategy is the backbone of an organization in facilitating measurement, management, and visualization of strategic and operational processes (Delloite, 2023). Phornlaphatrachakorn (2019) identified that information technological innovation influences the successful adoption of strategic management accounting in Thai organizations. Su et al. (2023) supposed that digital technology is environmentally friendly in green development to lower energy loss and raise operational effectiveness.

Companies' management processes also affect the readiness for ESG reporting. Suppose the company has clearly and thoroughly defined and implemented the ESG management process, including environmental quality standards, social responsibility, and data management. Sun and Saat (2023) found that intelligent manufacturing improves the quality of the corporate information system and ESG practices by saving the data in the safe data platform, forming electronic copies, and providing them to the data requester. Niu et al. (2022) and Nguyen et al. (2023) empirically found that ESG management strategies can enhance organizational sustainability and reporting.

Professional accountants significantly minimize environmental harm and ensure social responsibility is central to enterprises' sustainable development strategies. Manoj and Mini (2022) supposed that international certificated accountants like Certified Management Accountants (CMAs) play a vital role in the ESG application process since they can cooperate with experts in diverse fields like technical or legal, given the highly interdisciplinary nature of ESG integration. Ramadhan et al. (2023) also found that accountants play a significant role in ensuring more sustainable and eco-friendly operations and projects. According to Krasodomska et al. (2020), higher education and professional institutions could make accounting curriculums more practical in the contemporary business environment. Nguyen et al. (2019) stated that accountant qualifications have a favorable impact on the evolutionary stages of management accounting practices in Vietnamese firms.

In summary, the prior research results show many factors influencing ESG reporting. However, recent studies in Vietnam mainly focus on determinants affecting ESG information disclosure, such as firm size, profitability, foreign ownership ratio, state ownership ratio, board structure, pressure from stakeholders, operation fields, and development opportunities of businesses (Khanh & Tuan, 2018; Luc & Phuoc, 2019; Tran & Nguyen, 2021; Nguyet & Hai, 2023). Vietnamese businesses are currently learning how to apply ESG, so research on ESG reporting in Vietnam is still limited.

Therefore, the purpose of this study is to determine the factors impacting the readiness for ESG reporting in Vietnamese companies, providing further empirical evidence on sustainability development in emerging markets. Based on the relevant theories and literature review, the following hypotheses are proposed:

H1: Business executives' ESG awareness positively affects the readiness for ESG reporting.

H2: Public media pressure positively affects the readiness for ESG reporting.

H3: Women's participation on management boards positively affects the readiness for ESG reporting.

H4: Governmental guidelines positively affect the readiness for ESG reporting.

H5: Information technology systems positively influence the readiness for ESG reporting.

H6: Management processes positively influence the readiness for ESG reporting.

H7: Accountant qualifications positively influence the readiness for ESG reporting.

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2. METHOD

The primary data were collected via a survey using questionnaires. This survey aimed to collect information about the opinions of managers and employees on ESG reporting and the influential factors on the readiness for ESG reporting in Vietnamese companies. A sample size of 169 respondents was collected. The sampling method was convenient, utilizing an online questionnaire distributed to members of the board of management, board of directors, department managers, accountants, and employees working in manufacturing, commercial, and service companies in Hanoi and its surrounding areas through Google Forms.

Table 1 describes the sample characteristics such as working position, enterprise age, ownership, total assets, and listing status. Out of the 169 respondents in the survey, 76 individuals (45%) work in the service sector. Other respondents work in multi-industry, commercial, and manufacturing sectors. Nearly half of the survey participants (48.5%) are employed at enterprises with assets of over VND 100 billion, of which most work at unlisted firms (over 82%).

Table 1. Sample characteristics

Characteristics	Frequency	Percent
Industry		
Multi sectors	35	20.7
Services sector	76	45.0
Manufacturing sector	24	14.2
Commercial sector	34	20.1
Working positions		
Board of Management	37	21.9
Board of Directors	10	5.9
Employees	55	32.6
Department Managers	67	39.6
Firm Age		
Less than ten years	60	35.5
Ten years or more	109	64.5
Ownership		
Non-State-owned	137	81.1
State-owned	32	18.9
Total Assets		
Less than VND 20 billion	53	31.4
From VND 20 billion to VND 50 billion	18	10.7
From VND 50 billion to VND 100 billion	16	9.5
Above VND 100 billion	82	48.5
Listing Status		
Non listed companies	139	82.2
Listed companies	30	17.8
Total	**169**	**100.0**

The seven independent variables include executives' ESG awareness, public media pressure, women's participation in boards, governmental guidelines, information technology systems, management process, and accountant qualifications in ESG. The measurement of independent variables is provided in Table A1, Appendix A. To investigate these determinants' impact on ESG reporting readiness, a questionnaire used a five-point Likert scale. The analysis was conducted using SmartPLS 4 software, encompassing two fundamental models: measurement and structural. The measurement model, tested in SmartPLS, aims to uncover relationships between the variables. This process involves evaluating the measurement models, considering the quality of observed variables, the scale's reliability, convergence, and discriminant validity.

Based on the theoretical framework and the literature review, ESG reporting readiness is measured as whether the company has built an ESG reporting plan, prepared a budget and technology information system for ESG reporting, regularly paid attention to stakeholders to implement ESG, and reviewed periodically stakeholders' expectations of ESG reporting. In other words, the company is ready to show a good understanding of ESG practices and prepare the necessary conditions to enhance ESG reporting.

3. RESULTS

This study assesses the scale's reliability through Cronbach's Alpha and composite reliability. As shown in Table 2, the outer loading factors are greater than or equal to 0.6, demonstrating the observed variables are acceptable (Hair et al., 2014). Next, the results show Cronbach's Alpha coefficients varying from 0.857 to 0.97 and composite reliability coefficients ranging from 0.903 to 0.976. The threshold of 0.7 is acceptable for both Cronbach's Alpha and composite reliability (Devellis, 2012; Henseler et al., 2015; Bagozzi & Yi, 1988). In addition, the average variance extracted (AVE) values of the variables are 0.739, 0.659, 0.75, 0.825, 0.76, 0.76, 0.7, and 0.892, respectively, which are more than 0.5, indicating that convergent validity is relevant.

Table 2. Cronbach's Alpha and composite reliability

Items	Factor loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
AW – Business executives' ESG awareness				
AW1	0.831	0.912	0.934	0.739
AW2	0.882			
AW3	0.821			
AW4	0.895			
AW5	0.868			
PR – Public media pressure				
PR1	0.759	0.874	0.906	0.659
PR2	0.846			
PR3	0.857			
PR4	0.816			
PR5	0.777			
WM – Women on management boards				
WM1	0.797	0.916	0.937	0.75
WM2	0.878			
WM3	0.891			
WM4	0.89			
WM5	0.869			
GU – Governmental guidelines				
GU1	0.947	0.957	0.966	0.825
GU2	0.862			
GU3	0.933			
GU4	0.88			
GU5	0.919			
GU6	0.903			
IT – Information technology systems				
IT1	0.888	0.921	0.94	0.76
IT2	0.848			
IT3	0.915			
IT4	0.828			
IT5	0.876			
MP – Management processes				
MP1	0.898	0.921	0.94	0.76
MP2	0.872			
MP3	0.855			
MP4	0.88			
MP5	0.852			
AC – Accountant qualifications				
AC1	0.873	0.857	0.903	0.7
AC2	0.859			
AC3	0.886			
AC4	0.718			
ESG reporting readiness				
ESGR1	0.947	0.97	0.976	0.892
ESGR2	0.951			
ESGR3	0.946			
ESGR4	0.935			
ESGR5	0.943			

It is recommended that differentiation be ensured when the square root of the average variance extracted (AVE) for every latent variable is greater than all correlations between them (Fornell & Larcker, 1981). Discriminant validity shows the degree of non-correlation between an indicator set for measuring one concept and an indicator set for measuring another concept. Table 3 indicates all the distinguishing variables have the square root of AVE higher than the corresponding correlation coefficient.

Table 3. Discriminant validity test

	AC	AW	ESGR	GU	IT	MP	PR	WM
AC	0.837							
AW	0.32	0.86						
ESGR	0.798	0.435	0.944					
GU	0.217	0.077	0.219	0.908				
IT	0.404	0.223	0.48	0.13	0.924			
MP	0.596	0.406	0.767	0.163	0.29	0.872		
PR	0.368	0.608	0.432	0.062	0.279	0.36	0.812	
WM	0.593	0.302	0.724	0.083	0.341	0.55	0.278	0.866

Note: AW – Business executives' ESG awareness; PR – Public media pressure; WM – Women on management boards; GU – Governmental guidelines; IT – Information technology systems; MP – Management processes; AC – Accountant qualifications; ESGR – ESG reporting readiness.

The structural model test begins with the consideration of the variance inflation factor (VIF) (which should be less than 5), *p*-values (less than 0.05), and *R*-square of every latent variable to consolidate the prediction of the structural model. As shown in Table 4, the VIF results show that the indicators of the independent variable are all less than 5, so multicollinearity is unlikely to occur. Besides, business executives' ESG awareness, governmental guidelines, and public media pressure variables have *p*-values of 0.27, 0.294, and 0.368, respectively, which are more significant than 0.05, so the impact of these three variables is insignificant and will not affect ESG reporting readiness. The results show that accountant qualifications, information technology systems, management processes, and women on management boards positively affect ESG reporting readiness, respectively; *p*-values are significant and less than 0.05.

Table 4 shows the original sample results of beta values of four variables, accountant qualifications, information technology systems, management processes, and women on management boards, of 0.355, 0.123, 0.335, and 0.256, respectively. Thus, regarding the impact level from strong to weak on ESG reporting readiness, the ranking of the above four variables is accountant qualifications,

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Table 4. p-values and original sample results

Path	Beta	Standard Deviation (STDEV)	t-statistics	p-values	VIF
AC → ESGR	0.355	0.05	7.137	0.000	2.04
AW → ESGR	0.053	0.048	1.104	0.270	1.704
GU → ESGR	0.044	0.041	1.051	0.294	1.062
IT → ESGR	0.123	0.036	3.389	0.001	1.249
MP → ESGR	0.335	0.054	6.235	0.000	1.837
PR → ESGR	0.040	0.044	0.901	0.368	1.704
WM → ESGR	0.256	0.041	6.28	0.000	1.744

Note: R2 = 0.835. AW – Business executives' ESG awareness; PR – Public media pressure; WM – Women on management boards; GU – Governmental guidelines; IT – Information technology systems; MP – Management processes; AC – Accountant qualifications; ESGR – ESG reporting readiness.

management processes, women on management boards, and information technology systems. The *R2* adjusted value is 0.835, so the independent variables can explain 83.5% of the ESGR's variability.

4. DISCUSSION

The study results show that women's participation on management boards, information technology systems, management processes, and accountant qualifications positively affect the readiness for ESG reporting. However, business executives' ESG awareness, public media pressure, and governmental guidelines have no impact on ESG reporting readiness.

First, H1 is rejected. The business executives' ESG awareness does not positively influence the readiness for ESG reporting in Vietnam (p-value = 0.270 more than 0.05). This outcome contrasts with Huang et al. (2020), who stated that the environmental awareness of the leaders positively affects the technological innovation of companies. However, these findings agree with PwC (2022) that the barriers to implementing ESG in Vietnam are the lack of knowledge and government guidance, not the awareness of firm leaders.

Second, H2 is rejected. Public media pressure does not affect the readiness for ESG reporting in the surveyed enterprises (p-value = 0.368 more than 0.05). This finding contrasts with Buniamin et al. (2018), who found that public media interest increases the engagement level of ESG disclosure. Vietnamese companies might think that ESG information may damage them, so they tend not to report it to outsiders. Therefore, ESG reporting and disclosure are not affected by pressure from the public media.

Third, H3 is accepted. Women's participation on management boards positively impacts the readiness for ESG reporting (p-value = 0.000 less than 0.05). The number of women on the director and management boards improved the ESG disclosure levels in Vietnamese enterprises. The women's board participation positively influences ESG disclosure since women encourage companies to concentrate on sustainability activities and disclosure. In addition, having women on the board represents a socially responsible organization aware of gender diversity. This finding also confirms that female directors are positively correlated with the performance of ESG. This result aligns with Bear et al. (2010), Kiliç et al. (2015), Arayssi et al. (2016), and Kamaludin et al. (2022), who highlighted the influential role of women in boards on the ESG implementation.

Fourth, H4 is rejected. Governmental guidelines do not positively affect the readiness for ESG reporting in Vietnam (p-value = 0.294 more than 0.05). Companies do not suppose that government guidelines affect ESG reporting in Vietnam. The reason may be that the Vietnamese government recently promulgated various policies to encourage green projects and a circular economy (Ha, 2023). However, the interpretation of these guidelines is not fully provided in practice. This finding could not confirm the research results of Darnall et al. (2022) and Romito and Vurro (2020), who found that governmental guidance is a proper framework employed by companies to disclose their sustainability information publicly.

Fifth, H5 is accepted. Information technology systems positively influence the readiness for ESG reporting in Vietnamese enterprises (p-value = 0.000 less than 0.05). IT systems are essential for implementing ESG strategies into daily business operations and making decisions. Information technology systems play a crucial role in making ESG more effective and efficient. This finding aligns with Su et al. (2023) and Delloite (2023), indicating that information technology systems play an essential role in organizational innovations and changes in ESG.

Sixth, H6 is accepted. Management processes positively influence the readiness for ESG reporting (p-value = 0.000 less than 0.05). Intelligent manufacturing in production and operation improves the quality of businesses' information environment and ESG performance. This finding aligns with the conclusions drawn by Niu et al. (2022) and Nguyen et al. (2023), underscoring the positive influence of the management process on ESG.

Lastly, H7 is accepted (p-value = 0.000 less than 0.05). Accountant qualifications in ESG positively influence the readiness for ESG reporting in Vietnam. Accountants are the people who are directly involved in preparing ESG reports, so they significantly ensure the social responsibility of enterprises' sustainable development strategies. Internationally certified accountants play a crucial role in ESG reporting practices since they can cooperate with foreign experts and international standards in diverse fields, given the highly interdisciplinary nature of ESG integration. Moreover, accountants help businesses follow ESG principles integrated into their financial reporting. This finding aligns with the conclusions drawn by Manoj and Mini (2022) and Ramadhan et al. (2023), highlighting accountants' contribution to ESG reporting.

CONCLUSION

The purpose of this study was to explore the determinants influencing the readiness for ESG reporting in Vietnamese enterprises. The study results show that accountant qualifications, management processes, women on management boards, and information technology systems positively and significantly affect ESG reporting readiness in enterprises. First, this study emphasizes how important gender diversity is in corporate governance. Increasing women's involvement on management boards can foster sustainability initiatives and transparent disclosure practices within organizations. Second, these findings underscore the critical role of accountants in sustainability reporting efforts. Therefore, facilitating professional development and training for accountants can significantly enhance a company's preparedness for ESG reporting. Third, the significant influence of information technology systems and well-defined management processes suggests that Vietnamese companies should invest more in information technology systems and improve their management processes to enhance the adoption of ESG reporting. However, this study could not confirm the relationship between ESG readiness and business executive awareness, public media pressure, and governmental guidance. Despite the common belief in the critical role of executive awareness and public media pressure in other countries, this study shows that these two factors do not significantly influence ESG reporting readiness in Vietnam.

These findings provide insightful information on the dynamics of ESG reporting readiness within Vietnamese enterprises. By addressing the critical factors identified in this study, companies can strengthen their sustainability initiatives, improve transparency, and meet the evolving expectations of stakeholders and investors in an increasingly ESG-conscious business landscape. However, this study still has several limitations. First, the survey sample size of 169 companies is relatively small; there may be differences in ESG reporting practices between small, medium, and large-sized companies. Second, there may be other internal and external factors influencing ESG reporting in enterprises. Therefore, future research can expand the survey sample and explore new factors to obtain more in-depth research results.

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AUTHOR CONTRIBUTIONS

Conceptualization: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Data curation: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Formal analysis: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Funding acquisition: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.
Investigation: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Methodology: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.
Project administration: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Resources: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.
Software: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.
Supervision: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.
Validation: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Visualization: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.
Writing – original draft: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen, Anh Thi Mai Nguyen, Long Le Thanh Phan.
Writing – review & editing: Dung Thi Phuong Nguyen, Lien Thi Huong Nguyen.

REFERENCES

1. Acs, Z. J., & Audretsch, D. B. (Eds.). (2010). *Handbook of entrepreneurship research: An interdisciplinary survey and introduction* (pp. 165-182). New York: Springer. https://doi.org/10.1007/978-1-4419-1191-9
2. Arayssi, M., Dah, M., & Jizi, M. (2016). Women on boards, sustainability reporting, and firm performance. *Sustainability Accounting, Management and Policy Journal, 7*(3), 376-401. https://doi.org/10.1108/SAMPJ-07-2015-0055
3. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*, 74-94. https://doi.org/10.1007/BF02723327
4. Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics, 97*, 207-221. https://doi.org/10.1007/s10551-010-0505-2
5. Bloomberg Intelligence. (2022, January 24). *ESG May Surpass $41 Trillion Assets in 2022, But Not Without Challenges*. Retrieved from https://www.bloomberg.com/company/press/esg-may-surpass-41-trillion-assets-in-2022-but-not-without-challenges-finds-bloomberg-intelligence/
6. Buniamin, S., Ahmad, N. N. N., & Nazli Nik Ahmad, N. (2018). Public stakeholders' salience and esg reporting of Malaysian Plcs: Managers' perceptions. *European Proceedings of Social and Behavioural Sciences, 44*. https://doi.org/10.15405/epsbs.2018.07.02.14
7. Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review, 32*(3), 946-967. https://doi.org/10.5465/AMR.2007.25275684
8. Chen, S., Song, Y., & Gao, P. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of Environmental Management, 345,* Article 118829. https://doi.org/10.1016/j.jenvman.2023.118829
9. Darnall, N., Ji, H., Iwata, K., & Arimura, T. H. (2022). Do ESG reporting guidelines and verifications enhance firms' information disclosure? *Corporate Social Responsibility and Environmental Management, 29*(5), 1214-1230. https://doi.org/10.1002/csr.2265
10. Delloite. (2023). *IT architecture as an ESG accelerator*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/de/Documents/risk/ESG%20IT%20Architecture_Deloitte.pdf
11. Devellis, R. (2012). *Scale development theory and application*. New York: Sage Publications. https://doi.org/10.1111/peps.12499
12. DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological*

Review, 48(2), 147-160. http://dx.doi.org/10.2307/2095101

13. European Banking Authority (EBA). (2021). *EBA report on management and supervision of ESG risks for credit institutions and investment firms* (EBA/REP/2021/18) Retrieved from https://www.eba.europa.eu/sites/default/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf
14. Ellili, N. O. D. (2022). Impact of ESG disclosure and financial reporting quality on investment efficiency. *Corporate Governance: The International Journal of Business in Society, 22*(5), 1094-1111. https://doi.org/10.1108/CG-06-2021-0209
15. European Commission. (2021). *Communication from the commission to the European parliament, the Council, the European economic and social committee and the committee of the regions. 'Fit for 55': Delivering the EU's 2030 Climate Target on the way to climate neutrality*. Brussels. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0550&from=EN
16. Flammer, C., Hong, B., & Minor, D. (2019). Corporate governance and the rise of integrating corporate social responsibility criteria in executive compensation: Effectiveness and implications for firm outcomes. *Strategic Management Journal, 40*(7), 1097-1122. https://doi.org/10.1002/smj.3018
17. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 375-381. https://doi.org/10.2307/3150979
18. Freeman, R. E. (2010). Strategic management processes. In *Strategic Management: A Stakeholder Approach* (pp. 83-84). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9781139192675.007
19. Granlund, M., & Mouritsen, J. (2003). Special section on management control and new information technologies. *European Accounting Review, 12*(1), 77-83. https://doi.org/10.1080/0963818031000087925
20. Gray, R. H., Owen, D. L., & Adams, C. A. (2003). *Accounting and accountability: Changes and challenges in corporate social and environmental reporting*. London: Prentice Hall. Retrieved from https://durham-repository.worktribe.com/output/1123410
21. Ground, J. (2022). *ESG Global Study 2022.* Harvard Law School Forum on Corporate Governance. Retrieved from https://corpgov.law.harvard.edu/2022/06/17/esg-global-study-2022/
22. Gutiérrez-Ponce, H. (2023). Sustainability as a strategy base in Spanish firms: Sustainability reports and performance on the sustainable development goals. *Sustainable Development*, *31*(4), 3008-3023. https://doi.org/10.1002/sd.2566
23. Ha, N. (2023, May 1). *Việt Nam cam kết và hành động vì mục tiêu Net Zero vào năm 2050 [Vietnam commits and acts towards the goal of Net Zero by 2050]*. Labour Newspaper. (In Vietnamese). Retrieved from https://laodong.vn/thoi-su/viet-nam-cam-ket-va-hanh-dong-vi-muc-tieu-net-zero-vao-nam-2050-1134654.ldo
24. Hair, J. F., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate data analysis* (7th ed.). Upper Saddle River: Pearson Education.
25. Helfaya, A., Morris, R., & Aboud, A. (2023). Investigating the factors that determine the ESG disclosure practices in Europe. *Sustainability, 15*(6), Article 5508. https://doi.org/10.3390/su15065508
26. Henisz, W., Koller, T., & Nuttall, R. (2019). Five ways that ESG creates value. *McKinsey Quarterly*, *4*, 1-12. Retrieved from https://info.fiduciary-trust.com/hubfs/Fiduciary_Insights/McKinsey_Five_Ways_that_ESG_Creates_Value.pdf
27. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*, 115-135. https://doi.org/10.1007/s11747-014-0403-8
28. Higgins, C., & Larrinaga, C. (2014). Sustainability reporting: Insights from institutional theory. In *Sustainability accounting and accountability* (pp. 273-285). Routledge. Retrieved from https://www.taylorfrancis.com/chapters/edit/10.4324/9781315848419-29/sustainability-reporting-insights-institutional-theory-colin-higgins-carlos-larrinaga
29. Hillman, A. J., Cannella Jr, A. A., & Harris, I. C. (2002). Women and racial minorities in the boardroom: How do directors differ? *Journal of Management*, *28*(6), 747-763. https://doi.org/10.1177/014920630202800603
30. Huang, S. Z., Lu, J. Y., Chau, K. Y., & Zeng, H. L. (2020). Influence of ambidextrous learning on eco-innovation performance of startups: Moderating effect of top management's environmental awareness. *Frontiers in Psychology*, *11*, Article 1976. https://doi.org/10.3389/fpsyg.2020.01976
31. International Finance Corporation (IFC). (2021). *IFC ESG Guidebook*. Retrieved from https://www.ifc.org/content/dam/ifc/doc/mgrt/ifc-esg-guidebook.pdf
32. Ioannou, I., & Serafeim, G. (2017). *The consequences of mandatory corporate sustainability reporting* (Harvard Business School Research Working Paper 11-100). https://doi.org/10.2139/ssrn.1799589
33. Kamaludin, K., Ibrahim, I., Sundarasen, S., & Faizal, O. V. A. (2022). ESG in the boardroom: Evidence from the Malaysian market. *International Journal of Corporate Social Responsibility, 7*(1), Article 4. https://doi.org/10.1186/s40991-022-00072-2
34. Kathy Rao, K., Tilt, C. A., & Lester, L. H. (2012). Corporate governance and environmental reporting: An Australian study. *Corporate Governance*, *12*(2), 143-163. https://doi.org/10.1108/14720701211214052

http://dx.doi.org/10.21511/ppm.22(3).2024.21

35. Khanh, H. T. M., & Tuan, N. A. (2018). Determinants of sustainability reporting: An empirical research on Vietnamese Listed companies. *Science & Technology Development Journal: Economics - Law & Management, 2*(2), 62-73. https://doi.org/10.32508/stdjelm.v2i2.513

36. Kiliç, M., Kuzey, C., & Uyar, A. (2015). The impact of ownership and board structure on corporate social responsibility (CSR) reporting in the Turkish banking industry. *Corporate Governance*, *15*(3), 357-374. https://doi.org/10.1108/CG-02-2014-0022

37. Krasodomska, J., Michalak, J., & Świetla, K. (2020). Directive 2014/95/EU: Accountants' understanding and attitude towards mandatory non-financial disclosures in corporate reporting. *Meditari Accountancy Research*, *28*(5), 751-779. https://doi.org/10.1108/MEDAR-06-2019-0504

38. Luc, T. H., & Phuoc, T. T. (2019). Các yếu tố ảnh hưởng đến việc công bố báo cáo phát triển bền vững – Trường hợp các doanh nghiệp tại Việt Nam [Factors affecting the publication of sustainable development reports – The case of Vietnamese companies]. *Ho Chi Minh City Open University Journal of Science – Economics and Business Administration, 14*(2), 87-99. (In Vietnamese). https://doi.org/10.46223/HCMCOUJS.econ.vi.14.2.490.2019

39. Ly, H. (2022). *Program on benchmarking and announcing sustainable companies in Vietnam in 2022 kicked off.* Vietnam Business Forum. Retrieved from https://vccinews.com/news/47822/program-on-benchmarking-and-announcing-sustainable-companies-in-vietnam-in-2022-kicked-off.html

40. Lys, T., Naughton, J. P., & Wang, C. (2015). Signaling through corporate accountability reporting. *Journal of Accounting and Economics, 60*(1), 56-72. https://doi.org/10.1016/j.jacceco.2015.03.001

41. Manoj, P. K., & Mini, J. (2022). ESG reporting for business sustainability: Role of CMAs in internal audit. *The Management Accountant Journal, 57*(7), 68-71. http://dx.doi.org/10.33516/maj.v57i7.68-71p

42. Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology, 83*(2), 340-363. https://doi.org/10.17323/1726-3247-2011-1-43-67

43. Nguyen, T. M. A., Nguyen, T. P. D., & Pham, A. T. (2023). Exploring environmental, social, and governance (ESG) reporting at Vietnamese company case studies. *Proceedings of the 11th International Conference on Emerging Challenges: Smart Business and Digital Economy 2023 (ICECH 2023).* https://doi.org/10.2991/978-94-6463-348-1_4

44. Nguyen, T. P. D., Nguyen, T. H. L., Dao, P.D., & Dang, H.G. (2019). The determinants influencing managerial accounting in Vietnamese manufacturing and trading enterprises. *Academy of Accounting and Financial Studies Journal, 23*(5). Retrieved from https://www.abacademies.org/articles/The-Determinants-Influencing-Managerial-Accounting-in-Vietnamese-Manufacturing-and-Trading-Enterprises-1528-2635-23-5-463.pdf

45. Nguyet, N. T. T., & Hai, T. T. T. (2023). Ảnh hưởng của áp lực các bên liên quan đến mức độ công bố thông tin phát triển bền vững [The influence of stakeholder pressure on the level of sustainable information disclosure]. *Vietnam Accounting and Auditing Journal.* (In Vietnamese). Retrieved from http://vaa.net.vn/anh-huong-cua-ap-luc-cac-ben-lien-quan-den-muc-do-cong-bo-thong-tin-phat-trien-ben-vung/

46. Niu, S., Park, B. I., & Jung, J. S. (2022). The effects of digital leadership and ESG management on organizational innovation and sustainability. *Sustainability, 14*(23), Article 15639. https://doi.org/10.3390/su142315639

47. Peng, H., & Chandarasupsang, T. (2023). The effect of female directors on ESG practice: Evidence from China. *International Journal of Financial Studies, 11*(2), Article 66. https://doi.org/10.3390/ijfs11020066

48. Phornlaphatrachakorn, K. (2019). Effects of transformational leadership, organisational learning, and technological innovation on strategic management accounting in Thailand's financial institutions. *Asian Journal of Business and Accounting, 12*(1), 165-188. https://doi.org/10.22452/ajba.vol12no1.6

49. Post, C., Rahman, N., & Rubow, E. (2011). Green governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, *50*(1), 189-223. https://doi.org/10.1177/0007650310394642

50. PricewaterhouseCoopers (PwC). (2022). *Report on the level of readiness to practice ESG in Vietnam.* Retrieved from https://www.pwc.com/vn/en/publications/2022/pwc-vietnam-esg-readiness-2022-en.pdf

51. Ramadhan, Y., Resca, Y., Saputra, S., Diana, W., & Qamar, S. S. (2023). Literature study: The role of accountants in reporting environmental, social, and governance information. *International Journal of Social Service and Research, 3*(5), 1285-1289. https://doi.org/10.46799/ijssr.v3i5.384

52. Rezaee, Z. (2016). Business sustainability research: A theoretical and integrated perspective. *Journal of Accounting Literature, 36*(1), 48-64. https://doi.org/10.1016/j.acclit.2016.05.003

53. Romito, S., & Vurro, C. (2020). Non-financial disclosure and information asymmetry: A stakeholder view on US listed firms. *Corporate Social Responsibility and Environmental Management, 28*(2), 595-605. https://doi.org/10.1002/csr.2071

54. Scott, W. R. (1995). *Institutions and organizations: Ideas, interests, and identities*. Sage Publications. https://doi.org/10.3917/mana.172.0136

55. Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economic, 87*(3), 355-374. https://doi.org/10.2307/1882010

56. Su, X., Wang, S., & Li, F. (2023). The impact of digital transformation on ESG performance based on the mediating effect of dynamic capabilities. *Sustainability, 15*(18), Article 13506. https://doi.org/10.3390/su151813506

57. Sun, L., & Saat, N. A. M. (2023). How does intelligent manufacturing affect the ESG performance of manufacturing firms? Evidence from China. *Sustainability, 15*(4), Article 2898. https://doi.org/10.3390/su15042898

58. Tan, Y., & Zhu, Z. (2022). The effect of ESG rating events on corporate green innovation in China: The mediating role of financial constraints and managers' environmental awareness. *Technology in Society, 68,* Article 101906. https://doi.org/10.1016/j.techsoc.2022.101906

59. Tran, N. H., & Nguyen, T. T. H. (2021). Factors impacting on social and corporate governance and corporate financial performance: evidence from listed Vietnamese enterprises. *The Journal of Asian Finance, Economics and Business, 8*(6), 41-49. https://doi.org/10.13106/jafeb.2021.vol8.no6.0041

60. United Nations. (2004). *Who cares wins: The global compact connecting financial markets to a changing world.* Retrieved from https://www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf

61. Velte, P. (2016). Women on management board and ESG performance. *Journal of Global Responsibility*, *7*(1), 98-109. https://doi.org/10.1108/JGR-01-2016-0001

62. VinaCapital. (2022). *VinaCapital asset management. Responsible investment policy*. Retrieved from https://vinacapital.com/wp-content/uploads/2022/09/VCAM-RC-2022-Responsible-Investment-policy-public.pdf

63. Wang, J., & Coffey, B. S. (1992). Board composition and corporate philanthropy. *Journal of Business Ethics*, *11*, 771-778. https://doi.org/10.1007/BF00872309

64. Weston, P., & Nnadi, M. (2023). Evaluation of strategic and financial variables of corporate sustainability and ESG policies on corporate finance performance. *Journal of Sustainable Finance & Investment, 13*(2), 1058-1074. https://doi.org/10.1080/20430795.2021.1883984

65. Williams, R. J. (2003). Women on corporate boards of directors and their influence on corporate philanthropy. *Journal of Business Ethics*, *42*, 1-10. https://doi.org/10.1023/A:1021626024014

66. Xenitidou, M., & Edmonds, B. (Eds.). (2014). *The complexity of social norms*. Switzerland: Springer International Publishing. https://doi.org/10.1007/978-3-319-05308-0

http://dx.doi.org/10.21511/ppm.22(3).2024.21

APPENDIX A

Table A1. Measurement of variables and sources of reference

Variables	Sources of reference
AW – Business executives' ESG awareness	Huang et al. (2020), Helfaya et al. (2023)
AW1. The senior management understood and participated in the ESG implementation process.	
AW2. The company has a professional team that implements ESG.	
AW3. The company organizes training courses on ESG implementation for senior leaders.	
AW4. Senior management organizes sharing sessions on ESG implementation.	
AW5. The senior management is truly determined and fully supports the ESG implementation process.	
PR – Public media pressure on ESG	Buniamin et al. (2018)
PR1. Media pressure drives the implementation of ESG reporting.	
PR2. Shareholder pressure drives the implementation of ESG reporting.	
PR3. Local authority/community pressure drives the implementation of ESG reporting.	
PR4. Pressure from employees drives the implementation of ESG reporting.	
PR5. Pressure from external stakeholders such as customers, suppliers, and banks drives the implementation of ESG reporting.	
WM – Women on management boards	Bear et al. (2010); Kathy Rao et al. (2012); Kiliç et al. (2015); Arayssi et al. (2016); Kamaludin et al. (2022); Velte (2016); Peng and Chandarasupsang (2023)
WM1. Women on the Board of Directors or Board of Management pay more attention to the stakeholders' interests in the company.	
WM2. Women on the Board of Directors/Board of Management are more sensitive to environmental protection issues.	
WM3. Women on the Board of Directors/Board ofManagement are more sensitive to social issues.	
WM4. Women on the Board of Directors/Board of Management, with their personalities and perspectives, contribute to more effective corporate governance.	
WM5. The increase in the number of women on the Board of Directors/Board of Management helps increase the level and effectiveness of ESG disclosure.	
GU – Government guidance	Xenitidou and Edmonds (2014); Darnall et al. (2022); Helfaya et al. (2023)
GU1. State agencies have issued specific instructions on implementing environmental standards in the field of business operations.	
GU2. State agencies have provided specific instructions on implementing social standards in business operations.	
GU3. State agencies have provided specific instructions on implementing corporate governance standards in business operations.	
GU4. Professional associations have specific guidelines for implementing ESG in business operations.	
GU5. Local authorities have policies/documents to promote businesses' implementation of ESG.	
GU6. State agencies have issued documents sanctioning environmental violations in business operations.	
IT – Information technology systems	Granlund and Mouritsen (2003); Su et al. (2023)
IT1. The company has an infrastructure system in place to store and process ESG data.	
IT2. The company has software available to support ESG activities.	
IT3. Software related to corporate governance is updated regularly.	
IT4. The company is implementing/improving automation processes in its production and business activities.	
IT5. The company has a cybersecurity system in place to ensure that ESG is implemented.	
MP – Management processes	Niu et al. (2022); Sun and Saat (2023)
MP1. The company has clearly defined and implemented its ESG process.	
MP2. The company has built a set of environmental quality and data management standards.	
MP3. The company has built a set of standards on social responsibility.	
MP4. The company has built quality standards, and corporate governance is always updated.	
MP5. The company has regular meetings to evaluate ESG performance.	
AC – Accountant qualifications	Krasodomska et al. (2020) ; Manoj and Mini (2022); Ramadhan et al. (2023)
AC1. The company's chief accountant has been trained in ESG.	
AC2. Accountants are regularly updated on ESG.	
AC3. The expertise and skills of the chief accountant are sufficient to support ESG implementation.	
AC4. The chief accountant and accountants hold professional bodies' certificates.	
ESGR – ESG reporting readiness	Nguyen et al. (2023)
ESGR1. The company has set initiatives to develop ESG reporting in the future.	
ESGR2. The company has prepared the budget for the implementation of ESG reporting.	
ESGR3. The company has clearly identified technology applications to implement ESG reporting.	
ESGR4. The company has paid attention to the behavior of stakeholders when implementing ESG reporting.	
ESGR5. The company has regularly paid attention to the stakeholders' expectations when developing ESG reporting.	