FACTORS AFFECTING THE ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORTING CAPABILITY OF LISTED COMPANIES ON THE VIETNAMESE STOCK MARKET

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Abstract

Environmental, social, and governance (ESG) indicators and reports are becoming one of the crucial reports of businesses, particularly for listed companies. In the world, ESG is a new concept concerned with how to achieve sustainable development in enterprises in terms of environment, society, and corporate governance (Jin & Lei, 2023). In Vietnam, ESG is getting off with positive steps. Public companies first adopted and published the report. The government also implements ESG policies to develop the nation's sustainable economy. However, the application and publication of ESG reports in Vietnam still face many challenges, and the number of enterprises that disclose ESG remains limited. The study aims to explore and analyze the factors considered to have an impact on Vietnamese public companies' ability to disclose ESG reports. The research model is based on secondary data from 216 listed companies in the Vietnamese stock market, utilizing a combined logit and probit regression model and employing the Hosmer-Meleshow, Collins, and Durbin-Watson tests. The results indicate that business size has a positive impact, while financial leverage, business sector, and ownership structure have a negative impact. Profitability has no impact on ESG reporting capability. The results from this article can support the development of policies and regulations to promote ESG reporting by Vietnamese businesses and contribute to the sustainable development of the economy.

Keywords: Business Sector, Disclosure ESG Report, Financial Leverage, Profitability, Ownership Structure

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1. INTRODUCTION

In the face of severe impacts caused by the pandemic, environmental pollution, and climate change, the development of sustainable businesses based on environmental, social, and governance (ESG) criteria and reporting has become a global trend. This has also become a prime concern for investors worldwide in the present context (Dmuchowski et al., 2022).

The term ESG was first coined in 2004 in a report published by the United Nations Global Compact (2004). This is a set of standards based on three aspects: 1) environmental, 2) social, and 3) governance, used to measure factors related to the orientation and sustainable development activities of businesses.

After implementing ESG, businesses can disclose information to stakeholders through ESG reports. Presently, businesses worldwide can voluntarily report ESG information or may be legally required to do so. Companies might also be mandated to report their ESG activities within financial reports or through specialized reporting frameworks established by organizations such as the Global Reporting Initiative (GRI), the Carbon Disclosure Project (CDP), and the Sustainability Accounting Standards Board (SASB).

In addition, to evaluate the level of ESG practices among businesses, especially large enterprises, there are also groups of sustainable development indexes available. Globally, three widely used ESG measurement indexes are the Dow Jones Sustainability Index (DJSI), FTSE4Good Rating, and MSCI ESG ratings (Magnér, 2020). In Vietnam, the index reflecting the sustainable investment trend according to ESG criteria in Vietnam is the Vietnam Sustainable Development Index (VNSI), which was officially launched by the Ho Chi Minh City Stock Exchange (HOSE) for operation at the end of July 2017.

Today, with increasing awareness about sustainable development, ESG is gradually becoming more important in businesses. Numerous studies have indicated that companies focusing on ESG tend to achieve superior long-term results compared to their competitors. The benefits of good implementation of ESG include improving the company's operating efficiency and financial performance, thereby increasing its competitive advantage and expanding the business market. Additionally, it helps businesses optimize costs, enhance employee productivity, attract top talent, and increase capital inflow (Zhang & Jin, 2022).

Vietnam has also taken some important initial steps to catch up with the global ESG trend. Listed companies are pioneers for all businesses in general regarding sustainable development strategies. They are often companies with great global influence, high transparency, and reliable data and information. They play an important role in the economy and financial system as well as a special role in promoting sustainable development. By adopting ESG standards, these companies not only help reduce negative environmental and social impacts but also encourage other companies and industries to engage in sustainable practices. This can create a more proactive global action in environmental protection and social development.

Radzi et al. (2023) believe that more and more investors are interested and want to invest in companies with positive ESG activities. Therefore, by implementing ESG measures, listed companies can increase shareholder and investor confidence, increase their ability to attract new capital and increase share value, as well as help that company enhance its credibility and reputation. Thereby, they can build a positive image in the eyes of the public and build good relationships with customers, partners, and the community. Listed companies engaging with ESG not only bring economic benefits but also help create sustainable value.

The Vietnamese government is also actively implementing ESG policies to promote sustainable economic development of the country such as promulgating regulations related to ESG practices and disclosure in current legal documents such as the Enterprise Law 2020, Law on Environmental Protection 2020, Labor Law 2019, and Circular No. 96/2020/TT-BTC. This contributes to promoting the sustainable development of the national economy (Tran, 2023).

However, ESG disclosure still has limitations when facing major challenges such as large initial investment costs, and complexity as well as requiring time and effort from the entire enterprise when implementing. The number of listed businesses publishing ESG reports as annual reports is still quite limited, while around the world, this is a trend applied in many businesses.

Therefore, this article aims to find out the factors as well as the impact of those factors on the voluntary disclosure of ESG reports by listed companies on the Vietnamese stock market. This will provide a comprehensive overview of the factors and practices related to ESG implementation and reporting in Vietnamese businesses. In addition, seeing the opportunities and challenges of Vietnamese businesses in implementing ESG strategies, thereby, proposing solutions, and policies to encourage and support businesses to promote the practice and publish ESG reports in Vietnamese businesses as well as contribute to the sustainable development of the economy.

This study is organized as follows. Section 2 provides an overview and defines the studies on factors that might influence Vietnamese public businesses to publish ESG reports, along with hypotheses development. Section 3 details the data sample collection and the methodology used in the research. Section 4 presents the analysis results. Section 5 discusses the key findings, and Section 6 highlights the main outcomes, offering practical implications and recommendations.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Literature review

Recognizing the importance and role of applying ESG reports, numerous studies worldwide have delved into analyzing the factors influencing the level of adoption and disclosure of ESG reports among various businesses.

In Western studies, the common factors influencing the level of ESG reporting include: 1) profitability, 2) financial leverage, 3) business size, and 4) business sector (Wallace et al., 1994; Haniffa & Cooke, 2005; Adams et al., 1998; Deegan & Gordon, 1996). The above studies all show that all four factors have a positive impact on the level of application and reporting of non-financial information in general and ESG in particular. Besides, some other studies such as Waddock and Graves (1997) added liquidity as a factor, Secchi (2006) and Tuominen et al. (2008) point out that the ownership structure of a business also has an impact on ESG reporting capability.

Leventis and Weetman (2004) suggest that the factors mentioned are not correlated with the level of information disclosure, except for the factor of firm size, which exhibits a positive relationship. When comparing two European countries, the United Kingdom (UK) and the Netherlands, Camfferman and Cooke (2002) found significant differences in information disclosure regulations, accounting standards, compliance mechanisms, and financial systems between the two countries. Consequently, these factors exhibit varying degrees of influence. Therefore, while the audit type and profitability affect the level of information disclosure in the UK, these two factors do not demonstrate any relationship in the Netherlands, and conversely, with liquidity and financial leverage. Recently, the publication of Dixit et al. (2024) shows that the relationships between the board of directors of a business also affect the publication of ESG reports or the implementation of ESG targets. In addition, Capuano (2023) went even deeper by calculating whether the factors that businesses disclosed in their ESG reports were affected by the governance structure.

In Asia, Sharma et al. (2020) used the ordinary least squares (OLS) regression model to investigate the relationships between the extent of ESG reporting in 49 listed companies in India. The results revealed that, except for the profitability measured by return on assets (ROA) and return on capital employed (ROCE), which had a positive impact, the other factors, including: 1) market efficiency, 2) foreign investment, and 3) financial leverage, had a negative but insignificant influence on the level of ESG reporting. On the other hand, the study by Rahman and Alsayegh (2021) suggested that financial leverage has a positive relationship with the capacity of ESG reporting, as Asian firms with high debt financing are prone to attract attention from creditors and motivate them to disclose more information. Furthermore, the research supplemented other factors with a positive correlation with the extent of ESG reporting, including profitability and business size. These findings were derived from a survey of 1244 Asian companies spanning from 2005 to 2017, primarily from Japan, China, Hong Kong, South Korea, and Taiwan. In a Malaysian study, Hossain et al. (1994) found no significant relationship between financial leverage and information disclosure, whereas in New Zealand, financial leverage exhibited a positive correlation with the extent of information disclosure (Hossain et al., 1995). New research from Ghofar et al. (2024) investigates the role of women as a moderator variable in the relationship between governance and ESG performance during the COVID-19 crisis. Using the sample of firms from five Association of Southeast Asian Nations (ASEAN) countries, the results show that the presence of women in a board structure has a positive impact on ESG performance during the normal era.

In Vietnam, Trinh and Tang (2019) on factors affecting ESG reporting capability in 43 enterprises belonging to the group of 500 large enterprises (VNR500) listed on Vietnamese stock exchanges in the fiscal year 2017. The results show that besides the profitability factor, the remaining factors such as business size, business sector, and development opportunities of the business have a positive impact on ESG reporting capability. The study uses the logistic regression method because the dependent variable is qualitative (categorical variable) with two options (with or without making a sustainable development report). Research by Nguyen et al. (2021) on corporate social responsibility (CSR) reporting also shows results that are relatively similar to foreign studies with the factors: 1) business size, 2) liquidity, 3) enterprise ownership structure, 4) business, and also adding a factor 5) financial performance. This study used descriptive statistics and regression methods to examine over 100 companies with the largest market capitalization (VN100), which comprises 30 type-one companies (VN30) and 70 type-two companies (VNMidcap).

From the above studies, the article synthesizes five factors: 1) business size, 2) profitability, 3) financial leverage, 4) business sector, and 5) ownership structure and selects grounded theories as a basis for constructing the models with variables, and chooses quantitative research methods to conduct research.

2.2. Hypotheses development

2.2.1. Grounded theories

Stakeholder theory is an important foundation in the field of strategic management and makes an important contribution to the study. The theory originated from Freeman's (1984). It mentions ethics and values in organizational management. In this theory, the concept of "stakeholder" is any individual or group of people who are directly or indirectly affected by the activities of the organization. Stakeholder theory supposes that, besides the shareholders, there are other subjects involved in business operations including government agencies, political groups, potential customers, and the public. This theory is used to research and evaluate the pressure groups from stakeholders that impact on ESG reporting capability of Vietnamese businesses.

Agency theory was first proposed by Ross (1973) and developed by Jensen and Meckling (1976). Agency theory explains when there is a separation between ownership and management of resource utilization which leads to the problem of managers being able to act in their interests more than in the interests of the owners. According to Jensen and Meckling (1976), agency theory focuses on the relationship between the principal and the agent, whereby the representative will have certain powers based on the authorization of the principal. Agency theory supposes that conflicts of interest will occur when there is information asymmetry between the principal and the agent. This theory is introduced to discuss the creation of effective incentives, monitoring, and governance mechanisms to solve the agency problem.

Institutional theory has been researched and developed in the world since the 1970s and is used to explain the social structure and many phenomena of corporate behavior and the business decision-making process of enterprise administrators. Institutional theory mainly describes the strategies that firms can use to cope with pressures from the surrounding environment. This theory supposes that changes in the legal (political) environment will create pressure that leads to pattern changes. DiMaggio and Powell (1983) are said to be the first to develop this theory from a new perspective with the composition of three elements: 1) regulations,

2) norms, and 3) diffusion. In the field of ESG, institutional theory explains the motivations and obstacles for ESG reporting capability in businesses, based on three pressures: 1) enforcement of regulations, 2) mandatory norms, and 3) diffusion.

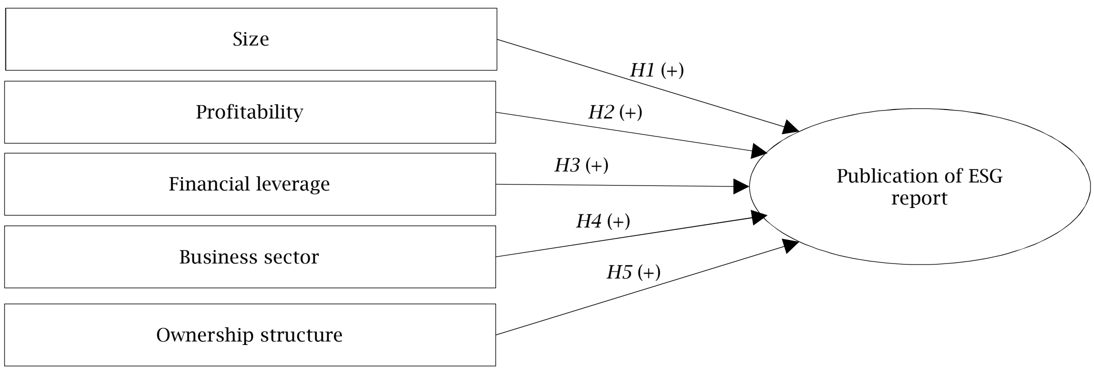
Legitimacy theory was developed by Dowling and Pfeffer (1975). Legitimacy theory supposes that an organization's activities must follow the values or social norms in which the organization operates. Organizations' failure to adhere to social values or norms can lead to difficulties for that organization in gaining community support to continue operating. According to Elkington (1998), sustainable development of businesses must be considered from three aspects: economic, environmental, and social. Accordingly, a business not only has the sole economic goal of creating economic value but also has further goals of protecting and developing environmental and social values. This theory was used very early by researchers (especially Deegan, 2002) to explain the practice of social and environmental responsibility reports, to explain announcements of environmental and social information, and to publish a portfolio of strategies implemented to provide legitimacy or to maintain the legitimacy of the organization. On the other hand, this theory is also used to explain the cognitive factors of managers (especially senior managers) that affect the disclosure of corporate environmental information.

Signal theory is formed and developed based on the phenomenon of information asymmetry in the market. Spence (1973) was the first to research signaling theory, emphasizing the role of signals in reducing the information asymmetry gap between parties, specifically through labor market research to model the signaling function of education. Signals contain information about a product or service that assists consumers in making inferences about the product's unobservable quality and value or service (Herbig et al., 1994). Based on signal theory, with the above pressures, businesses will use information as a signal to demonstrate to stakeholders about their role, position, and potential. According to Giner (1995), published information will be a signal to catalyze good relationships between businesses and investors in the present and future.

2.2.2. Theoretical model

Based on grounded theories and factors synthesized from previous studies, the research team selects five factors including size, profitability, financial leverage, business sector, and ownership structure, which influence the capacity of disclosing ESG reports. The proposed research model is illustrated in Figure 1.

Figure 1. Proposed hypotheses



Source: Authors' elaboration.

Based on the above model, the hypotheses are constructed as follows below.

• *Size*. Compared to smaller-scale businesses, larger enterprises with significant financial capabilities are likely to report more detailed ESG information (Rahman & Alsayegh, 2021). Stakeholders tend to pay more attention to larger businesses, making them more willing to voluntarily disclose ESG information to alleviate this pressure.

In Vietnam, a study conducted by Trinh and Tang (2019) also yielded similar results. According to Trinh and Tang (2019), stakeholders' demand for information related to large companies is higher than smaller companies. Therefore, these companies face a certain pressure to disclose such information.

Based on these studies, the hypothesis is formulated as follows:

H1: Business size has a positive effect on the capacity for the adoption and disclosure of environmental, social, and governance reports.

• *Profitability*. Campbell (2007) argued that businesses tend to show their social responsibility by illustrating extensive ESG information when their financial reports show beneficial information. When studying CSR reporting, research by Gamerschlag et al. (2011), and Menassa and Dagher (2020) also yielded similar results. The underlying reason for the positive relationship between the extent of information disclosure and a company's profitability lies in the knowledge and understanding of the management level.

However, in Vietnam, a study conducted by Trinh and Tang (2019) did not show a significant correlation between a company's profitability and its reporting practices. The study suggested that even though businesses generate substantial resources, they tend to underutilize or not utilize these resources effectively to create beneficial information for themselves.

Based on these studies, the hypothesis is formulated as follows:

H2: Profitability has a positive effect on the capacity of the adoption and disclosure of environmental, social, and governance reports.

• *Financial leverage.* According to Rahman and Alsayegh (2021), the positive relationship between financial leverage and ESG reporting in this study indicates that businesses with significant financial leverage tend to disclose more ESG information. A survey conducted in Europe revealed that 72% out of 100 bondholders with high-interest bonds and leveraged loans mentioned considerations about ESG as part of their investment decisions (Harper Ho & Park, 2019). Herbohn et al. (2019) suggested that banks offering favorable financial terms for companies reporting extensive information about carbon risk levels are more attractive to investors.

Based on these studies, the hypothesis is formulated as follows:

H3: Financial leverage has a positive effect on the capacity for the adoption and disclosure of environmental, social, and governance reports.

• *Business sector.* Several previous studies by Cooke (1992), Suwaidan (1997), Gamerschlag et al. (2011), Al-Janadi et al. (2016), Kansal et al. (2014), and Aljifri et al. (2014) have demonstrated a significant correlation between the business sector and the level of voluntary reports. This difference is attributed to pressure from stakeholders (Patten, 1991) and standards and regulations that are sector-specific (Dierkes & Preston, 1977).

In the context of Vietnam, the environmental sensitivity of the industry sector in which a business operates is also positively related to the level of reporting (Trinh & Tang, 2019). A study conducted by Nguyen et al. (2021) on CSR reporting also showed similar results.

Based on these studies, the hypothesis is formulated as follows:

H4: The business sector has a positive effect on the capacity for the adoption and disclosure of environmental, social, and governance reports.

• *Ownership structure.* In the study of businesses in Italy, Secchi (2005) pointed out that companies managed by the Italian government disclose less information compared to other businesses. This assertion was further substantiated by Tuominen et al.'s (2008) research in the Finnish forestry industry. Their study indicated that public limited company companies are more proactive in reporting CSR compared to other businesses.

In contrast, research on sustainable development reporting in Vietnam presents contrasting findings. According to Nguyen et al. (2021), Vietnam boasts a significant number of publicly listed companies with a specific degree of state ownership. These state-owned enterprises are anticipated to serve as exemplary cases of adherence to information disclosure practices.

Based on these studies, the hypothesis is formulated as follows:

H5: Ownership structure has a positive effect on the capacity of the adoption and disclosure of environmental, social, and governance reports.

3. RESEARCH METHODOLOGY

The research examined the factors influencing Vietnamese publicly traded companies' decisions to publish ESG reports. We employed a mixed-methods approach, combining qualitative and quantitative techniques. The qualitative phase involved in-depth interviews with eight financial, accounting, management, and investment specialists. We analyzed their insights and recommendations to identify key factors impacting ESG reporting decisions. These qualitative findings then informed the development of measurement scales, models, and survey questionnaires used in the quantitative research phase.

The research used quantitative research methods through SPSS software, with data collected from consolidated financial statements and annual reports of 216 businesses, over five years from 2018–2022, listed on the HOSE. After collecting secondary data, the research team will discard the unsatisfactory data and, after that, perform data entry for analysis.

Based on data collected and processed secondary data, the research team will analyze official quantitative research methods. The first step is to analyze the descriptive statistics of the variables in the model. In step two, the research team used Pearson correlation analysis to test the linear correlation between the variables. Next, logit and probit model analysis are applied to predict the capability of businesses to publish ESG reports. Finally, the authors used Hosmer-Lemeshow, Collins, and Durbin-Watson tests to ensure the suitability of the model.

During data processing, the authors coded the symbols of the independent and dependent variables presented in Table 1. In addition, for convenience and increased accuracy in data processing over the five-year time series from 2018 to 2022, the authors used the dummy variable time of publication (*T*) of the enterprise's financial statements.

Table 1. Definition of variables

Variables	*Symbol*	*Description*	*Data sources*
Dependent variable			
Publication of ESG report	*ESG*	ESG reporting capability; use a binary dependent variable. Enterprises that publish ESG reports: 1, enterprises do not publish ESG reports: 0.	Annual reporting
Independent variable			
Business size	*SIZE*	Logarithm of total assets of the enterprise.	Annual financial reporting
Profitability	*PROFIT*	Return on total assets (ROA).	Annual financial reporting
Financial leverage	*LV*	Leverage ratio.	Annual financial reporting
Business sector	*SECTOR*	The business sector of the enterprise is sensitive to the en vironment or not sensitive to the environment. Business lines of enterprises sensitive to the environment: 1, not (or less) sensitive to the environment: 0.	Annual financial reporting
Ownership structure	*OWNER*	Enterprises with or without state capital. Enterprises with state capital: 1, enterprises without state capital: 0.	Annual financial reporting
Time of publication	*T*	The time at which data are found in the enterprise's financ ial statements.	Annual financial reporting

Source: Authors' elaboration using SPSS software.

For the independent variable business sector (*SECTOR*), according to several studies (Deegan & Gordon, 1996; Campbell, 2003; Cho & Patten, 2007), the article classified 216 companies according to their level of environmental sensitivity as environmentally sensitive industries and non-environmental industries or more and less environmentally sensitive industries. Industries are environmentally sensitive sectors. More environmentally sensitive industries are those that are more at risk of criticism on environmental issues because their activities involve the risk of environmental malpractice, natural resource exploitation or pollution such as oil exploration, chemicals, and related products, oil refining, metals, mining, and utilities. Sectors that are less environmentally sensitive are those that have little or no risk of criticism for negative environmental impacts (Campbell, 2003; Cho & Patten, 2007). The authors decided to classify them into two groups: 1) sensitive or 2) insensitive to the environment.

The dependent variable in the model is the *publication of ESG report* (*ESG*), which is a binary variable taking two values 0 and 1 (with $Y = 0$ when the business does not disclose an ESG report, while $Y = 1$ when the business publishes an ESG report). The authors studied data on the publication of ESG reports of 216 businesses listed on the HOSE through sustainable development reports and annual reports of businesses, which were published in the 2018–2022 period.

4. RESEARCH RESULTS

4.1. Descriptive statistics

For data on the financial capacity of 216 businesses within five years, there are 1080 survey samples including *SIZE*, *PROFIT*, *LV*, *SECTOR*, and *OWNER* analyzed in SPSS software, information about the mean value, standard deviation, minimum value, and maximum value is summarized and presented in Tables 2.

Table 2. Description of statistical results of the variables

No.	*Variables*	*Number of samples*	*Mean*	*Standard error*	*Min*	*Max*
1	*SIZE*	1080	14.259	1.967	6.746	20.174
2	*PROFIT*	1080	6.757	9.455	-73.18	87.56
3	*LV*	1080	47.105	22.076	0.51	117.26
4	*SECTOR*	1080	0.38	0.486	0	1
5	*OWNER*	1080	0.33	0.469	0	1
6	*T*	1080	2.00	1.415	0	4

Source: Authors' elaboration using SPSS software.

Based on the statistics in Table 2, for quantitative variables, the results show that there are quite large standard errors in the variables *PROFIT* and *LV*. This can be explained by the strong fluctuations in the economy in recent years, which have led to different business situations among businesses.

The study uses the Pearson correlation test method to check the strong linear correlation between the dependent variable and the independent variables and early identify the problem of multicollinearity when the independent variables are also strongly correlated. The results are presented in Table 3 below.

Table 3. Correlation matrix of variables

	ESG	*SIZE*	*PROFIT*	*LV*	*SECTOR*	*OWNER*	*T*
ESG	1						
SIZE	0.505	1					
PROFIT	.068	0.50	1				
LV	-0.002	0.229	-0.331	1			
SECTOR	-0.117	-0.025	-0.009	0.013	1		
OWNER	-0.065	0.122	0.073	0.050	0.258	1	
T	0.071	0.074	-0.011	0.038	-0.003	0	1

Source: Authors' elaboration using SPSS software.

The results show that the correlation coefficient of the dependent variable and independent variables is at an average number and mainly at a weak or very weak value, in which the variable of the *SIZE* has the highest correlation coefficient value at 0.505. In addition, the correlation coefficient of the independent variables is not high, with the highest being 0.5 in the relationship between *SIZE* and *PROFIT*, and the lowest being -0.003 in the relationship between *SECTOR* and *T*.

4.2. Logit and probit regression results

The logistic model was used in the study due to its fit with the prediction components using linear regression analysis. Table 4 shows the results of the model after analysis.

Both logit and probit regression models produce similar results with the independent variables *SIZE*, *LV*, *SECTOR*, and *OWNER* having statistical significance in both models, however, the independent variable *PROFIT* shows the index Sig. > 0.05 which means no significance in both models.

The logit regression estimation result has R^2 = 43.2%, meaning the variables used in the model explain 43.2% of the variation in the dependent variable. *SIZE* has a positive coefficient (0.93), proving that this independent variable has a positive relationship with the dependent variable of the capability to *ESG*. This result is similar to previous studies. However, there is a clear difference when the remaining variables *LV*, *SECTOR*, and *OWNER* have negative coefficients of -0.02, -0.757, and -0.453, respectively, demonstrating that these independent variables have negative relationships with the dependent variable *ESG*. The independent variable *PROFIT* has a Sig. index of 0.492, greater than 0.05, indicating that it is not statistically significant in the model.

Table 4. Logit and probit regression results

Variables	Logit model			Probit model		
	Coef	Std. dev.	Sig.	Coef	Std. dev.	Sig.
SIZE	0.930	0.065	0.000	0.452	0.029	0.000
PROFIT	0.007	0.010	0.492	0.004	0.005	0.450
LV	-0.020	0.005	0.000	-0.008	0.003	0.001
SECTOR	-0.757	0.197	0.000	-0.272	0.104	0.009
OWNER	-0.453	0.186	0.015	-0.370	0.108	0.001
T	0.040	0.061	0.512	0.035	0.034	0.308
Coefficient of regression	-13.679	0.933	0.000	-6.800	0.427	0
Coefficient of determination R^2	0.432			0.464		

Source: Authors' elaboration using SPSS software.

The probit regression model has R^2 = 46.4%, higher than the logit model but not significant. *SIZE* has a positive coefficient (0.452), proving that this independent variable has a positive relationship with the dependent variable *ESG*. The remaining variables *LV*, *SECTOR*, and *OWNER* have negative coefficients of -0.008, -0.272, and -0.370, respectively, demonstrating that these independent variables have a negative relationship with the dependent variable *ESG*. The independent variable *PROFIT* has a Sig. index of 0.450, greater than 0.05, indicating that it is not statistically significant in the model.

4.3. Predictive ability of the model

From the following matrix, it can be seen that the model's rate of correctly predicting the capability to publish ESG reports of businesses listed on the HOSE is quite high at 83.9% (Table 5).

Table 5. Prediction ability of logit and probit models

Variables	ESG		Contrast percentage
	Do not publish ESG reports	Publication of ESG report	
Do not publish ESG reports	758	48	94.0
Publication of ESG report	126	148	54.0
Average percentage			83.9

Source: Authors' elaboration using SPSS software.

4.4. Goodness-of-fit test

To determine whether the logit model can be applied in practice, the research team applied the Hosmer-Lemeshow test to evaluate the suitability of the model. The results show that the models have Sig. < 0.05 (see Table 6), so they are all suitable models and can be applied in practice.

Table 6. Goodness of fit of logit and probit models

Hosmer–Lemeshow test	Chi-square n umber	df	Sig.
	63.44	8	0.000

Source: Authors' elaboration using SPSS software.

The multicollinearity phenomenon in the model is tested using the Collins test. The results in Table 7 show that all independent variables have a variance inflation factor (VIF) < 10, so it can be concluded that the model does not have multicollinearity.

Table 7. Results of testing multicollinearity

Independent variables	VIF
SIZE	1.098
PROFIT	1.152
LV	1.213
SECTOR	1.079
OWNER	1.099
T	1.010

Source: Authors' elaboration using SPSS software.

The authors used the Durbin-Watson test to check for autocorrelation and received the result Prob. > Chi^2 = 0.502 > 5%, which can be concluded that the model does not have autocorrelation.

5. DISCUSSION

According to the analysis results, among the five factors examined (business size, financial leverage, profitability, ownership structure, and business sector), four factors have shown significant influence, whereas one factor demonstrated no impact on the adoption and disclosure of ESG reports by publicly listed companies. Among the four influencing factors, there is only one factor showing a positive relationship, which is business size while three factors have a negative relationship, which are financial leverage, ownership structure, and business sector.

Business size positively influences its ability to adopt and disclose ESG reports. This result has also been acknowledged in most similar studies before. That can be elucidated by the fact that large listed companies tend to receive more attention from stakeholders and society in general, meaning that the demand for information related to the company is higher, leading to notable pressure for them to disclose pertinent information. Business size affects the ability to own and manage the resources needed to conduct ESG. Large companies often have the resources and financial capacity to organize activities and monitor ESG indicators in a more detailed and thorough manner. Large size can also mean having a large number of employees and ESG experts within the business. This gives the company the ability to focus resources and knowledge on applying and publishing ESG reports. It also often comes with extensive environmental and social impacts. Business size can create a larger impact and requires these companies to apply and publish ESG reporting seriously.

Financial leverage hurts the capacity of publishing an ESG report. This result is different from the previous research results of Rahman and Alsayegh (2021) but similar to the study about Asian businesses by Sharma et al. (2020). The current situation in Vietnam can explain this. Companies use leverage primarily to increase additional capital for their operations. Therefore, the more leverage a business uses, the more important it is to optimize financial performance, and publishing ESG reports may not be considered a priority at this time. Additionally, implementing and publishing an ESG report may require financial investments, such as recruiting and training personnel, developing data management systems, conducting ESG assessments, and monitoring. These requirements can create a significant financial burden, especially for small listed businesses. Furthermore, in some cases, a lack of financial incentives from banks, shareholders, and investors can reduce a business's willingness to publish ESG reporting. If capital is insufficient to support ESG activities or these investments are not evaluated as valuable, businesses may not see economic benefits from implementing and publishing ESG reports.

The business sector has a negative relationship with ESG disclosure. While Trinh and Tang (2019) and previous Western studies believe that the profession has the same direction. In Vietnam, businesses operating in environmentally sensitive sectors often rarely publish ESG reports. Instead, companies operating in non-environmentally sensitive sectors tend to disclose ESG reports more frequently. It may be because businesses do not have enough resources to carry out ESG disclosure and application. A large number of businesses operating in environmentally friendly fields in Vietnam are listed on the stock exchange but are not too large and use high financial leverage. Implementing ESG may require human, technological, and financial investments that they do not have available. Furthermore, there may not be any request or pressure from relevant parties. In some industries, such as oil and gas, coal, or other polluting industries, there may be less pressure from customers, shareholders, or governments for businesses to conduct ESG. This may make some businesses feel that it is not necessary to disclose ESG. This is also a weakness in Vietnam that needs to be improved through state policies.

Ownership structure hurts the capability of publishing an ESG report. This result is similar to the study of Trinh and Tang (2019). This means that enterprises with state capital are less likely to disclose ESG than listed enterprises without state capital. Only a few large-scale state-owned enterprises have published ESG reports. Because enterprises with state capital often have the advantage of reputation and trust from the public. Meanwhile, businesses without state capital always tend to publish additional reports containing information that is beneficial in raising capital and confidence from investors as well as consumers. In addition, non-state companies are often sensitive to market changes and catch up with trends faster. In Vietnam, although the number of listed enterprises with a state capital structure is very large, their ownership ratio is decreasing. Therefore, despite having policies and the desire to implement ESG, businesses state-owned enterprises are hard to catch up with other enterprises.

Profitability has no impact on the capability of publishing an ESG report, similar to the results of Leventis and Weetman (2004) in the Netherlands. However, a number of other studies still show that there is a link between profitability and ESG execution ability. According to the research team, the application and publication of ESG reports are not simply based on profitability but also depend on corporate standards and regulations, and the manager's awareness, the company's commitment to implementing sustainability criteria. Therefore, it is not a factor that can promote ESG implementation. Companies can realize the value and long-term benefits of implementing ESG despite current low profitability.

6. CONCLUSION

The article examines factors considered relevant to the disclosure of ESG reports by companies listed on the Vietnamese stock market. From there, it not only shows the conditions for applying ESG but also the common advantages and challenges for businesses in Vietnam. At the same time, we can also see Vietnam's different context compared to the region and the world, thereby helping businesses to grasp the capabilities and opportunities in deciding to implement policies related to ESG, contributing to increasing value for the company itself as well as contributing to building a sustainable national economy. For businesses, size is the key factor determining the capability to disclose ESG. Besides, factors such as financial leverage and industry sector also need to be considered to make the most beneficial decision for the business. Implementing an ESG strategy is a long journey, businesses must prepare themselves with a large enough resource that can be maintained in the long term. If they realize they have enough resources and human resources, listed businesses should seriously implement it as a commitment to sustainable development, building trust for shareholders, investors, and the state. From there, raise capital and increase brand value better.

For the Vietnamese state, currently, most businesses disclose ESG reports voluntarily. However, some specific industries that have a profound impact on the environment and people such as chemical production, nitrogen fertilizer, mining and natural resources, oil and gas, logging, etc., should be considered included in the group of subjects required to implement and disclose ESG reports. In addition, the state also needs to pay more attention to promulgating ESG standards and reference frameworks and implementing impactful policies to encourage businesses to voluntarily disclose and actively propagate ESG. Besides, the government should continuously update information from the world to be able to keep up with current trends.

For investors, reviewing ESG reports to evaluate companies and make investment decisions is also a way that should be considered. Whether or not a business operates stably and sustainably is not only reflected on financial reports but must also be considered in combination with non-financial aspects. Therefore, investors should evaluate the ESG report to have the most comprehensive assessment, properly evaluate the company's capabilities, and thereby make appropriate investment decisions.

There are some limitations of the study. Firstly, regarding the sample selected for the study, the research team only stopped at 216 businesses, randomly selecting a sample from the comprehensive list of listed businesses as of December 2023. The number of samples selected may still have sampling risk. Secondly, the research period is within the most recent five-year cycle. This is a period of many fluctuations due to the COVID-19 epidemic, so the indexes have quite unusual fluctuations, causing quantitative results to be affected. Thirdly, the study only selected five factors that are mentioned frequently in research articles with similar content both domestically and internationally. However, when conducting practical research, the results given by the research team were inconsistent with previous research results. This facilitates subsequent research to explain each factor in more depth and draw more reliable conclusions.

The research team's findings point to important directions for future research. As for future research perspectives, in addition to examining the level of ESG reporting, future research could examine both the quantity and quality of ESG disclosure as well as its determinants. Future research could also consider the role of other stakeholders as well as regulators and governments in promoting organizations to report ESG information. This aspect is considered important because an organization's sustainability strategy and its ESG disclosure are constrained by the institutional environment and accountability requirements, a characteristic that will affect the legal status of companies.

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