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THE ROLE OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE PERFORMANCE IN ACHIEVING FIRM SUSTAINABILITY: A BIBLIOMETRIC AND EMPIRICAL ANALYSIS

Tuan Khanh Vuong, Faculty of Marketing and International business, HUTECH University, Ho Chi Minh City, Vietnam; ORCID: 0000-0003-1364-6831

Ha Manh Bui*, Faculty of Engineering and Technology, Saigon University, Ho Chi Minh City, Vietnam; manhhakg@sgu.edu.vn, ORCID: 0000-0002-0647-3111

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* Corresponding author

ABSTRACT

This study explores research trends in environmental, social and governance (ESG) performance and identifies the effect of ESG performance on firm sustainability. A search of Web of Science using the keywords ‘ESG performance’ and ‘firm sustainability’ identified 879 documents for bibliometric analysis. The analysis revealed a growing interest in researching the effect of integrating ESG into corporate strategies on firm sustainability. Popular key phrases identified include ESG, ESG performance, ESG disclosure, sustainability development, sustainability performance, firm performance and sustainability reporting. Key clusters of related keywords include social, governance, climate change, risk management and green innovation. A survey of 393 manufacturing firm employees in Ho Chi Minh City with knowledge of the role of ESG performance was conducted to test the research model. Among the factors of ESG, social performance had the most substantial effect on sustainability performance ($\beta = 0.367$), followed by environmental performance ($\beta = 0.326$) and corporate governance performance ($\beta = 0.235$). This study provides scholars with a foundation to widen future studies and has practical implications for the application of ESG in business strategies to achieve firm sustainability.

1. INTRODUCTION

While many scholars have explored the UN Sustainable Development Goals (SDGs), there has been limited research examining how business environmental, social and governance (ESG) performance relates to the SDGs or how firm ESG indicators contribute to sustainability (Radu et al., 2023). Environmental externalities have gained increasing attention as the need for sustainable development and awareness of environmental protection increase (Khalil et al., 2024). Challenges such as resource scarcity and climate change are also becoming more urgent around the globe.

In Vietnam, where the country’s rapid economic development is making social and environmental issues progressively more acute, integrating ESG into business management is vital for sustainable long-term development. Companies not only aim to provide the market with high-quality goods and services but also take into account the impact their activities will have on society and the environment. Implementing an ESG performance system would assist Vietnamese companies in developing a new model for sustainable progress that adapts to current corporate social responsibility (CSR) requirements.

Entrepreneurship development is a growing priority, due to the vital importance of impacting a nation’s economy and fostering entrepreneurial behaviour (Koçyiğit et al., 2024). To improve their sustainability performance, firms must expand their vision of corporate responsibility to include environmental, social and economic concerns. ESG information can greatly facilitate investors’ analysis of corporate sustainability

and responsibility (Han et al. 2023). Maintaining ESG performance has become very important for long-term continuity, especially for manufacturing firms with complex supply chains and significant environmental, social and economic impacts.

Manufacturing firms should adopt the ESG perspective of corporate governance, social responsibility and environmental stewardship. This means reducing emissions and resource use, ensuring the health and safety of workers and enhancing internal control and transparency (Han et al., 2023). ESG is at the core of sustainable development for Vietnamese firms because it helps manage environmental impacts, foster corporate social responsibility and ensure good governance. Applying the ESG framework enables enterprises to increase their financial performance by reducing uncertainty and improving brand value. Despite burgeoning interest in ESG practices, there is a dearth of information on the influence of ESG performance on sustainable results within the manufacturing sector.

This study adopts a bibliometric analysis to explore the role of ESG performance on firm sustainability. By reviewing publication documents, citation trends and keyword patterns, this study aims to provide a comprehensive review of existing evidence, highlight key findings and clarify current discussions on ESG and firm sustainability. In addition, this study collects data from manufacturing employees to understand their perceptions of the effect of ESG performance on firm sustainability. The study provides invaluable insights for firms seeking to apply an ESG framework to achieve sustainable development in the new era, as well as important implications for both researchers and professionals. For academics, it gives a solid foundation for further research on ESG as a part of corporate strategy. For business leaders, it identifies the most important aspect of embedding ESG into their strategy if they aim to ensure continuity within the changing business environment.

2. LITERATURE REVIEW

2.1. Theoretical background

Stakeholder theory asserts that corporations should consider the interests of all relevant parties (i.e. stakeholders). It highlights the importance of a company addressing social and environmental concerns alongside its organisational goals (Zhou et al., 2023). Enterprises should create value for all relevant parties, not just for shareholders. Some studies have suggested that improved sustainability performance is achieved by strengthening relationships with stakeholders (Alsayegh et al., 2020; Zhou et al., 2023). Flammer and Kacperczyk (2019) explained that ESG factors positively influence employee engagement, which is essential for achieving sustainable performance. ESG practices reinforce stakeholder theory by focusing on the needs and concerns of multiple stakeholders.

The resource-based view (RBV) explains that firms can attain a competitive advantage through unique resources. Firms can improve stakeholder relationships, enhance their reputation and gain other opportunities and resources by adapting ESG actions. According to legitimacy theory, businesses can use ESG practices to gain acceptance and conform to social norms. By addressing social and environmental issues, firms can maintain their legitimacy and continue to operate within society. Together, stakeholder theory, RBV and legitimacy theory suggest that implementing sound ESG practices dramatically increases the long-term viability of a firm. Engaging in ESG builds investor confidence, enhances reputation and mitigates risk. ESG practices help firms achieve long-term success by allowing them to efficiently identify and manage social and environmental risks. Firms that do well in terms of environmental sustainability often enjoy increased consumer patronage and brand awareness, which leads to financial success. A company with strong ESG principles will also save on financing costs because many investors give more weight to these factors. Effective ESG practices also increase regulatory compliance, ensuring that business interruptions are less likely.

2.2. ESG performance and its role in vietnamese enterprises

The ESG framework is intended to assess a company's viability by prioritizing its environmental protection, social responsibility and corporate governance over conventional financial measurements (Han et al., 2023; Linnenluecke, 2022). ESG is currently increasing in importance in business activities. Within the concept of ESG, the component of environment assesses a company's approach to environmental issues such as waste management, climate change or air pollution control. The social component takes into account labour practices such as employee compensation and benefits, as well as external societal concerns including charity, community activities and CSR implementation. ESG represents a principal commitment to both moral and ethical conduct, as well as the sustainable development of business activities.

ESG values are of great importance for Vietnamese businesses and investors (Ha et al., 2024). As the country scales its market at the global level, adherence to ESG principles is becoming a part of the directive that enhances the competency of Vietnamese companies, allowing them to attract more investors while fitting within the parameters of international regulations. Specific applications of ESG include controlling carbon emissions, reducing general waste output and implementing green technologies. ESG also provides guidance for labour policies, employee welfare and community involvement. It ensures businesses operate ethically under transparent management, leading not only to environmental and social betterment but also to the long-term financial strength of Vietnamese companies.

2.3. Sustainable performance

According to Moktadir et al. (2018), sustainability-driven industries are reinventing their business strategies and operations by taking into consideration economic, environmental and social impacts. Masud et al. (2019) defined sustainability as the combined ways through which economic growth is entwined with social and environmental objectives to create value not only for the organisation but for society at large. Kamble et al. (2020) similarly described sustainable performance as the implementation of strategies that achieve a balance between social improvement, environmental conservation and economic development. Sustainable performance can be indicative of a company's potential growth. Numerous studies have investigated the association between corporate performance and ESG-related disclosures. Conducting a bibliometric analysis of these investigations can clarify the mechanisms through which ESG affects corporate performance and facilitate the use of ESG to enhance both short- and long-term performance (Shen, 2023). As a result, organizations are now focusing on both profit and social and environmental issues, they seek to have a more holistic and sustainable overall performance.

2.4. ESG in the manufacturing industry

ESG is a framework for evaluating firm performance of a firm which focuses not only on typical financial facets but also on social concerns, environmental issues and governance. It can help investors understand whether sustainable financial growth is viable for a company (Shen, 2023). Environmental impact assessments and management are necessary if manufacturing companies are to understand the effects their products have on the environment at each stage of the product life cycle. Assessing these impacts enables firms to respond appropriately to such impacts and mitigate negative consequences (Han et al., 2023).

The ESG framework can be applied to evaluate manufacturing companies in terms of social responsibility, rule of law and environmental impact. Reducing emissions, utilising renewable energy sources and effective waste management are all part of the environmental component. The social component is dedicated to community concerns, such as charitable endeavours and creating a good working environment within the enterprises. Governance refers to issues such as the degree to which finances are transparent, strong leadership and internal oversight. By following ESG principles, manufacturing companies in Vietnam may be able to better comply with government regulations while also improving their company image and long-term commitment to sustainability in business activities.

Legitimacy theory also emphasises the crucial role of ESG in supporting sustainable business practices. Guthrie and Parker (1989) suggested that a company's capacity to survive and develop depends on how well-regarded it is by the community.

Manufacturing is economically important because it converts raw materials into finished goods that satisfy human consumption wants (Han et al., 2023). Applying ESG principles has been proven to enhance corporate performance in the manufacturing sector. Adhering to ESG recommendations can result in cost savings and increased revenues. Additionally, environmentally friendly industrial activities may save energy and resources – further reducing manufacturing costs – and signal a firm’s care for the environment to the community. Businesses applying ESG principles are likely to spend less on environmental and social issues because they provide green quality products in the community.

2.5. The relationship between environmental performance and firm sustainability

Scholars have focused on both positive and negative aspects of firms’ environmental conduct (Doan & Sassen, 2020). Human activities affecting environmental variables include the use of resources, ecosystem interactions and responses to environmental problems such as pollution and climate change (Han et al., 2023). The relationship between environmental factors and corporate sustainability is crucial in business activities. To ensure long-term viability, enterprises should adopt a proactive approach to environmental management, including saving energy, recycling resources and reducing harm to the environment, in order to diminish negative impacts on the environment and the community.

While investing in environmental management may increase a company’s total costs, it can also enhance operational efficiency and reduce investment risks. This, in turn, improves overall company performance (Li et al., 2021). Effective environmental performance is signalled by minimal environmental damage, whereas substantial damage points to shortcomings in a company’s environmental control and management system. Companies can show their devotion to sustainable growth and avoid conflict by following environmental rules. Consumer and investor interest in a company will increase if it produces environmentally friendly products and services, as well as if it is dependable and has a long-term commitment. Companies should create plans to avoid the dangers associated with environmental and climate policy changes. Increasing creativity and innovation in manufacturing processes can lead to new opportunities and increase revenue. Taking environmental concerns into account is not only a moral obligation, but is crucial for the survival and growth of companies. As a result, the following hypothesis is proposed:

H₁: There is a positive relationship between environmental performance and firm sustainability.

2.6. The relationship between social performance and firm sustainability

Enterprises should adhere to the values, norms and regulations of their community when conducting business activities in order to be considered legitimate (Khanifah et al., 2020). The social component of ESG refers to how a company interacts with its employees, suppliers, customers and other stakeholders (Han et al., 2023). The relationship between society and a firm is crucial for sustainable business activities. Successfully implementing social responsibility requires balancing business and management activities to fulfil commitments to shareholders, consumers and employees such as providing fair working conditions.

Empirical research based in social exchange theory and stakeholder theory has shown that CSR can significantly impact organisational performance. Technological innovation plays a negative moderating role in the relationship between CSR and performance while market competition plays a positive moderating role (Zhang & Wei, 2021). Companies that ignore sustainable practices or engage in irresponsible actions are widely criticised by the public, which negatively affects their reputation and revenue. Those companies which actively engage in CSR, investing in the infrastructure of their local community and improving living conditions, have a greater positive impact. These measures promote social stability and enhance the long-term growth of companies. Based on the analyses above, the following hypothesis is proposed:

H2: There is a positive relationship between social performance and firm sustainability.

2.7. The relationship between corporate governance performance and firm sustainability

Corporate governance involves utilising essential policy instruments to achieve organisational goals. It encompasses control mechanisms, risk management, corporate planning and coordination (E-Vahdati et al., 2019). A favourable association has been found between sustainability performance and corporate governance (Rashid & Hamid, 2022). Corporate governance, risk management, compliance and transparency are several of the operational processes and internal management frameworks that make up corporate oversight (Han et al., 2023). Rodrigue et al. (2013) identified a positive association between corporate governance and environmental disclosure, which significantly benefited long-term performance. The recent financial crisis and its significant impact on businesses has increased the influence of corporate governance on firms' strategic planning (Zandi et al., 2022).

Effective corporate leadership is pivotal in creating a transparent, equal and responsible management climate within a company. Through effective environmental and social management, companies can take advantage of opportunities to enhance

sustainability while managing environmental and social risks. Well-managed companies have comprehensive sustainability evaluation and reporting systems, which increase their transparency and legitimacy. Such companies tend to consider the perspectives of stakeholders like shareholders, customers and the community in their decision-making. Effective governance also promotes the implementation of strategies that have a long-term effect, such as technological investments and production process improvements. Ultimately, effective leadership has a positive impact on financial performance, as well as the long-term operation of a company. As a result, the following hypothesis is proposed:

H3: There is a positive relationship between corporate governance performance and firm sustainability.

3. METHODOLOGY

The methodological approach of this study is divided into two separate stages, each with a distinct objective that helps achieve the main objective of the research. The first stage consists of a bibliometric analysis using the Web of Science database. This database is frequently used in academic research due to its comprehensive nature and dependability. It is widely accepted as a reputable scholarly resource. The second stage is devoted to assessing the effect of ESG adoption on firm performance and its implications for company sustainability. In this stage, additional literature was consulted to augment the current set of indicators and a survey was conducted among manufacturing companies in Ho Chi Minh City (HCMC) to understand the association between ESG performance and corporate sustainability.

3.1. *Bibliometric analysis*

The first stage of the study was dedicated to obtaining a comprehensive collection of the academic literature focusing on the research topic. A comprehensive search strategy was developed utilising the keywords ‘ESG performance’ and ‘firm sustainability’. These terms were applied to the titles, abstracts and keywords of documents. In total, 879 documents were collected from Web of Science for analysis on 28 July 2024. Data collected included publication year, country and author. For the bibliometric analysis, the data extracted from Web of Science were loaded into the VOSviewer program.

3.2. *Manufacturing company survey*

A survey was conducted to collect data from manufacturing company employees who have a role in or know about ESG practices and their effects on sustainability.

By concentrating on these educated individuals, the research attempts to identify the components of ESG that have an effect on overall long-term sustainability, including environmental performance, social performance and corporate governance performance. The proposed conceptual model illustrating these relationships is presented in Equation 1.

$$Y = \beta_0 + \beta_1 \times X_1 + \beta_2 \times X_2 + \beta_3 \times X_3 + \sigma \quad (1)$$

Where Y represents a firm's sustainability (*FIS*); X_1 is environmental performance; X_2 is social performance; X_3 is corporate governance performance; σ is the error term; β_0 is the y-intercept; and β_1 , β_2 and β_3 are regression coefficients corresponding to the three dimensions of ESG.

Table 1 outlines the measures and items used in the questionnaire, which are adapted from established sources. The environmental performance (*ENP*) measure includes factors like reducing air emissions and minimising effluent and solid waste. Social performance (*SOP*) is measured through items related to employee training and development, occupational health and safety and job security. Corporate governance performance (*CGP*) includes items such as compliance with standards, improving environmental compliance and enhancing risk control mechanisms.

Table 1. Survey measures and items

| Item Code | Descriptions | Adapted/adopted from sources |
|---|---|------------------------------------|
| Environmental Performance (ENP) | | Tan et al. (2022) |
| ENP1 | Reduction of air emissions. | |
| ENP2 | Minimisation of effluent/solid waste. | |
| ENP3 | Reduced consumption of hazardous/harmful/toxic materials. | |
| ENP4 | Reduced frequency of environmental accidents. | |
| Social Performance (SOP) | | Sultana, Zulkifli, & Zainal (2018) |
| SOP1 | Employee training and development. | |
| SOP2 | Promotion of employee occupational health and safety. | |
| SOP3 | Employee job security and satisfaction. | |
| SOP4 | Commitment to community and society. | |
| SOP5 | Supplier commitment and initiative. | |
| Corporate governance performance (CGP) | | Masud et al. (2018) |
| CGP1 | Compliance with set standards. | |
| CGP2 | Improved environmental compliance. | |
| CGP3 | Improved the set of rules and regulations. | |
| CGP4 | Enhanced risk control mechanism. | |
| CGP5 | Promotion of transparency and accountability. | |

| | Firm Sustainability (FIS) | Hermundsdottir & Aspelund, (2022) |
|------|--|-----------------------------------|
| FIS1 | A comprehensive management plan focused on long-term sustainability goals. | |
| FIS2 | Sustainability policies integrated into both strategic and operational processes. | |
| FIS3 | Green resources and training offered to employees to help achieve sustainability objectives. | |
| FIS4 | Prepare reports and analyse results related to sustainability performance. | |
| FIS5 | Regularly improve market position to achieve long-term sustainable development objectives. | |

The demographic profile of the 393 participants is reported in Table 2. Male constituted 51.1% of respondents, while female accounted for 41.5% and 7.4% identified with other gender identities. The largest group of respondents (39.4%) held a bachelor’s degree, followed by those with diplomas (28.0%). Participants with certificates accounted for 16.8%, 12.5% of respondents held master’s degrees and 3.3% held doctorates. The majority of participants classified their positions as specialists (50.6%), followed by managers (37.7%), directors (6.1%) and technicians (5.6%).

Table 2. Demographic profile of participants

| Gender | Frequency | Per cent | Valid Percent | Cumulative Percent |
|-------------|-----------|----------|---------------|--------------------|
| Male | 201 | 51.1 | 51.1 | 51.1 |
| Female | 163 | 41.5 | 41.5 | 92.6 |
| Other | 29 | 7.4 | 7.4 | 100.0 |
| Total | 393 | 100.0 | 100.0 | |
| Education | | | | |
| Certificate | 66 | 16.8 | 16.8 | 16.8 |
| Diploma | 110 | 28.0 | 28.0 | 44.8 |
| Bachelor | 155 | 39.4 | 39.4 | 84.2 |
| Master | 49 | 12.5 | 12.5 | 96.7 |
| Doctorate | 13 | 3.3 | 3.3 | 100.0 |
| Total | 393 | 100.0 | 100.0 | |
| Position | | | | |
| Technician | 22 | 5.6 | 5.6 | 5.6 |
| Specialist | 199 | 50.6 | 50.6 | 56.2 |
| Manager | 148 | 37.7 | 37.7 | 93.9 |
| Director | 24 | 6.1 | 6.1 | 100.0 |
| Total | 393 | 100.0 | 100.0 | |

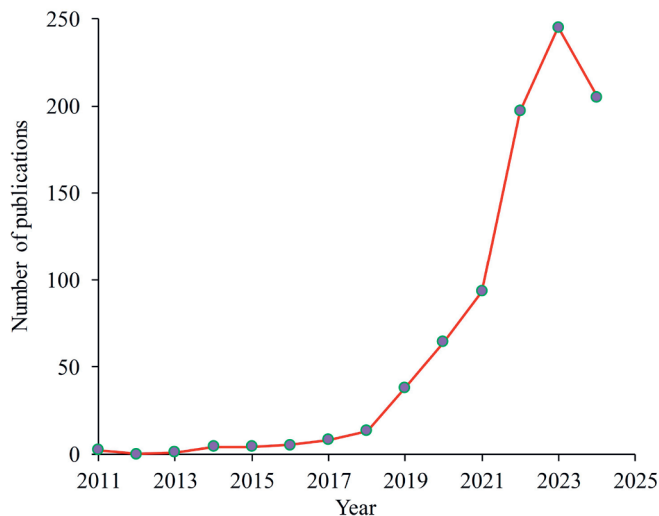
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4. FINDINGS

4.1. Bibliometric findings on ESG and sustainability

The bibliometric analysis retrieved 879 documents dating back to 2011 from Web of Science, as depicted in Figure 1. The data reveal that research on ESG and corporate sustainability remained relatively stagnant until 2018, after which there was a significant increase in interest from both enterprises and the scientific community, reflecting the growing importance of the field. Notably, the number of studies surged in 2022 and 2023, with 197 and 245 publications, respectively. This rise likely correlates with evolving standards for corporate sustainability and increased scrutiny of these processes.

Figure 1.

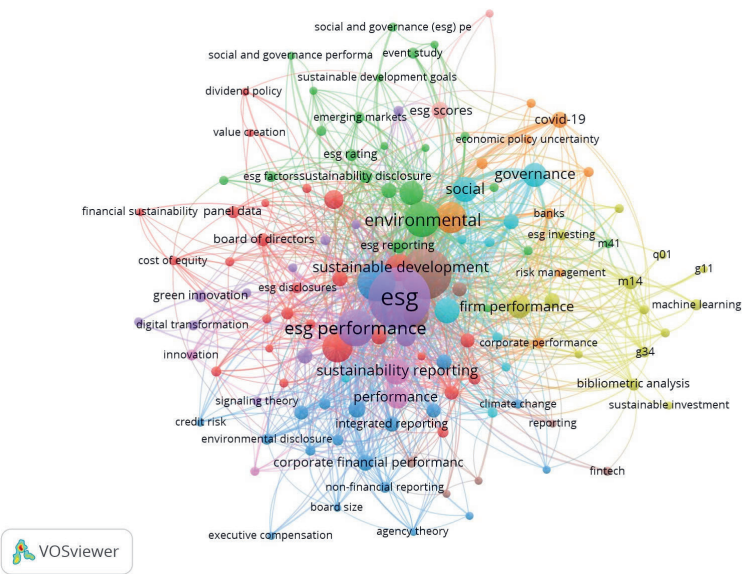


Source: Authors

The map allows viewers to identify important topics, research teams or industry trends by looking at keyword relationships. According to the data analysis done in VOSviewer, the most common keywords identified in the bibliometric analysis include ESG, ESG performance and ESG disclosure, as well as sustainability development goals, firm sustainability performance and sustainability reporting. Key clusters of related keywords include social, governance, climate change, risk management and green innovation, as shown in Figure 2. The popularity of keywords relating to ESG performance and disclosure indicates a focus on measuring and reporting ESG. Current research focuses on constructing variables and criteria to measure the effects of ESG policies. The related clusters of keywords such as risk management, green

innovation and social and governance issues reflect a focus on specific variables related to corporate sustainability.

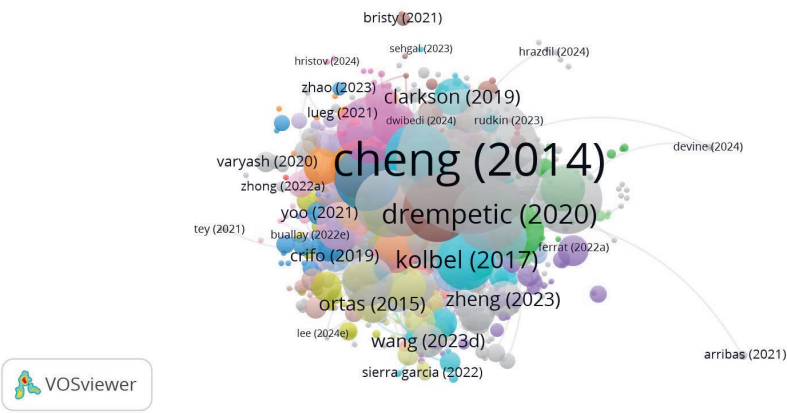
Figure 2.



Source: Authors

Figure 3.

liern (2018)



Source: Authors

Figure 3 presents a frequency map of cited authors. Frequent citations include Cheng et al. (2014), Dremptetic et al. (2020), Kolbel et al. (2017), Ortas et al. (2015), Varyash et al. (2020), Clarkson et al. (2019) and Zheng et al. (2023). The high citation rate indicates that the role of ESG in addressing sustainability has garnered significant interest within the research community, highlighting the importance of these studies in understanding and developing ESG policies.

The bibliometric analysis revealed that research on ESG performance and firm sustainability has increased significantly in the past decade, with the bulk of relevant research conducted after 2018. This surge in publications indicates an ever-increasing interest in ESG issues and their integration into corporate strategies for sustainable development. Keyword analysis indicated that such research largely revolves around ESG performance as a determinant of sustainable development and green innovation, which is as expected.

Observing developing trends in ESG is also important. The most popular keywords and frequently cited authors reveal current trends and key issues. However, much remains uncertain regarding the role of ESG performance in achieving firm sustainability, requiring further clarification. Future studies could explore regional and industry differences and determine how much each specific ESG factor affects sustainability outcomes. The application of sophisticated analytic approaches and data from new sources will improve the accuracy and reliability of the results.

To better understand the relationship between ESG performance and firm sustainability, survey data were collected from 393 employees in manufacturing companies in HCMC. The analysis included several components, including reliability analysis of the measurement scale, exploratory factor analysis (EFA) and regression analysis.

Table 3. Measurement scale reliability analysis

| Construct | Cronbach's alpha |
|--|-------------------------|
| Environmental Performance (ENP) | 0.822 |
| Social Performance (SOP) | 0.852 |
| Corporate governance performance (CGP) | 0.832 |
| Firm Sustainability (FIS) | 0.891 |

Source: Authors

First, the reliability of the measurement scales was assessed using Cronbach's alpha, as shown in Table 3. The Cronbach's alpha values for all constructs exceeded the threshold of 0.7, with ENP at 0.822, SOP at 0.852, CGP at 0.832 and FIS at 0.891. In addition, the corrected item-total correlation for all items was above 0.5, confirming that all items meet the required reliability standards.

Table 4. Exploratory Factor Analysis (EFA)

| KMO and Bartlett's Test | | |
|---|-----------------|----------|
| Kaiser–Meyer–Olkin Measure of Sampling Adequacy | | 0.864 |
| Approx. Chi-Square | | 2146.035 |
| Bartlett's Test of Sphericity | df | 91 |
| | <i>p</i> -value | 0.000 |

Source: Authors

Next, EFA was conducted to determine the underlying relationships between variables and identify the factors explaining the correlations among them. As detailed in Table 4, the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.864 and Bartlett's test of sphericity was significant ($p < .000$), indicating that the data were suitable for factor analysis. All factors had Eigenvalues greater than one and the cumulative percentage of variance explained was 62.933%, surpassing the threshold of 50%. After applying the extraction method and varimax rotation, the factors were categorized as follows:

- Environmental Performance (ENP): ENP1, ENP2, ENP3, ENP4
- Social Performance (SOP): SOP1, SOP2, SOP3, SOP4, SOP5
- Corporate Governance Performance (CGP): CGP1, CGP2, CGP3, CGP4, CGP5
- Firm Sustainability (FIS): FIS1, FIS2, FIS3, FIS4, FIS5

The findings reinforce the reliability and validity of the measurement scales used in this study, providing a solid foundation for further regression analysis to explore the relationships between ESG performance and firm sustainability.

4.2. Model and hypothesis verification

As shown in Table 5, the model is significant with an adjusted R^2 value of 0.453. This implies that there is a significant correlation between the independent and dependent variables. The adjusted R^2 value of 0.453 indicates that the regression model explains 45.30% of the variability in the data. In other words, 45.3% of changes in firm sustainability for manufacturing firms in HCMC can be explained by the three ESG perspectives and 54.7% of the changes in firm sustainability are attributed to factors outside the model.

Table 5. Multiple regression model results

| R | R^2 | R^2_{adj} | Std. Error | Durbin-Watson |
|-------|-------|-------------|------------|---------------|
| 0.676 | 0.457 | 0.453 | 0.46211 | 1.871 |

Table 6. ANOVA results

| | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------|
| Regression | 69.996 | 3 | 23.332 | 109.257 | 0.000 |
| Residual | 83.071 | 389 | 0.214 | | |
| Total | 153.067 | 392 | | | |

Source: Authors

This research seeks to confirm whether the dependent variable and the independent factors have collinear relationships. The null hypothesis (H_0) can be stated as $\beta_1 = \beta_2 = \beta_3 = 0$ – that is, there is no relationship between the variables. If H_0 is rejected, the model's independent variables adequately explain fluctuations in the dependent variable, thus indicating fit for the data. Table 6 shows that H_0 should be rejected due to its low level of significance ($<.05$). Therefore, variance in the dependent components can be collectively explained by the independent factors. Thus, Equation 1 is an appropriate linear regression model and is reliable at the 95% confidence level.

Table 7. Regression coefficients results

| | Unstandardized Coefficients | | Standardized Coefficients | | Collinearity Statistics | | |
|----------|-----------------------------|------------|---------------------------|-------|-------------------------|-----------|-------|
| | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| Constant | 0.739 | 0.158 | | 4.676 | 0.000 | | |
| ENP | 0.275 | 0.033 | 0.326 | 8.272 | 0.000 | 0.897 | 1.115 |
| SOP | 0.329 | 0.038 | 0.367 | 8.772 | 0.000 | 0.795 | 1.258 |
| CGP | 0.199 | 0.034 | 0.235 | 5.857 | 0.000 | 0.868 | 1.152 |

Source: Authors

All p -values for regression coefficients are below .05 (see Table 7), indicating that the null hypothesis can be rejected. Consequently, hypotheses H_1 , H_2 and H_3 are supported. Additionally, since the variance inflation factor (VIF) coefficients are less than 2, there is no significant multicollinearity among the three variables that influence the sustainability performance of manufacturing firms in HCMC. Among ESG factors, SOP has the strongest impact on sustainability performance ($\beta = 0.367$), followed by ENP ($\beta = 0.326$) and CGP ($\beta = 0.235$). This suggests that changes in these three factors directly affect firm sustainability performance. The final model for this study is represented by Equation 2.

$$Y = 0.367 \times \text{SOP} + 0.326 \times \text{ENP} + 0.235 \times \text{CGP} \quad (2)$$

5. DISCUSSION

Many studies have explored the relationship between ESG and firm sustainability (Ahmad et al., 2024; Dwivedi, 2023; Rajesh & Rajendran, 2020; Zhu et al., 2024). Handoyo and Anas (2024) proposed that the impact of environmental and social initiatives on firm performance is influenced by the regulatory and governance frameworks within which firms operate. ESG performance represents a new approach to business practices for many enterprises. This study focuses on bibliometric analysis and evidence from the manufacturing sector in HCMC. The following discussion will address key issues identified in the bibliometric analysis and explore the impact of ESG performance on firm sustainability.

5.1. ESG research trends

There is an increasing trend in research on ESG and corporate sustainability, evidenced by a growing number of published articles and cited authors, reflecting a growing focus on integrating ESG into corporate strategies. Key topics revealed by the bibliometric analysis include ESG, ESG performance, ESG disclosure and green innovation. Social support, governance issues, climate change and risk management are central themes, indicating shifting priorities as companies begin to understand the importance of these variables in furthering sustainable business practices. This change reflects a broader global engagement with ESG concerns from both academic and practical perspectives. Leading authorities in the sector have emerged, indicating a growing awareness of ESG concerns.

5.2. The effect of ESG performance on firm sustainability

In the second half of the study, a survey was used to gather data from manufacturing sector personnel in HCMC who were knowledgeable of ESG performance principles and their effect on business sustainability. Based on the survey results, social performance (SOP) had the strongest effect on firm sustainability, with a coefficient of 0.367. These results align with those of Zhou et al. (2023), who also found that social performance also has a positive effect on sustainability performance. Manufacturing enterprises in HCMC should therefore seek to enhance their social performance by improving working conditions for employees, fulfilling social responsibilities and engaging with the community. Continuous evaluation and improvement are necessary to successfully integrate social performance into business strategies. Enterprises should provide

their workforce with continuously updated, comprehensive training programmes which focus on industry trends and corporate goals. Transparent channels for career progression, coupled with mentorship programmes, can strongly enhance employee growth. Strict safety measures should be implemented and employees should be well informed about them to improve occupational wellness. Healthcare services and a clean working environment are equally important. Job satisfaction and security can be achieved through a favourable atmosphere and transparent compensation schemes with equitable benefit structures. Firms should also engage in their communities through volunteer efforts, supporting local charitable events and philanthropy. Publicising these initiatives can help raise corporate goodwill and trust. Last but not least, organisations must apply a selective approach when choosing suppliers, giving preference to those that meet ESG criteria.

Zhou et al. (2023) demonstrated that environmental performance is essential for enhancing firm sustainability. This study similarly found that environmental performance (ENP) had a significant relationship with firm sustainability in HCMC ($\beta = 0.326$). First, manufacturing enterprises must adopt advanced production technologies and modern emission reduction systems to decrease pollution. They should develop effective recycling systems, design goods with the intention of generating the least amount of waste possible and promote the use of recycled materials. Less harmful chemicals can be substituted for hazardous ones, though these less harmful chemicals should still be stored and managed safely. Additionally, emergency response procedures should be developed and environmental safety trainings should be conducted regularly so that employees understand how to prevent potential environmental incidents.

Firm sustainability is also significantly impacted by corporate governance performance ($\beta = 0.235$). Thus, manufacturing companies should enhance their working conditions by improving leadership styles and management procedures to create a positive work atmosphere. This will encourage workers to perform well in their jobs, directly benefiting the company's bottom line. Implementing an effective environmental monitoring, reporting and management system will improve environmental compliance by allowing firms to understand their influence on the environment and make data-driven choices. Internal policies should be frequently updated to reflect current regulatory conditions. Various stakeholders should be invited to participate in order to nurture an inclusive and effective regulatory regime within the manufacturing sector in HCMC. In addition, complete assessments of environmental hazards and the development of contingency plans are necessary to improve risk mitigation strategies and allow the manufacturing sector to rapidly respond to ecological challenges. Firms can build transparency and accountability by making environmental information publicly accessible and creating effective grievance resolution mechanisms. This will help enhance both community trust and corporate credibility for manufacturers based in HCMC.

Several recommendations for enterprises in Vietnam emerge from the research. First, firms should pay strong attention to social performance. CSR, such as improved

working conditions and community participation, should be given a central role in firms' strategies since it is critical to their sustainability. This includes making investments in the welfare of employees, promoting diversity and improving employee compensation and benefits.

Second, firms should improve their environmental performance. To achieve eco-friendly practices and successfully 'go green', companies have to reduce their emissions, conserve resources and make innovations. They should conduct regular environmental assessments and ensure they align with international standards.

Third, enhancing internal corporate governance is critical for the creation of long-term wealth. Responsibility, transparency and ethical conduct ensure that companies will be able to sustain their success in the long term. A positive company culture can help achieve long-term sustainability by contributing to a healthy working environment. Firms should also implement robust governance systems, create timely risk management systems and report ESG performance on a regular basis.

Fourth, ESG should be embedded within the organisation's strategy. As a key driver of sustainability, ESG practices must be woven into the fabric of the company's approach. Just as with corporate performance targets, specific ESG targets should be clearly defined and periodically reported to stakeholders.

Five, stakeholders should be included in ESG policy development. Firms should involve all stakeholders, staff, customers, suppliers and community members, for confidence-building measures and improved sustainability. Joint participation in ESG initiatives and communicating regularly about them will ensure business.

Sixth, ESG can serve as a competitive advantage for long-term business activities. Companies can stand out in the market, attract interested investors and enhance their reputation through excellence in ESG performance, allowing them to continuously improve sales and customer service. Long-term business growth and increased client loyalty may result from high ESG performance.

Seventh, innovation and continuous improvement are crucial. Organisations must periodically assess and enhance their ESG processes. Keeping up with international change fosters innovation and creates a positive environment for employees. To remain competitive in the current market, research and development funding for sustainable products and processes is imperative.

5.3. Theoretical implications

This research adds to the current body of knowledge on ESG performance and corporate sustainability by presenting empirical evidence on the influence of the individual social, environmental and governance aspects. Findings take a noncompliant stand with the orthodox perspective of the priority of the environmental and governance dimensions, therefore highlighting the need for a more integrated and balanced approach towards sustainability.

By measuring the individual effects of social performance, environmental performance and corporate governance performance on firm sustainability, this study helps sharpen theoretical frameworks by providing more detailed insights into how the ESG dimensions affect firm sustainability through the corporate sustainability channel. It also emphasises the importance of context, suggesting that industry and regional characteristics may mould the effectiveness of ESG practices. Future studies should further address the sectoral dimension, providing cross-regional comparisons and exploring long-term trends in the evolution of ESG performance models.

5.4. Practical implications

The findings of the study provide valuable guidance for manufacturing firms in HCMC seeking to improve their sustainability performance. Since social performance (SOP) was proven to have a very strong influence, it should be a priority to implement initiatives that improve employee well-being, community engagement and corporate responsibility. This would both enhance firm sustainability and increase employee productivity.

Environmental performance (ENP) and corporate governance performance (CGP) are also important, so companies should include these components in a holistic sustainability plan. This finding provides a basis for making recommendations to management, whereby policymakers and industry players can use them to work around the need to integrate social responsibility with environmental concerns and good governance. Companies can use this research as a basis for applying the ESG model to assess its sustainability practices, recognise areas in need of improvement and reorient corporate policies towards a new set of rules.

6. CONCLUSIONS

6.1. ESG research highlights

This study highlights the increasing significance of research on firm sustainability and ESG performance, with a notable rise in global attention from both industry practitioners and scholars. The keyword analysis identified key topics such as ESG performance, ESG disclosure, sustainable development, sustainability performance, firm performance and sustainability reporting. There is a growing focus on social and governance issues, climate change, risk management and green innovation. The frequency and popularity of these keywords, along with the identification of the most cited authors, reflect current trends and key areas of interest in the field. Future research should aim to identify the specific impacts of the three ESG factors

on sustainable development indicators, while also examining regional and industrial differences more closely. Understanding how individual ESG components contribute to sustainability outcomes will be crucial for refining strategies and policies in this area.

6.2. ESG effects on manufacturing firms

The survey of employees of manufacturing firms in HCMC revealed that social performance has the greatest impact on sustainability performance ($\beta = 0.367$), followed by environmental performance ($\beta = 0.326$) and corporate governance performance ($\beta = 0.235$). These findings suggest that efforts to improve social aspects, such as employee well-being, community engagement and social responsibility, will have a more substantial effect on overall firm sustainability than improvements to environmental or governance practices.

This understanding of the relative impact of each of the components of ESG provides valuable insights for both research and practice. It highlights a need for a more targeted approach where firms prioritise social initiatives ahead of environmental and governance efforts to achieve better sustainability outcomes. The findings also underscore the importance of developing tailored strategies that address the unique challenges and opportunities of different regions and industries. By leveraging the model presented in this study, firms can make more informed strategic decisions, accurately assess their sustainability performance and adopt practices that align more closely with their specific sustainability goals.

7. LIMITATIONS AND FUTURE RESEARCH

While this study has resulted in several important findings, there are also limitations resulting from measures of time, finance or other criteria that should be acknowledged. First, the dataset extracted from Web of Science for the bibliometric analysis may not include all research relevant to the study, as no other databases were checked for comparison. The literature review and identification of emerging trends might have been affected. Second, while the study captures key themes and developments in corporate sustainability and ESG, the generalisability of the study may be limited due to its focus on the Vietnamese manufacturing industry. Third, though interestingly enough a quantitative model for analysis some aspects may be left out.

In future studies, the scope of the research should be widened to include more databases and geographic regions in order to definitively identify ESG and corporate sustainability trends. Researchers should analyse the impact of ESG performance on specific sustainability indicators across multiple industries and regions to provide micro-level insights. The application of advanced analytical techniques and the

inclusion of data drawn from new sources will help enhance the validity of the findings. Exploring the role of ESG factors beyond the manufacturing sector will shed more light on their effect on firm sustainability in different contexts. Additionally, useful insights could be gained from longitudinal studies that trace the evolution of ESG performance and look at its long-term impact on company sustainability. Adopting these future research directions is expected to enhance our understanding of the effects of ESG performance on sustainability, fostering both academic research and practical applications.

DISCLOSURE STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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