



Role of corporate governance in quick response to Covid-19 to improve SMEs' performance: evidence from an emerging market

Thanh Tiep Le¹ · Abhishek Behl²

Received: 9 September 2021 / Revised: 17 November 2021 / Accepted: 19 November 2021 / Published online: 27 April 2022
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2021, corrected publication 2022

Abstract

This paper aims to evaluate the role of corporate governance on performance of the small and medium-sized enterprises by exploring the mediating role of social responsibility engagement and environmental responsibility engagement between corporate governance and firm performance in the context of an emerging market. The paper follows a quantitative approach. The study sample was composed of 495 responses covering top executives, managers, and experts. The Analysis of a moment structures (AMOS version 20) was used to analyze the small and medium-sized enterprises data in an emerging economy in Southeast Asia in the year 2021. Our findings revealed that corporate governance has a significant and positive relationship with firm performance, social responsibility engagement and environmental responsibility engagement. In addition, social responsibility engagement and environmental responsibility engagement are found to mediate the relationship between corporate governance and firm performance. To the best of our knowledge, this is the first research that explores the mediating role of social responsibility engagement and environmental responsibility engagement between corporate governance and firm performance for the small and medium-sized enterprises. This study has novel contributions by providing important insights into the effective corporate governance mechanism and how corporate governance contributes to improving firm performance towards sustainability through engaging in social and environmental responsibility. Additionally, its application to food the small and medium-sized enterprises in the current context of an emerging economy in Southeast Asia reinforces the originality of this study. This study contributions are of great interest to academics, experts, business practitioners, and policymakers.

Keywords Corporate governance · Social responsibility engagement · Environmental responsibility engagement · SMEs performance · Emerging market

1 Introduction

Corporate governance (CG) is a broad concept and has several controversies due to different theoretical approaches and perspectives. Previous studies commonly found that corporate governance mechanism affects both the firm financial and social results (Gangi et al. 2021). In the context of fierce competition, corporate governance mechanism tends to be oriented towards sustainability geared towards balancing the

benefits of society, the environment and economy. In order to achieve that, engaging in social and environmental responsibilities is no longer an option for businesses but a default expectation (Hurst and Ihlen 2018).

Social responsibility engagement (SRE) reflects the firm's ability to meet society's expectations to be a good citizen by respecting their fundamental rights conventions in external and internal communities (Melo and Garrido-Morgado 2012). While environmental responsibility engagement (ERE) reflects the firm engagement on the environment and society, whereby reduce the negative impact of firm on the environment by various strategies (Huo et al. 2021) and reduce "cost for society" (Gangi et al. 2021) that facilitates new market entries Scuotto et al. (2020) by eco-friendly designed-technology and product. Overall, those will enhance stakeholders' satisfaction towards firms that potentially lead to their attachment to the firm.

✉ Abhishek Behl

Thanh Tiep Le
tieplt@uef.edu.vn

¹ Ho Chi Minh City University of Economics and Finance, Ho Chi Minh City, Vietnam

² Fortune Institute of International Business, New Delhi, India

The food industry causes pressures on the environment in multiple ways through its value chain. For instance, food manufacturers freely use natural resources, and food suppliers and distributors adversely affect the “natural environment” due to habitual practices on packaging-related, waste-related, and logistics-related. In today's dynamic world, business stakeholders are increasingly aware that the increase in business activities is associated with environmental and social issues (Ansu-Mensah et al. 2021). In addition, global phenomena such as the Covid-19 epidemic make humankind more interested in these issues, moreover, its origin is also a matter of deep concern to be investigated. Therefore, certain world organizations have been spending efforts to find the origin of Covid-19. Most media reports that Covid-19 originated from a seafood market in China; however, there is no consensus in conclusion so far. In the context of Vietnam, environmental and social issues are increasing along with socio-economic development, and local consumers are increasingly concerned about the responsibility of businesses in addressing this concern (Nguyen et al. 2021). In particular, the food industry is highly interested in its relevance to social and environmental issues.

Existing literature in this domain highlights the advantages of corporate engagement with their social and environmental responsibilities in enhancing corporate competitive advantage and improving firm performance sustainably (Gangi et al. 2021; Yu et al. 2020; Ho 2020). Such advantages are dedicated to enhancing corporate resources and knowledge management, shaping reputation, sustaining innovations, advancing products, improving customer satisfaction, enabling premium segment accessibility, improving efficiency, reducing operational cost, and improving environmental indicators that lead to improved corporate performance in various ways (Gangi et al. 2021; Scuotto et al. 2020; Scuotto et al. 2019; Martinez-Conesa et al. 2017). From an operations management perspective, SRE and ERE are worthy and tightly associated with how businesses are managed and controlled to be environmentally and socially responsible, which stakeholders are increasingly concerned about (Samson 2020). However, extant literature shows a lack of empirical studies on how CG is associated with SRE, ERE and how this association affects FP in the food industry in emerging economies like Vietnam.

In response, this paper aims at addressing this gap by integrating SRE and ERE to mediate the association between CG and FP. According to stakeholder theory (Freeman 1984), the CG mechanism is seen as central to guiding businesses to operate and behave in a way that is socially and environmentally responsible. When the

enterprise genuinely addresses the issues of concern to the stakeholders, the stakeholders will have a positive response to the business that leads to improved corporate performance in various ways. In addition, according to resource-based view theory point of view (Barney 1991), resources of the enterprise from the perspective of CG, the board of directors is seen as the source of the strategic resources of the enterprise that enabling SRE and ERE efforts for the betterment of society and the environment. As a result, this will lead to enhanced corporate performance in a sustainable manner. Therefore, the objective of this study is to thoroughly understand how CG is linked with SRE and ERE and how this linkage boosts firm performance. In order to address this objective, this research aims at answering the following questions:

RQ1. How does corporate governance enhance firm performance?

RQ2. How do social responsibility engagement and environmental responsibility engagement mediate the relationship between corporate governance and firm performance?

This study focuses specifically on the food industry, small and medium-sized enterprises (SMEs) in Vietnam based on the following point of view. First, the Covid-19 epidemic adversely affects the food industry in particular and the economy in general in many aspects (Chowdhury et al. 2020). Therefore, the sustainability of the food industry is getting more and more attention because of its specificity related to natural resources, human health and safety for the development of future generations in human society, the natural environment balance and global economy as a whole (León-Bravo et al. 2019). In addition, according to Ritchie and Roser (2020), the food industry has a high potential for adverse effects on the environment. Simultaneously, the food industry is considered to be sensitive to changes in the environment, market needs and customer behavior, especially in the context of the Covid-19 epidemic (Sharma et al. 2021). Second, SMEs are important force for the national economy, accounting for an average rate of over 90% (Schaper 2020). This rate is especially high in emerging economies such as Vietnam that accounted for about 97% and provided 60% of employment opportunities for society and contributed over 40% to GDP (Nguyen et al. 2020). Although CG thinking has improved to some extent over time, however, due to limited resources for development, most SMEs are still governed in the old way which prioritizes profits over other benefits for society and the environment. This tremendously affects the way they operate and behave towards society and the environment. Based on this analysis, it's necessary to prioritize the food industry in the context of SMEs in Vietnam for this

study. Moreover, in the context of the Covid-19 epidemic, the food industry is considered an important industry in terms of societal needs and potential to save the economy. Therefore, understanding how to sustain in the context of a fast-changing world is critical not only for businesses but also for the nation, region and the world to balance economic, social, and environmental values.

Therefore, this study provides novel contributions to the extant literature of CG and FP. Firstly, this study extends the existing literature on the association of CG and FP by integrating the mediating roles of SRE and ERE in the link between CG and FP. Secondly, this study provides insight into sustainable development mechanisms for small and medium-sized enterprises (SMEs) in the new challenging context. In addition, its application into in food industry in the emerging economy reinforces the novelty of this study. These contributions are of great interest to business practitioners, entrepreneurs, executives, and managers for better corporate governance mechanisms towards sustainable corporate advantages and sustainable development.

The remaining sections of this manuscript are structured as follows. Section 2 presents the theoretical underpinning that describes the relevant theories and literature review to support the arguments in this study. Section 3 is the development of research hypotheses and research models. Section 4 details the research design that presents the sample size and procedure, and constructs. Section 5 assesses the measurement model and structural model. Section 6 discusses the findings and implications, highlights the limitations and future scope of the study. Section 7 concludes the study.

2 Theoretical underpinning

2.1 Relevant theories

This study applied the underlying theories, including stakeholder theory, the resource-based view (RBV), natural RBV, and stewardship theory, to explain the study's argument and hypothetical relationships. The scope of application of each theory in this research scenario is presented in Table 1 below.

Table 1 presents the main theories that this research is based on for discussion and analysis. In this research scenario, they are complementary to each other. These theories were intentionally chosen to be used in this study based on this argument. The objective of this study is to examine how CG improve FP and how CG affects corporate engagement in social and environmental responsibilities, through that, boost FP. In this context, the perspectives of stakeholder theory, RBV theory, natural RBV theory, and stewardship theory with its relevance as presented in Table 1 below are considered appropriate as the underpinning theories for this study. Because, the main goal of CG in the current context is to lead the company towards being environmentally and socially responsible for sustainable development towards the interests of stakeholders on the basis of balancing economic, social and environmental values. From this perspective, it's assumed that when the enterprise genuinely addresses the issues of concern to the stakeholders, the stakeholders will have a positive response to the business that leads to improved corporate performance in various ways. In addition, according to RBV theory point of view (Barney 1991), resources of the enterprise from the perspective of CG,

Table 1 The main theories that concerned

Source	Theory	Definition and a brief explanation
Freeman (1984)	Stakeholders Theory	Corporate governance mechanisms are the center that "orient businesses towards environmental and social responsibility" and at the same time "shape the relationships between shareholders and stakeholders"
Barney (1991)	Resources-based-view (RBV)	The Board of directors holds a vital role in the corporate governance system. It strategically equips the firm with the necessary knowledge, adds values, and expands relationships that will generate benefits towards sustainability
Barney (1991)	Natural RBV	Environmental engagement facilitates the firm to achieve superior results by adopting sustainability innovation and improving innovation capacity. Those are significant to constraints' natural environment limitations and create "a sustainable competitive advantage"
Muth and Donaldson (1998)	Stewardship Theory	Stewardship theory is contradictory to agency theory regarding the perception of roles, functions, and conflict of interest related to the executives of the firm. This theory presumes that managers are trustworthy, and they perform their duties without fail for maximizing wealth for shareholders. Accordingly, stewardship theory assumes the managerial person as "stewards" instead of "being self-centered" and self-interest is not their only motives. Therefore, other motives that may stimulate "managers behaviors" such as non-financial incentives as "appreciation", "internal satisfaction" and "recognition" those are "ignored" in the agency theory

the board of directors is seen as the source of the strategic resources of the enterprise that enabling SRE and ERE efforts for the betterment of society and the environment. As a result, this will lead to enhanced corporate performance in a sustainable manner.

2.2 Literature review

This study adopted a systematic review approach based on the guidance of Tranfield et al. (2003). This approach began with identifying problems to be solved by performing a review. Next, a protocol was established to specify the methods to be used during the review to minimize bias. The protocol covers the basics such as inclusion and exclusion criteria, strategy to search literature, criteria for selection, process to select, process to extract data, method to aggregate data. Next, perform a search of relevant literature for a systematic review. Then evaluate and select. Then conduct data extraction, then analyze, summarize, and synthesize relevant studies. Next, proceed to interpret the results.

As a result, Table 2 below reports the relevant studies on the association of CG and FP in different settings. This provides evidence of how CG associates with the various outcomes of the firm in a different context that supported arguments and research problem identification for this study, thereby helping the author determine the good research questions and conceptualize a new research idea for novel contribution. Specifically, the current literature shows that the findings are inconsistent, or there is no consensus among the findings of the existing literature. For instance, the relationship between CG and FP is found to be positive and significant by Gangi et al. (2021); Lu et al. (2021); Shaji and Shajahan (2020); Warrad and Khaddam (2020); Hussain et al. (2019). While this relationship is found to be negative and significant by Assankutty et al. (2019) or mixed-result by Yihun et al. (2019); Shao (2019) or unaffected by Diriba and Basumatary (2019). The heterogeneity in the results of the existing literature can be argued by the contextual and industry factors that affect the relationship between CG and FP. For instance, the following studies are carried out with different backgrounds such as economy, territories, industry of activity, research methods. In addition, mediating factors can also influence the relationship between CG and FP. Moreover, there is very little research on the food industry and exploring the involvement of social and environmental responsibility factors in the relationship between CG and FP. This analysis discloses important research gaps that need to be filled so that businesses can orient their development to suit the new context.

In addition to this, these key constructs were also reviewed, and their concepts are discussed in the section below Table 2.

2.2.1 Corporate Governance (CG)

CG is defined as involving a system and structure that are established to direct and control the company. Accordingly, governance structures, rules, norms, procedures, practices, processes, and performance evaluation systems are set in place to ensure that the company is well-governed and led to achieving long-term success. It deals with the relationships between key corporate components including the executive board, board of directors, shareholders and other stakeholders (Samlal 2020). In this research scenario, CG refers to how the company is governed so as to activate the best practices of CG towards the environment, society and governance (Arif et al. 2021). Accordingly, promoting corporate engagement in social and environmental responsibilities to address the interests of stakeholders on the basis of balancing the interests of the economic, social and environmental values.

Existing literature demonstrates that CG is central to the organizational operation. Its philosophy is to guide and control the firms towards ensuring transparency in business operations and accountability to stakeholders. According to Rehman and Hashim (2021), a good CG is a prerequisite for business survival. CG qualification positively relates to economic growth thereby, poor CG mechanisms can lead to a crisis in Asia, Russia, and South America (Assankutty et al. 2019). On the contrary, good CG can facilitate a firm to enhance its performance in various ways and improve company valuation (Yu et al. 2020; Ho 2020). CG capability may be affected by board-related factors such as "board independence"; "board size"; "compensation policies" and "board diversity" those are important in dealing with various stakeholders and objects (Jain and Jamali 2016).

Theoretically, CG is perceived variously depending on different theories. Specifically, from the agency theory point of view, the narrow stance of CG is strictly built on the mandate that binds managers to shareholders (Jensen and Meckling 1976). From this perspective, managers should earn money for ownership by complying with society's embodied rules in the ethical laws and customs (Friedman 1970). Furthermore, agency theory views that managers are "opportunists" and their interests exceed the organizations. Therefore, the board of directors must have the authority to limit the managers and let them act in the interests of shareholders (Hussain et al. 2019). This fiduciary restricts the corporate social and environmental engagement as a problem of agency.

However, against the point of agency view, stakeholder's theory (Freeman 1984) and hypothesis of resolving conflicts (Jo and Harjoto 2012) provided debatable-argument relative to "effective CG mechanisms" to sustain corporate social responsibility. Manning (2015) argued that from the persistent corporate responsibility perspective, CG includes

Table 2 Relevant studies

Authors	Contexts	Methodology	Finding / Contribution	Limitation
Gangi et al. (2021)	+ Food industry	+ Panel regression	+ Corporate governance positively impacted corporate social and environmental responsibility engagement + Social and environmental responsibility engagement positively impacts firm performance	+ Research context + Data constraints + Corporate governance measures are limited to board characteristics
Bolourian et al. (2021)	+ 67 studies published on 18 journals in the period (1992–2020)	Systematic review	+ Corporate governance (emphasizes two attributes: structure and characteristics), has an impact on the outcomes of corporate social responsibility practices These two attributes do not operate independently but interact with each other, along with contextual factors, differently affecting the corporate performance in terms of implementing social responsibility	+ Method
Lu et al. (2021)	+ Pakistan	+ Ordinary least square	+ Corporate governance factors have a positive association with firm performance. Importantly, the interactive role of CSR is very important in this relationship	+ Context + Data constraints
Warrad and Khaddam (2020)	+ Jordan + Banking	+ Regressions	+ Corporate governance characteristics significantly affect firm performance (return on equity is emphasized as an indicator of firm performance)	+ Context + Data constraints
Koji et al. (2020)	+ Japan + Listed firms + Family and non-family manufacturing firms	+ Panel regression	+ The impact of corporate governance on firm performance is found not same between family firms and non-family firms	+ Research context + Research method
Bawaneh (2020)	+ Jordan + Financial institution	+ Combined document analysis and record analysis	+ Corporate governance component individually has a different level of impact on firm performance, positive and negative and mixed effects	+ Research context + Business sector
Shaji and Shajahan (2020)	+ India + Family-owned + Listed firms	+ Linear regression analysis	+ “Corporate governance characteristics” are found to affect firm performance positively significantly	+ Research context + Business sector
Assankutty et al. (2019)	+ India	+ Regression model	+ Corporate governance disclosure practices were found a negative and significant impact on firm performance	+ Data constraints + Research context
Diriba and Basumatary (2019)	+ India	+ Panel regression	+ There are no specific effects of corporate governance variables on firm performance	+ Research context + Data constraints

Table 2 (continued)

Authors	Contexts	Methodology	Finding / Contribution	Limitation
Shao (2019)	+ China + Listed firms	+ Panel regression	+ The relationship between corporate governance structures and firm performance is found; differently, some proved negative, some proved positive, and some no relation	+ Research context + Research data
Yihun et al. (2019)	+ Ethiopia + Banking industry	+ Panel regression	+ "Corporate governance mechanisms" are found to affect firm performance differently depending on the individual component, whereby board size has a significant negative effect on firm performance; on the contrary, board diversity and board experience have a significant positive effect on firm performance	+ Research context + Research method + Business sector
Hussain et al. (2019)	+ Pakistan + Non-financial listed firms	+ Ordinary least square regression	+ Corporate governance positively significantly affects firm performance	+ Research context + Research method
Hove-Sibanda et al. (2017)	+ SMEs + Vanderbijlpark	+ Quantitative method + Smart partial least square	+ Corporate governance positively significantly affects firm competitiveness and firm performance	+ Research context + Mediator

actions taken voluntarily regardless of "legal requirement" to drive firm-owned interests of broader society and competitive interests. In addition, CG composes of the "organizational procedure through which diverse CG instruments influences both social and financial outcomes" (Jain and Jamali 2016). Specifically, from the theory of stakeholders' outlooks, "CG instruments are means to orientate businesses towards social and environmental responsibility" and "shape the relationships concerning stakeholders and shareholders".

Based on the above discussion, it is shown that the positive impact of a good CG on FP has been demonstrated by previous studies. This is supported by the stakeholder theory view as it holds that the mechanism of CG is central to guiding businesses to operate and behave in a way that is socially and environmentally responsible. When the enterprise genuinely addresses the issues of concern to the stakeholders, the stakeholders will have a positive response to the business that leads to improved corporate performance in various ways. In addition, according to resource-based view theory point of view (Barney 1991), resources of the enterprise from the perspective of CG, the board of directors is seen as the source of the strategic resources of the enterprise that enabling SRE and ERE efforts for the betterment of society and the environment. As a result, this will lead to enhanced corporate performance in a sustainable manner. However, the existing literature lacks empirical studies on how CG can boost FP with and without linkage with SRE, ERE for the food sector SMEs in emerging economies. The above discussion can support hypothesis to address the research questions about how CG can improve FP and how SRE and ERE mediate the linkage between CG and FP. The construct of CG was adopted from Jain and Jamali (2016), Naciti (2019); Dalton and Kesner (1987); Donaldson and Davis (1991), as presented in Table 3 below.

2.2.2 Social Responsibility Engagement (SRE)

Social responsibility engagement (SRE) is defined as the manner in which an enterprise does identify its responsible activities towards society (Gangi et al. 2021; Laguir et al. 2021). SRE is concerned with the engagement of businesses in carrying out their responsibilities to society in a systematic manner. The concept of SRE was approached in various ways in academics. However, the similarity in the concept of SRE is to make society better in different ways. In this research scenario, SRE refers to corporate engagement in fulfilling their responsibilities to society. Such responsibilities aim towards holistically developing employees, contributing to improving community well-being, respecting human rights, respecting the rights and interests of stakeholders, opening up opportunities for the community to improve quality of life, supporting a social cause, and being accountable for their products in front of users (Sciarelli et al. 2021). In turn, businesses can shape their reputation, develop their

Table 3 Constructs

Constructs	Items	Descriptions	References
Corporate Governance (CG)	CG1	Board size (Total members of the board)	Jain and Jamali (2016); Naciti (2019); Dalton and Kesner (1987); Donaldson and Davis (1991)
	CG2	Board independence (Percentage of independent directors to total directors)	
	CG3	Board diversity (Percentage of female directors to the total directors)	
	CG4	CEO duality (One holds two positions of CEO and chairman at the same time)	
	CG5	CEO compensation (Compensation policy for CEO include financial-related and non-financial-related)	
Social Responsibility Engagement (SRE)	SRE1	Improve products' quality continuously	Melo and Garrido-Morgado (2012)
	SRE2	Develop employees' competencies	
	SRE3	Do not discriminate in the work environment	
	SRE4	Do not use hazardous substances in the product	
Environmental Responsibility Engagement (ERE)	ERE1	Improve processes continuously to reduce consumption of inputs such as materials, water, ect	Gangi et al. (2020); Scuotto et al. (2020)
	ERE2	Innovate sustainably to enhance efficiency and productivity	
	ERE3	Install environmental management system to reduce pollutants emitted	
	ERE4	Apply actively optimal electrical equipment to reduce consumption of energy in order to reduce emissions	
	ERE5	Increase in using eco-friendly materials and packaging	
Firm Performance (FP)	FP1	EBITDA ("Earnings before interest, taxes, depreciation, and amortization divided by total assets")	Mishra and Kapil (2017); Arora and Sharma (2016); Michelon et al. (2013)
	FP2	Sales growth rate	
	FP3	Market share growth	
	FP4	ROA (Return on assets)	
	FP5	ROE (Return on equity)	

resources and capabilities, improve their products, enhance customer satisfaction, etc., leading to improved FP in various ways. In this study, SRE's construct was adopted from Melo and Garrido-Morgado (2012), as described in Table 3 below.

The above discussion shows that SRE has an important role not only for the betterment of society but also for the sustainable development of enterprises in the new challenging context. In this context, businesses cannot survive if they do not engage in their social responsibility. Existing literature in this domain highlights the advantages of corporate engagement with their social and environmental responsibilities in enhancing corporate competitive advantage and improving FP sustainably (Gangi et al. 2021; Yu et al. 2020; Ho 2020). Such advantages are dedicated to enhancing corporate resources and knowledge management, shaping reputation, sustaining innovations, advancing products, improving

customer satisfaction, enabling premium segment accessibility, improving efficiency, reducing operational cost, and improving environmental indicators that lead to improved corporate performance in various ways (Gangi et al. 2021; Scuotto et al. 2020; Scuotto et al. 2019; Martinez-Conesa et al. 2017). However, whether SRE mediates the relationship between CG and FP has not been explored in depth in the current literature. The above discussion can support hypothesis to address the research questions about how SRE mediate the linkage between CG and FP.

2.2.3 Environmental Responsibility Engagement (ERE)

Environmental responsibility engagement (ERE) is defined as the manner in which an enterprise does identify its responsible activities towards the environment (Gangi et al.

2021; Laguir et al. 2021). The concept of ERE was widely approached to ensure the best for the environment in various aspects. Accordingly, aspects such as reducing emissions and pollution, not using scarce resources, not trading short-term benefits of businesses to harm the environment in any way, promoting continuous innovation, reducing waste, using environmentally friendly materials are highly concerned in ERE (Sciarelli et al. 2021). Likewise, ERE is concerned with the engagement of businesses in carrying out their responsibilities to the environment in a systematic manner. In turn, businesses can enhance their credibility, develop their resources and capabilities, improve their products, improve efficiency, reduce risk exposure that will improve FP in various ways (Yu et al. 2020; Ghoul et al. 2018). In this study, ERE's construct was adopted from Melo and Garrido-Morgado (2012), as described in Table 3 below.

The above discussion shows that ERE has an important role not only for the betterment of the environment but also for the sustainable development of enterprises in the new challenging context. In this context, businesses cannot survive if they do not engage in their environmental responsibility. Existing literature in this domain highlights the advantages of corporate engagement with their social and environmental responsibilities in enhancing corporate competitive advantage and improving FP sustainably (Gangi et al. 2021; Yu et al. 2020; Ho 2020). Such advantages are dedicated to enhancing corporate resources and knowledge management, shaping reputation, sustaining innovations, advancing products, improving customer satisfaction, enabling premium segment accessibility, improving efficiency, reducing operational cost, and improving environmental indicators that lead to improved corporate performance in various ways (Gangi et al. 2021; Scuotto et al. 2020; Scuotto et al. 2019; Martinez-Conesa et al. 2017). However, whether ERE mediates the relationship between CG and FP has not been explored in depth in the current literature. The above discussion can support hypothesis to address the research questions about how ERE mediate the linkage between CG and FP.

2.2.4 Firm Performance (FP)

Firm performance (FP) is defined as an important indicator of a management control system that reflects an enterprise's ability to fulfill its objectives and address the expectations of various stakeholders (Vij and Bedi 2016). Thus, depending on the specific goals of the business, the performance indicators will be determined accordingly. In this study, the FP indicators include operational performance and financial performance. For which, operational performance was measured by assessing the firm profitability through ROA (return on assets) (Akbar et al. 2016; Mishra and Kapil 2017), which explain how effective and efficient the firm's assets were

used by management to generate better returns (Assankutty et al. 2019). From this point of view, better management practices lead to better ROA, while advanced practices (management) are the outcome of better governance practices. ROA is a distinct measure of operation performance as it is susceptible during the short term (Assankutty et al. 2019). In addition, market share growth was employed as a key performance indicator for business growth (Wang 2019; Abbas 2020). With regards to financial performance measures, ROE (return on equity) (Arora and Sharma 2016; Chahal and Kumari 2013), sales growth rate, and the proportion of Earnings Before Interest, Taxes, Depreciation, and Amortization-EBITDA to total assets were used those are of shareholders' interests (Michelon et al. 2013). Specifically, a company with a high ROE can mobilize more cash internally, which can be used for various profitable reinvestment opportunities consistently in the future. Improved CG practice can lead to improved "cash management" and reduced "agency conflict" in a company.

FP is widely studied by the current literature as a dependent variable, as the outcomes of efforts in business activities. Therefore, different efforts and different resources can lead to different results. In this study, FP is the result of corporate governance efforts, according to which, a good corporate governance is seen as a source of strategic resource that leads the business to operate in an environmentally and socially responsible manner towards balancing economic, environmental and social values. Moreover, from the RBV perspective, board of directors is seen as the source of the strategic resources of the enterprise that enabling SRE and ERE efforts for the betterment of society and the environment. As a result, this will lead to enhanced corporate performance in a sustainable manner. However, in the context of food section SMEs in emerging economy, whether CG can boost FP with and without linkage with SRE, ERE needs further examination in this study. The above discussion can support hypothesis to address the research questions about how CG can improve FP and how SRE and ERE mediate the linkage between CG and FP.

3 Hypotheses development

3.1 The mediating role of Social Responsibility Engagement (SRE) and Environmental Responsibility Engagement (ERE) in the relationship between Corporate Governance (CG) and Firm Performance (FP)

The hypothesis of the mediating role of SRE and ERE in the relationship between CG and FP is developed based on the lines of argument on the influence of CG on SRE and ERE, likewise, the influence of SRE and ERE on FP.

The influence of CG on environmental and social responsibility engagements (ERE, SRE).

According to RBV theory (Barney 1991), the board of directors holds a vital role in the CG system who strategically equip the firm with the necessary knowledge, add values, and expand relationships that will generate benefits towards sustainability. In addition, from the perspective of RBV, corporate strategic resources have a significant association with a corporate sustained competitive advantage. In this research scenario, CG is considered a corporate strategic resource of the organization that is valuable, unique, inimitable, and irreplaceable (Barney 1991). On this basis, CG refers to the elements of people (leaders) and their associated attributes such as intellectual capital, vision, strategic thinking, processes, capabilities, knowledge, relational capital that enabling businesses to fulfill their responsibilities towards society and the environment. In turn, it will lead to corporate competitive advantage and outcomes in a sustainable manner (Rahman and Carpano 2017). Therefore, a good CG is a governance mechanism that facilitates businesses to engage in their responsibilities towards society and the environment and incorporate such responsibilities into the business activities. As a result, it leads to sustainable development that the interests of stakeholders, society, and the environment are inclusive.

Gangi et al. (2021) revealed that effective board characteristics in CG have a positive relationship with CRE and ERE. In addition, current literature shows that the association of CG and SRE, ERE was examined from various approaches (Bolourian et al. 2021; Naciti 2019). According to Gangi et al. (2021), the board of directors (BOD) is destined to be corporate strategic resources based on their knowledge, relationships, strategic thinking, capabilities which are necessary for a supportable corporate culture. In addition, BOD characteristics play a significant role in organizational culture characteristics and become drivers for corporate commitment and knowledge sharing and learning among the stakeholders of businesses (Intezari et al. 2017). From the perspective of the knowledge-based view, knowledge management is conceptually perceived as an effectual tool to encourage knowledge sharing and lessen the conflict potential among stakeholders (Fang et al. 2013). While, from the CSR approach perspective, an effective CG mechanism can lead to increased intellectual properties that enhance FP and corporate social performance (Gangi et al. 2019a). Therefore, “socially responsible CG is essential to assure the corporate behaviors support with stakeholders' expectations.” Hence, CG “acts as a supplementary instrument for enhancing environmental and corporate social engagement and stakeholders' sharing values” (Manning et al. 2006).

In overall, the CG mechanism is positively associated with social and environmental responsibility engagement

by addressing various “pressures from stakeholders” that are consistently adaptable with comprehensive approaches towards environmental, economic, and social interests among enterprises in the food industry, according to Coppola and Ianuario (2017). Therefore, the association of CG and SRE, CG and ERE are reasonably hypothesized as follow.

H1_a: CG has a positive relationship SRE.

H1_b: CG has a positive relationship with ERE.

The influence of environmental, social responsibility engagement (CRE and ERE) on firm performance (FP).

The impact of CG on SRE and ERE was found to be positive and significant, according to Gangi et al. (2021). Theoretically, this relationship can be explained by the stakeholder theory (Freeman 1984) and RBV (Barney 1991). Specifically, corporate engagement in their responsibilities towards society and the environment can be explained by stakeholder theory. Society and the environment are among the important components of stakeholders those are influenced by business activities, simultaneously affect corporate performance in various ways (Freeman et al. 2020). Similarly, the positive impact of SRE and ERE on FP can be explained by RBV theory. In this context, SRE and ERE are seen as critical resources of the organization for creating sustainable competitive advantages such as resource enhancement, knowledge management improvement, reputation enhancement, sustainable innovation, product improvement, customer satisfaction enhancement, premium segment accessibility, productivity improvement, cost reduction, environmental indicator improvement, those lead to improved FP in various ways (Gangi et al. 2021; Scuotto et al. 2020; Scuotto et al. 2019; Martinez-Conesa et al. 2017).

In addition, from the perspectives of natural RBV (Barney 1991), ERE facilitates firms achieving superior performance by adopting sustainability innovations and improving innovative capability, which is significant to diminish the possible adverse impact of business activities on the natural environment, simultaneously creating “sustainable competitive advantage” for a firm, according to Scuotto et al. (2020). Besides, ERE helps reduce risk levels while enabling the firm to enjoy “premium price” (Kim 2017) and increase corporate efficiency (Melo and Garrido-Morgado 2012). In the food industry, companies tend to increase their intention to be identified as socially and environmentally responsible by customers, besides the outstanding advantages of product characteristics in terms of quality-related, safety-related and eco-friendly. Furthermore, Gangi et al. (2019a) states that SRE and ERE could foster the learning process that can help mitigate the potential risks by promoting sustainable innovations, consequently, attract financial stakeholders. In addition, according to Gangi et al. (2021), SRE and ERE minimize the risk of additional costs that may happen due to a lack of

engagement in environmental and social responsibilities. As a result, this leads to improved FP.

Based on the above arguments, the author proposed the hypothesis of the relationship between SRE, ERE, and FP as follow:

H3_a: SRE has a positive relationship with FP.

H3_b: ERE has a positive relationship with FP.

Moreover, SRE and ERE are commonly ascribed as measures to determine the extent from which an enterprise engages in CSR (Franceschelli et al. 2019). Gangi et al. (2021) found that effective CG mechanism drives businesses to engage in social and environmental responsibilities. CG affects the social-environmental responsible performance in the sense that the structural characteristics of the board can influence the board's tendency to social and environmental engagement (Jain and Jamali 2016). In this context, effective CG mechanism help reduce possible conflicts among stakeholders and provide effective support to management level in addressing SRE and ERE concerns. Besides, Gangi et al. (2021) also found that SRE and ERE have a positive and significant relationship with FP. In this view, the CG mechanism impacts FP through the mediation mechanism of CRE and ERE. From the knowledge management perspectives, SRE and ERE are seen as important procedures of accruing experience and knowledge (Tang et al. 2012) that in turn facilitate innovations (Scuotto et al. 2020) and enhanced FP in a sustainable manner (Martinez-Conesa et al. 2017).

In addition, Martinez-Conesa et al. (2017) asserted that SRE and ERE offer "innovative opportunities" by incorporating the "social and environmental issues" into the development process of new products or processes. Besides, implementing corporate social and environmental responsibility may help firms promote innovations by utilizing "environmental, social or sustainability drivers" that contribute to breakthrough methods for developing new products, services, processes, and markets (Gallego-Álvarez et al. 2011). Those outcomes will result in generating a competitive advantage for the firm against its competitors and improving FP. From the perspective of RBV theory, governance mechanism and board characteristics involve in how the company is governed that are very important to the extent to which the firm engages in social and environmental responsibilities.

The above discussion indicates that CG has a crucial role in enhancing FP in various context. It's shown that CG enhances FP with the mechanism of enhancing the competitive advantage of enterprises in terms of advancing resources, advancing products, good reputation, enriching knowledge and accruing experiences that derive from corporate engagement in social and environmental responsibilities. In this study, the role of SRE and ERE is to transform CG efforts into value for society, the environment and the business. From the stakeholder theory perspective, it holds that the mechanism of CG is central

to guiding businesses to operate and behave in a way that is socially and environmentally responsible. When the enterprise genuinely addresses the issues of concern to the stakeholders, the stakeholders will have a positive response to the business that leads to improved corporate performance in various ways. In addition, according to RBV theory point of view (Barney, 1991), resources of the enterprise from the perspective of CG, the board of directors is seen as the source of the strategic resources of the enterprise that enabling SRE and ERE efforts for the betterment of society and the environment. As a result, this will lead to enhanced corporate performance in a sustainable manner. This argument supports the hypothesis that SRE and ERE mediate the linkage between CG and FP in this study.

Based on the above arguments, the author proposed the hypothesis of the mediating influence of CRE and ERE in the relationship between FP and CG as follow:

H4_a: SRE mediates the relationship between CG and FP.

H4_b: ERE mediates the relationship between CG and FP.

3.2 The nexus between CG and FP

The association of CG and the various outcomes of a firm was approached in various aspects by previous studies. For instance, Samlal (2020) found that effective governance mechanisms positively correlate with business innovation capability towards sustainable development. In addition, Naciti (2019) found that board diversity and separating the roles of CEO and chairman has a positive relationship with organization sustainability. Moreover, according to Assankutty et al. (2019), the nexus between CG and FP was inconsistently found in the previous. For example, Arora and Sharma (2016); Black et al. (2006) reported that the CG mechanism positively impacts FP. At the same time, Diriba and Basumatary (2019) argued that CG does not impact FP. Further, Zabri et al. (2016) contended that better CG does not necessarily improve FP.

Current literature on CG revealed inconsistent findings regarding the impact of individual indicators of CG on FP. For instance, Lorsch and MacIver (1989) argued that large board size negatively impacts FP because it hinders fast decision-making and increases operational costs associated with the coordination process of board's members to reach consensus (Naushad and Malik 2015; Diriba and Basumatary 2019; Aljifri and Moustafa 2007). While Jackling and Johl (2009); Ciftci et al. (2019) argued that large board size provides more advantages by facilitating board independence and board diversity, those will improve firm performance. On the contrary, some studies stated that small board size associates with higher profitability than large board size (Mak and Kusnadi

2005; Yermack 1996). One more author determined that when a board consists of seven to eight people, they are less likely to be more effectual, which makes executives control easier (Jensen 1993).

CG is a complex domain because it concerns the backbone of the business that affects how the business is directed and controlled. Despite the dissonance in the findings of the existing literature on the relationship between CG and FP as discussed above, in this context, the authors argue that contextual factors and industry specifics play a very important role affecting this relationship. According to Gangi et al. (2019a), CSR approach aligns with the research framework that better CG mechanism can lead to improved FP and enhanced corporate social performance. Moreover, from the stakeholder theory (Freeman 1984), businesses have a manifest motive to spend their efforts to promote their engagement in social and environmental responsibilities because they understand the potential value derived from such practices. Through which, the business fulfills its obligations and responsibilities to its various stakeholders, as a result, the business receives positive responses from stakeholders that leads to improved firm performance. In addition, from the RBV theory, CG is seen as a source of strategic resources of the business that are crucial in enabling the business to engage in social and environmental responsibilities, consequently, leading to improved corporate performance. Based on this argument, the relationship between CG and FP is reasonably hypothesized as follow:

H2: There is a significant nexus between corporate governance (CG) and firm performance (FP).

3.3 Research model

The research model is developed based on the above arguments and the proposed research hypotheses, as Fig. 1 below.

4 Research settings and methodology

The theoretical framework of this study is principally adopted the relevant theories of stakeholder theory (Freeman 1984), RBV theory, natural RBV (Barney 1991), stewardship theory (Muth and Donaldson 1998) with its relevance as stated above. This study focuses on Vietnam's food industry for critical reasons, as aforementioned in the introduction section. The object chosen for this research is SMEs, food manufacturers, food suppliers, and food retailers operating in the food industry from ten years above in the South of Vietnam.

The focus of this study is to examine the relationship between CG and FP in the context of food sector SMEs in emerging economy, Vietnam. In addition, this study aims at understanding in depth how SRE and ERE mediate the linkage between CG and FP. This forms the proposed model as the Fig. 1 above which includes 1 independent variable (corporate

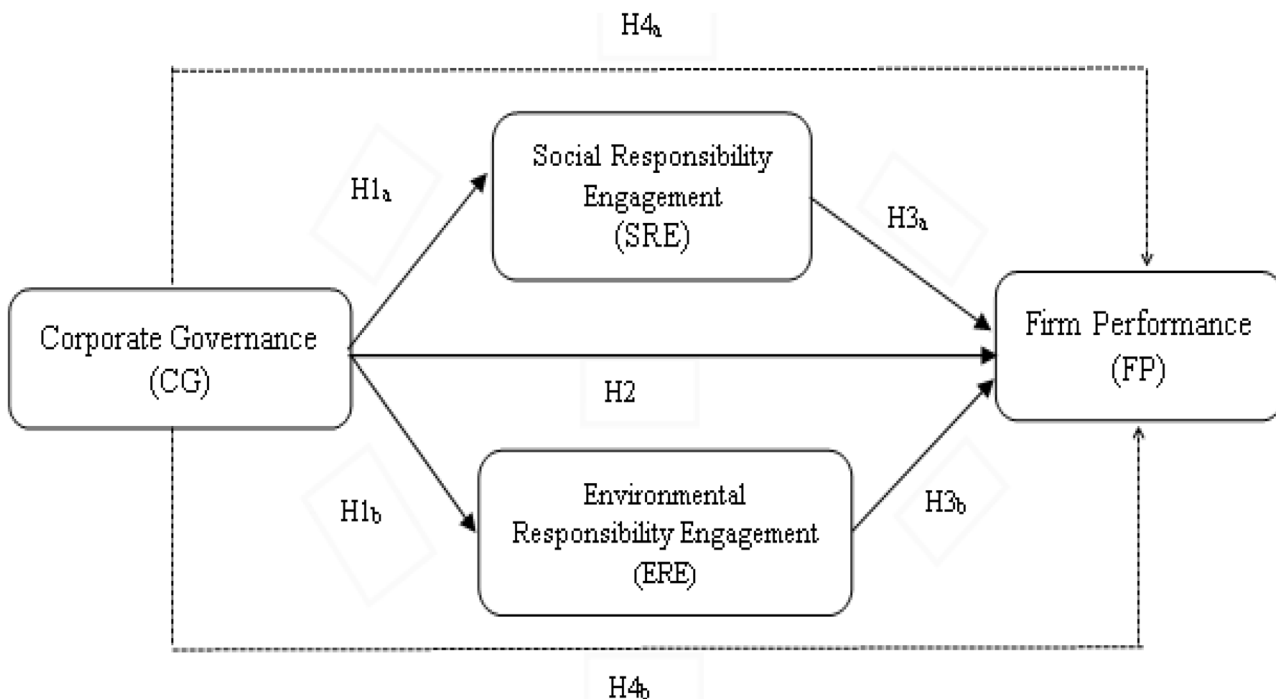


Fig. 1 Conceptual Model

governance), 1 dependent variable (firm performance), and 2 mediating variables (SRE and ERE). The scales of these four variables are presented in Table 3 below.

4.1 Methodology

This study followed a quantitative approach using the CB-SEM (Covariance-Based Structural Equation Model) technique. CB-SEM was chosen to be used in this study for the following arguments. First, in terms of sample size, in this study, the sample size was computed in accordance to the principle of “10-times rule” (Hair et al. 2011) and plus as a precaution against non-response bias. This resulted in computing the initial sample size up to 510 which is considered a large sample size. After the survey ended, the number of valid samples obtained was 475 which was also considered a large sample size, therefore CB-SEM was chosen as an appropriate method for this situation. According to Jannoo et al. (2014), the CB-SEM estimate is more accurate than the PLS-SEM estimate for a sample size of 50 and above.

Second, CB-SEM has advantages over PLS-SEM. Specifically, CB-SEM can separate the measurement error from the manifest variable to ensure the most accurate factor loading estimate possible (McDonald 1996). Another advantage of CB-SEM is its ability to well identify the multicollinearity problem thanks to the tool of modification index assigned to this application (McIntosh et al. 2014). With this approach, CB-SEM can assist the researcher to detect which items have the potential to adversely affect the construct meaning, while this benefit can't be found in the case of PLS-SEM. In addition, the construct reliability may be more reliable for CB-SEM than for PLS-SEM because of the possibility of bias of factor loading values in PLS-SEM (Afthanorhan et al. 2020). Further, the estimates of average variance extract with CB-SEM are more accurate than those with PLS-SEM in different sample and model, suggesting that the effect of CB-SEM is not only subtle in terms of construct reliability. Besides, according to Reinartz et al. (2009), the estimation technique of CB-SEM is preferred over PLS-SEM for parameter accuracy thanks to the use of the consistent estimator in CB-SEM which helps to render consistent attributes in different situations. The primary data was collected from a questionnaire-based survey.

4.2 Sample size and procedure

The initial sample size is 510 samples that were collected by the random method. The research was conducted from January to April 2021. The survey participants were firms' executives who have insights into strategic management, CSR, and overall operations.

The questionnaire was composed of three sections that include (1) Sect. 1 is respondent information; (2) Sect. 2 is open-ended questions for respondents' perspectives about the current situation of social responsibility and environmental responsibility of businesses that participate in the value chain of the food industry in Vietnam; (3) Sect. 3 is close-ended questions that aim to collect data for statistical analysis. The close-ended questionnaire adopted the five-point-scaled Likert that ranges from 1 (strongly disagree) to 5 (strongly agree). Particularly, there is one thing that needs to be emphasized is that for the questions related to “CEO duality” and “CEO compensation,” that responses to those questions are necessarily either 1 (equivalently “Strongly disagree/No”) or 5 (equivalently to “Strongly agree/Yes”), not 2, 3 or 4. This is clearly explained in the questionnaire to the respondents. Fifteen experts validated the questionnaire in CSR, corporate governance – CG, and strategic management to ensure that the questionnaire content is clear for the survey. In addition, there were 45 companies employed for the pilot testing to ensure the consistency of the questionnaire. The questionnaire was then reassessed based on comments and suggestions given by experts and respondents.

The survey was then officially getting started by delivering questionnaires to the targeted respondents. There are two ways of distributing questionnaires that are either direct or indirect, depending on how respondents to be convenient. There were 495 questionnaires back that represented a 97% response rate. After scanning against the established criteria, 475 qualified ones left that accounted for a 93% response rate. The final collected data was then used for statistical analysis using CB-SEM.

Table 4 Descriptive statistics of samples

Indexes	“n” = 475	Percentage (%)
Gender		
Male	215	45.26
Female	260	54.74
Age (years)		
41—46	259	33.47
47—52	215	45.26
From 53 above	101	21.27
Education		
Bachelor	183	38.53
Master	218	45.89
Above	74	15.58
Working years		
3—6	89	18.74
7—11	198	41.68
From 12 above	188	39.58
Size		
50—100 employees	95	20.00
101—150 employees	245	51.58
151—200 employees	135	28.42

Table 5 Cronbach's alpha coefficients & average variance extract values

Variables	Cronbach's Alpha	Average Variance Extract (AVE)
Corporate governance (CG)	0.837	0.508
Social responsibility engagement (SRE)	0.836	0.562
Environmental responsibility engagement (ERE)	0.874	0.583
Firm performance (FP)	0.885	0.606

4.3 Constructs

Table 3 below presents the constructs of the proposed conceptual model developed based on a careful review of the relevant literature.

5 Assessment of measurement and structural model

5.1 Descriptive statistics

Table 4 illustrates the characteristics of the final samples that are considered for analysis. It indicates that male gender accounted for 45.26%, female gender accounted for 54.74%; age ranges from 41—46 accounted for 33.47%, 47—52 accounted for 45.26%, and the remaining 21.27% occupied by the age range from 53 years above. Among the valid samples collected, none are under the age of 41. Regarding education background, the group of bachelor accounted for 38.53%, while master group accounted for 45.89% and lastly above master 15.58%. The statistical result showed that there were no sample has a degree lower than a bachelor's degree. Regarding years of working for the company, range from 3—6 years accounted for 18.74%, 7—11 years occupied 41.68% and above 12 years accounted for 39.58%. Of the number of valid samples collected, there were no one with less than 3 years of work. Regarding company size considered based on the permanent number of employees, the statistical result

indicated that size from 50—100 employees accounted for 20%, while 101—150 employees accounted for over half (51.58%) and 151—200 employees accounted for 28.42%. There were none of the samples obtained has fewer than 50 employees and more than 200 employees. According to IFC (International Finance Corporation) (2009), which defined that for a company with a permanent number of employees less than 250 people, it is defined as a small and medium-sized enterprise (SME). Overall, sample characteristics such as these descriptive statistics are considered satisfactorily representative for the population of this research context.

5.2 Assessing the reliability of the scales

The reliability statistics show that all the correlation item-total correlations are more significant than 0.3, and Cronbach's Alpha coefficients are greater than 0.7. Therefore, the proposed scales are reliable; thus, it is preserved as proposed (Hair et al. 2016). Table 5 below presents (Hair et al. 2016).

Results show that the composite reliability (CR) values and AVE values are higher than 0.7 and 0.5 sequentially; thus, all the scales ensure convergence, according to Hair et al. (2009). Those values are presented in Table 5 above; those are satisfied against the acceptance thresholds.

5.3 Discriminant validity

The square root of AVE (bold numbers) is greater than the correlations between latent variables (the values showed below the bold diagonal), and the AVE values are greater than MSV values; thus, discriminant validity is confirmed (Fornell and Larcker 1981). Table 6 below presents these values that supported the stated conclusion.

5.4 Evaluation of structural model

The statistical results show that all the model-fit indices are good against the acceptance thresholds. Table 7 below summarizes the model-fit indices and results; therefore, it can be concluded that this model is consistent with the data (Hu and Bentler 1999).

Table 6 Discriminant Validity

	AVE	MSV	FP	ERE	CG	SRE
FP	0.606	0.355	0.778			
ERE	0.583	0.498	0.596***	0.763		
CG	0.508	0.498	0.576***	0.706***	0.713	
SRE	0.562	0.398	0.483***	0.427***	0.631***	0.749

(***: 0.000)

SRE Social responsibility engagement, FP Firm performance, ERE Environmental responsibility engagement, AVE Average variance extract, CG Corporate governance, MSV Maximum shared squared variance

Table 7 Model-Fit-Analysis

Indices	Description	Accepted threshold	Values	Concluded
RMSEA	“Root mean square error of approximation.”	“ $0.08 \leq \text{Value} \leq 0.10$ (mediocre fit); $\text{Value} < 0.8$ (good fit)” (MacCallum et al. 1996); “ $\text{Value} \leq 0.05$ (close fit)” (Hair et al. 2010)	0.013	Good fit
PCLOSE	p of close fit	$\text{Value} > 0.05$ (Hu and Bentler 1999)	1.000	Good fit
CFI	Comparative Fit Index	$\text{Value} > 0.90$ (Hu and Bentler 1999)	0.997	Good fit
GFI	Goodness-of-fit statistics	$\text{Value} > 0.90$ (Miles and Shevlin 1998)	0.967	Good fit
CMIN / DF	Chi-square / df	“ $\text{Value} < 3$ (good); $\text{Value} < 5$ (acceptable)” (Hair et al. 2010)	1.076	Good fit
TLI	Tucker Lewis Index	“ $\text{Value} > 0.9$ ” (Hair et al. 2010)	0.994	Good fit

In addition, R-square (R^2) values were analyzed to assess the structural model. The results show that R^2 values are greater than 0.1; thus, the proposed model is good and fit (Falk and Miller's 1992). Table 8 below presents the R^2 values that supported the stated conclusion.

Furthermore, all the standardized regression weights appeared higher than 0.5. Thus, all observed variables are significant in confirmatory factor analysis (CFA) (Hair et al. 2009). Table 9 below shows these values that are accepted against the acceptance thresholds and Fig. 2 below is the CFA results.

Further, all variables are proved to be significant in the model (p -values < 0.05). Table 10 below presents the relevant values and Fig. 3 below is the path diagram of the research model.

5.5 Bootstrapping results

5.5.1 Impact analysis

Table 11 below presents the standardized regression weights and p -values which indicates that CG has a direct and positive relationship with SRE ($+0.628$; $p < 0.05$) and ERE ($+0.703$; $p < 0.05$). Likewise, SRE and ERE have a positive and significant relationship with FP, respectively ($+0.208$; $p < 0.05$) and ($+0.385$; $p < 0.05$). In addition, result shows that corporate governance positively and significantly affects FP ($+0.172$; $p < 0.05$). In relation to the mediation effect of CRE and ERE on the linkage between CG and FP, result indicates that SRE and ERE mediate the association of CG and FP, respectively ($+0.131$; $p < 0.05$) and ($+0.271$;

$p < 0.05$). In overall, the impact of CG on ERE is stronger than that of CG on SRE. Likewise, the impact of ERE on FP is stronger than that of CRE on FP. This result shows that CG plays an important role in the strategic resources of the enterprise that have a stronger impact on corporate engagement in environmental responsibility, consequently, make a stronger impact on FP.

5.5.2 Bootstrap test

The bootstrap test was carried out with a 1000 sample loop. According to Efron and Tibshirani (1993), bootstrapping specifies precision measurements (bias, variances, confidence intervals, predictive errors, etc.) for sample estimates. Comparing the absolute value of C.R (Critical Ratios) with 1.96 (1.96 is the value of the normal distribution at 0.9750, meaning that 2.5% one-sided, two-sided would be 5%. Result indicates that the absolute value of C.R (Critical Ratios) in all relationships is less than 1.96, so the bias is zero, statistically significant at 95% confidence level, the model has high reliability estimation. Table 12 below presents the bootstrapping result.

Table 8 R Square values

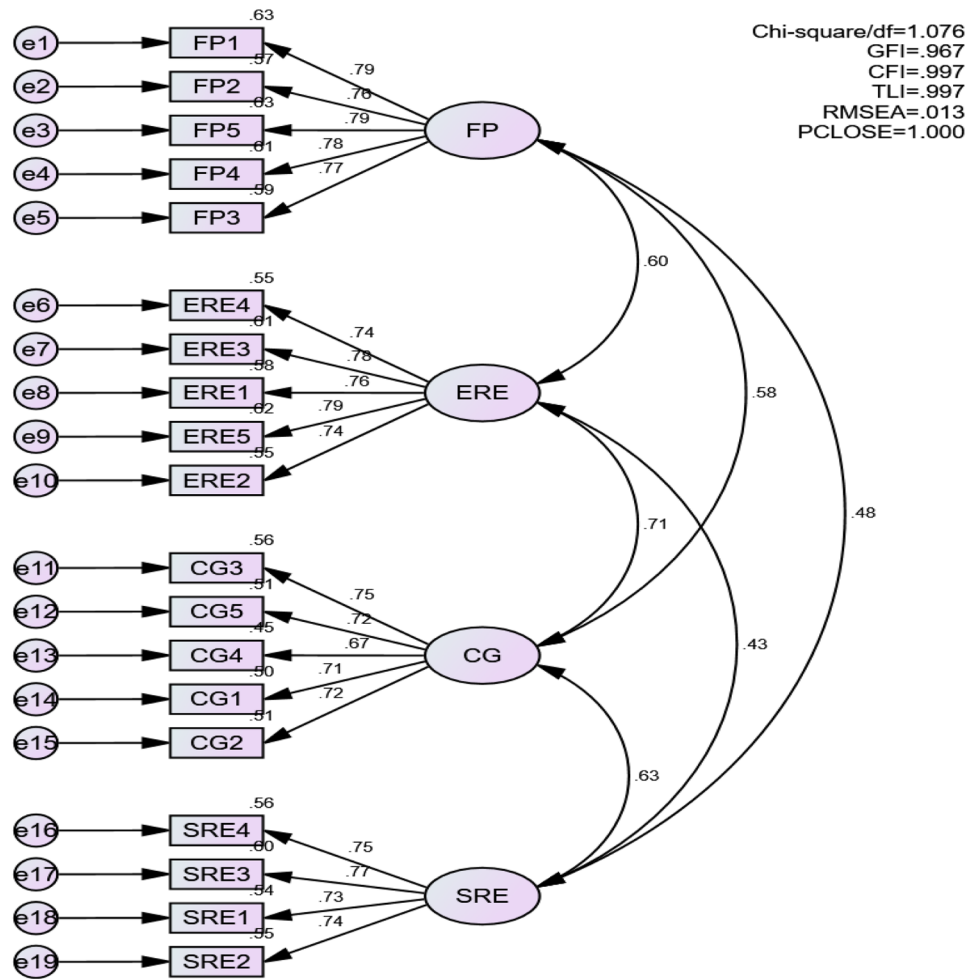
Variables	R^2
Social responsibility engagement (SRE)	0.394
Environmental responsibility engagement (ERE)	0.494
Firm performance (FP)	0.431

Table 9 Standardized regression weights

FP1 ← FP	0.791	ERE1 ← ERE	0.764	CG2 ← CG	0.716
FP2 ← FP	0.756	ERE5 ← ERE	0.786	SRE4 ← SRE	0.745
FP5 ← FP	0.794	ERE2 ← ERE	0.740	SRE3 ← SRE	0.773
FP4 ← FP	0.784	CG3 ← CG	0.750	SRE1 ← SRE	0.733
FP3 ← FP	0.766	CG5 ← CG	0.718	SRE2 ← SRE	0.745
ERE4 ← ERE	0.743	CG4 ← CG	0.671		
ERE3 ← ERE	0.783	CG1 ← CG	0.708		

SRE Social responsibility engagement, FP Firm performance, ERE Environmental responsibility engagement, CG Corporate governance

Fig. 2 Confirmatory factor analysis (CFA)



6 Discussion

Before discussing the results to conclude the research hypotheses, the authors evaluate the degree of influence between variables in the model through assessing the results shown in Tables 9 and 10 above. The results shown in Table 10 above show that the weight of CG on the variables that it affects has a significant difference. Specifically, the weight of CG on ERE appeared the highest (+0.625), followed by SRE (+0.576), and finally FP (+0.162). Similarly, there

is a significant difference between the weight of the ERE on FP (+0.406) and the weight of the SRE on FP (0.213). Next, consider the weight of each observed variable to the corresponding latent variable that it measures through the evaluation of the results presented in Table 9 above. It shows that all observed variables are significant in the CFA and are weighted at a relatively small difference. For FP, the results show that the weight of FP5 is highest (+0.794), respectively followed by FP1 (+0.791), FP4 (+0.784), FP3 (+0.766), and finally FP2 (+0.756). For ERE, the results show that the weight of ERE5 is highest (+0.786), respectively followed by ERE3 (+0.783), ERE1 (+0.764), ERE4 (+0.743), and finally ERE2 (+0.740). For CG, the results show that the weight of CG3 is highest (+0.750), followed by CG5 (+0.718), CG2 (+0.716), CG1 (+0.708), and finally CG4 (+0.671). For SRE, the results show that the weight of SRE3 is highest (+0.773), followed by SRE2 (+0.745) and SRE4 (+0.745), SRE1 (+0.733). In general, the weights of the observed variables on the latent variables are quite similar.

Results show that the path between CG and SRE is positive and significant (+0.628; $p < 0.05$). Therefore, hypothesis 1_a (H1_a) is supported that CG has a positive direct

Table 10 Regression weights

	Estimates	S.E	C.R	P-values
SRE ← CG	0.576	0.054	10.676	0.000
ERE ← CG	0.625	0.052	11.923	0.000
FP ← SRE	0.213	0.063	3.373	0.000
FP ← ERE	0.406	0.074	5.479	0.000
FP ← CG	0.162	0.078	2.068	0.039

SRE Social responsibility engagement, FP Firm performance, ERE Environmental responsibility engagement, CG Corporate governance

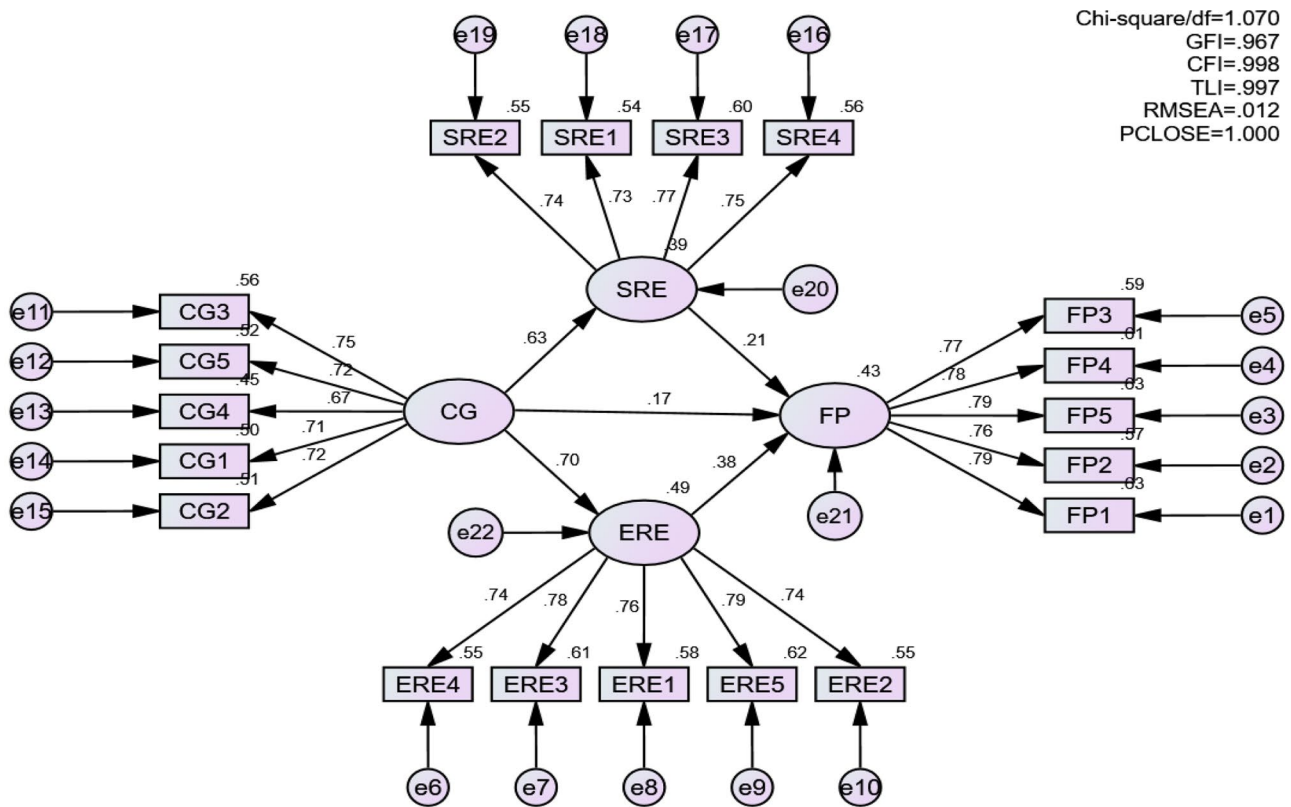


Fig. 3 Path Diagram of Research Model

relationship with SRE. Furthermore, this relationship is found significant. This finding supported the previous studies of Manning (2015) and Jain and Jamali (2016). From the stakeholders' perspectives, the CG mechanism orients firms towards social interests with respect to the right of humans in internal community and external community (Melo and Garrido-Morgado 2012). In return, this leads to increased firm's awareness as socially responsible corporate (Surroca et al. 2010) that will benefit the firm in ways of strengthening relationships with its stakeholders that will gain valuable support from stakeholders in various ways.

Table 11 Standardized regression weights & p-values

	Estimates	p-value
SRE ← CG	0.628	0.000
ERE ← CG	0.703	0.000
FP ← SRE	0.208	0.000
FP ← ERE	0.385	0.000
FP ← CG	0.172	0.039
CG → SRE → FP	0.131	0.002
CG → ERE → FP	0.271	0.001

SRE Social responsibility engagement, FP Firm performance, ERE Environmental responsibility engagement, CG Corporate governance

Similarly, the path between CG and ERE is positive and significant (+0.703; $p < 0.05$). Thus, hypothesis 1_b (H1_b) is supported that CG has a positive direct relationship with ERE. This relationship is found significant. In addition, results indicate that the impact of CG on ERE is stronger than that on SRE (+0.703 vs. +0.628). This finding supported that of previous studies of Manning (2015); Jain and Jamali (2016), and (Melo and Garrido-Morgado 2012) in the sense that the CG mechanism directs firms towards environmental interests by promoting innovation and improvement towards sustainability, also, invest in an environmental management system, from the stakeholders' point of view. As a result, a firm's awareness will be increasingly improved as environmentally responsible (Surroca et al. 2010), benefiting the firm in various ways from enhanced attachment by stakeholders.

Results supported hypothesis 2 (H2) that CG has a positive direct relationship with FP (+0.172; $p < 0.05$). This relationship is significant. This finding supported the previous studies of Arora and Sharma (2016); Black et al. (2006) but contradicted Diriba and Basumatary (2019) as they argued that CG does not have any impact on FP and Zabri et al. (2016). They stated that better CG does not necessarily lead to enhanced FP. This heterogeneity of findings can be explained by the contextual factors. Besides, approaches

Table 12 Results of bootstrapping

Parameter	SE	SE-SE	Mean	Bias	SE-Bias	C.R
SRE ← CG	0.037	0.001	0.628	0.000	0.001	0
ERE ← CG	0.035	0.001	0.702	-0.001	0.001	-1
FP ← SRE	0.061	0.001	0.210	0.002	0.002	1
FP ← ERE	0.067	0.002	0.382	-0.003	0.002	-1.5
FP ← CG	0.080	0.002	0.171	-0.002	0.003	-0.66667

SRE Social responsibility engagement, *FP* Firm performance, *ERE* Environmental responsibility engagement, *CG* Corporate governance

and approach perspectives can also contribute to the heterogeneity of the findings of previous studies. Considering the results of this study, it indicates that in the current context of Vietnam, for SMEs in the food industry, the CG mechanism is important to FP. This happens in the sense that board characteristics add values by having firm equipped with “knowledge, values, relationships that lead to a sustainable corporate culture” Gangi et al. (2020) and Intezari et al. (2017), from the RBV perspectives, those lead to improved corporate social performance and enhanced FP (Gangi et al. 2019a).

The path between SRE and FP is positive and significant (+0.208; $p < 0.05$). Therefore, hypothesis 3_a (H3_a) is supported that SRE directly positively and significantly affects FP. This finding supported the previous studies of Martinez-Conesa et al. (2017) in the sense that corporate SRE stimulates firm to promote sustainability innovation (Scuotto et al. 2020), from the knowledge management perspectives (Tang et al. 2012), that leads to improved products’ quality, products’ eco-friendly safety (Gangi et al. 2020) that will result in favoring firm for enhanced customers’ satisfaction, gained premium prices advantage those are of important drivers of FP. In addition, SRE contributes to minimizing the potential risk of additional cost due to lack of social responsibility and contributes to generating a sustainable competitive advantage that will improve FP (Gangi et al. 2020).

The analytical results support the relationship between ERE and FP. Therefore, hypothesis 3_b (H3_b) is confirmed that ERE directly positively and significantly affects FP (+0.385; $p < 0.05$). From the natural RBV perspectives (Barney 1991), this finding reinforces the previous study of Scuotto et al. (2020) that ERE facilitates the firm to achieve superior results by adopting sustainability innovation and improving innovation capacity. Such innovations are significant in limiting the natural constraints and creating a sustainable competitive advantage for the firm. In addition, this result supports the finding of Dhiaf et al. (2021) that initiatives to reduce harmful effects of business operations on the environment have a positive effect on business performance, especially in the context of Covid-19. At the same time, it enables the firm to achieve “premium price” by customers (Kim 2017) and “increased efficiency” (Melo

and Garrido-Morgado 2012), minimizes potential financial risk, and enhances competitive advantage in a sustainable direction. Overall, those will result in enhancing FP (Gangi et al. 2020).

Finally, the indirect relationship between CG and FP is demonstrated by the mediating role of SRE (+0.131; $p < 0.05$) and ERE (+0.271; $p < 0.05$). Therefore, hypothesis 4_a and 4_b are supported that SRE and ERE mediate the relationship between CG and FP. From the stakeholders’ perspective (Freeman 1984); RBV and natural RBV (Barney 1991), and knowledge management perspectives (Tang et al. 2012), a better CG mechanism is a center of organization that orients firm towards SRE and ERE that facilitates the accumulation of knowledge and experiences to continuously improving processes and sustainably innovate (Scuotto et al. 2020). As a result, this increases stakeholders’ awareness of corporate socially and environmentally responsible behaviors, enhances products’ quality and safety (Gangi et al. 2020), practical contributions to environmental protection by reducing emissions and pollutants emitted, etc. In return, this enhances customers’ satisfaction, enjoys price premium, and minimizes additional cost potential that leads to improved FP in various ways, according to Martinez-Conesa et al. (2017).

This study is among the very few to date in the existing literature that examines the effect of CG on FP with the mediating role of SRE and ERE. In overall, the findings of this study support the previous studies of Gangi et al. (2021) those found that CG has a positive relationship with corporate social and environmental responsibility engagement that ultimately leads to improved FP; Shaji and Shajahan (2020) and Hussain et al. (2019) those contended that CG positively and significantly affects FP. Besides, the results of this study contrast with the findings of Assankutty (2019) that CG negatively and significantly affects FP; Diriba and Basumatary (2019) that CG has no effect on FP. Moreover, the findings of this study differ from previous studies of Bawaneh (2020) that CG component individually has a different level of impact on FP, positive and negative and mixed effects; Yihun et al. (2019) that CG mechanisms are found to affect FP differently depending on the individual component, whereby board size has a significant negative effect on

FP; on the contrary, board diversity and board experience have a significant positive effect on FP; Shao (2019) that the relationship between CG structures and FP is found to be different, some are positive, some are negative, and some have no effect.

Based on the findings as discussed above, this study provides theoretical implications and managerial implications as follows.

6.1 Theoretical implications

This study contributes to expanding the existing literature on the association of CG and FP in various ways. Firstly, this study contributes to the richness of the existing literature on CG and FP and contributes to addressing the scarcity due to the lack of empirical research on this area for the food industry in emerging economies. Secondly, this study provides further empirical evidence on the vital role of CG in enhancing corporate competitive advantage and improving performance that previous studies have validated in different research contexts as stated. Thirdly, this study provides a further complex integrated model in which SRE and ERE are separately added to mediate the relationship between CG and FP, which has not been explored in depth by previous studies, especially for the context of an emerging economy like Vietnam. This provides an expanded view of CG's potential to improve FP sustainably, reinforcing CG's important role in improving corporate sustainability performance. Fourthly, this study contributes to completing the multidimensional measures of SRE and ERE on a separate basis. This represents the necessary clarity in the current context when businesses are suffering from many challenges related to their continuity ability, thus, the primary concern is what and how to continue their businesses. In this context, it is critical to clarify a clear path from the effort to concrete results to motivate the business to bounce back and keep going.

This study provides some contributions to the theoretical aspects. Accordingly, this study notably supports the stakeholder theory and RBV theory by affirming that through SRE and ERE, businesses fulfill their responsibilities to stakeholders, society, and the environment, thereby enhancing competitive advantage and improving operating results a healthy direction. In addition, CG, SRE, and ERE are determined as corporate resources to generate competitive advantage and performance improvement in a sustainable manner. This study demonstrates the value of CG mechanism for the manner in which an enterprise identifies its responsible activities towards society and the environment. In the field of operations management, this study provides an understanding of how CG can improve FP through SRE and ERE by proposing an integrated model that derived from the combination of four variables including CG, SRE, ERE, FP.

Moreover, it provides an understanding of the phenomenon of SRE and ERE transforming CG efforts into corporate values achieved through enhancing its engagement in social and environmental responsibilities. In the context of the Covid-19 epidemic and climate change, various stakeholders of the business are more interested in how the business is governed to get through this crisis and towards sustainable development in the future. Therefore, in the field of operations management, this study provides an impetus for businesses to act boldly to achieve an effective governance mechanism as suggested for efficient operations management in the new context, towards a new value chain on the basis of balancing social, environmental and economic values.

6.2 Managerial implications

This study provides some important managerial contributions that may be of great interest to business practitioners, entrepreneurs, executives, and managers for better governance, competitiveness, and efficiency. The first contribution is the insight into an effective CG mechanism for SMEs in the food industry in the current economic settings in Vietnam. The results suggest that a smaller board size provides more advantages than a larger board size in saving operational costs associated with the coordination process of board's members to reach consensus (Diriba and Basumatary 2019; Naushad and Malik 2015) and facilitates faster decision making that may help capture opportunities beyond competitors (Lorsch and MacIver 1989), results in generating higher profitability (Mak and Kusnadi 2005; Yermack 1996). Interestingly, the finding suggests that for the current context of food sector SMEs, the appropriate size of the board of directors is no more than seven directors. Therefore, it implies that the board size should be less than seven people to be more efficient (Jensen 1993). With regards to "board independence", the results imply that the higher the degree of independence, the better the impact on FP because "independent directors" can help mitigate "agency problems", simultaneously facilitate "manager's compliance with stakeholder responsibilities", according to Jain and Jamali (2016). In relation to the "board diversity", the results imply that the higher the ratio of female directors on the board, the engagement on social and environmental responsibility would be more favorable because female directors tend to bring more ethical stances into running the organization (Gangi et al. 2020). Regarding "CEO duality", the results imply that while the CEO concurrently holds the chairmanship, it will limit the social and environmental responsibility engagement (Gangi et al. 2019a, b). Further, concerning "CEO compensation," the finding implies that when CEO remuneration is linked with shareholder's returns, it may prevent the CEO from "opportunistic behaviors", which will result in increasing social and environmental responsibility engagement. Importantly, as the

board of directors, it is necessary to consider a compensation package for the CEO that includes financial benefits and non-financial incentives. This notion supports the stewardship theory point of view (Muth and Donaldson 1998).

The second contribution of this study in terms of managerial implication is the assertion that CG influences the extent to which firms engage in socially and environmentally responsible activities. In return, besides the social and environmental values created, this also brings values to improve FP through indicators such as ROE, EBITDA, ROA, market share growth, and sales growth rate. From the operational management perspective, this study implies that enterprises need to focus on strengthening their engagement in social and environmental responsibilities through increasing in using eco-friendly materials and packaging; installing environmental management system to reduce pollutants emitted; improving processes continuously to reduce consumption of inputs such as materials, water; applying actively optimal electrical equipment to reduce consumption of energy in order to reduce emissions; innovating sustainably to enhance efficiency and productivity; non-discrimination in the work environment; developing employees' competencies; absolutely no harmful substances are used in the product; improving products' quality continuously.

The third contribution is the provision of insight into how CG improves FP towards sustainability. Results imply that when a firm possesses a suitable CG mechanism, engagement in environmental and social will be more favorable. Whereby directors truly play a significant role in CG system that strategically proactively equip firm with knowledge, expertise, and experiences that are accumulated and shared by proper management processes, together with "relationships and values that lead to maintainable corporate culture" (Gangi et al. 2020; Intezari et al. 2017) and reduce the conflict potential between stakeholders (Fang et al. 2013). This will result in promoting improvement and innovation that associated with improved quality management system to meet the expectations of stakeholders (Parast 2021; Hall and Johnson-Hall 2021), enhanced customer satisfaction, achieved premium price, reduced negative impact on the environment, minimized the burden to society. Those are critical for enhancing stakeholders' awareness of the firm as social-environmental responsible, increasing stakeholders' attachment, and improving firm performance in a sustainable direction (Manning et al. 2006). This suggests that corporate executives should consider integrating the strategy of economic and social responsibility into the long-term business development strategy. Through that, businesses engage in social and environmental responsibilities as their primary obligations that they have to perform in parallel with their operations. In turn, this leads to addressing the interests of various stakeholders on the basis of balancing economic, social and environmental values.

The fourth managerial implication is for the government, especially for policymakers with the implication that the business world is very important to the national economy. Therefore, the success or failure of an enterprise has an impact on the health of the national economy in general. In addition, the issue of climate change and its consequences forces relevant organizations around the world to take tougher action through the form of regulations and agreements on climate change (Guiot and Cramer 2016). Accordingly, it requires countries to commit and drastically practice following the roadmap to control climate change from now on. Therefore, from the perspective of state governance, policymakers are expected to react quickly and act promptly to help businesses transform appropriately in a timely manner in response to the unprecedented crisis caused by the Covid-19 epidemic (Qin et al. 2021). Moreover, policymakers should have strong policies in place to stimulate businesses on a large scale to strengthen their engagement to social and environmental responsibilities in their business operations. This will result in generating values not only for the benefit of enterprises but also for society, the environment and the nation as a whole. In the context of an emerging economy like Vietnam, most SMEs are governed under the family mechanism, so the economic benefits of enterprises are often prioritized over other interests. While engaging in social and environmental responsibilities may not bring immediate economic benefits to the businesses, therefore, they may not be bold enough to change because they are afraid that such change may affect their economic benefits for a certain period of time. Therefore, government policymakers should have strong and attractive policies for businesses to boldly change. Moreover, the policy should be specific to the industry to make the government's support more practical. The goal is to shift the corporate governance mindset of SMEs from economic focus to sustainable development on the basis of balancing economic, social and environmental values.

6.3 Limitations and future scope of the study

Besides the significant contributions as stated above, this research also has some limitations that provide opportunities for future research on CG and FP to enrich the extant literature. Firstly, this study prioritized its focus on food enterprises (SMEs), so respondents' responses in terms of CG structure and characteristics may differ depending on industry characteristics and environmental contexts. Therefore, future studies may consider larger-sized firms and different business sectors. Secondly, this study focuses on several regions of Vietnam; consequently, the results may show discrepancies in different economic contexts. Hence, future research should consider other regions. Thirdly, this study

applied the quantitative method. Thus, future studies may consider combined methods to diversify research methods in this domain.

7 Conclusion

The research outcomes of this paper proved that the CG mechanism has a direct and indirect impact on FP. These relationships are significant and positive as above discussions. In addition, SRE and ERE play a mediating role in the relationship between CG and FP. The novelty of this study is the important insights into how CG mechanism to be effective for food sector SMEs in emerging economy. In addition, how CG mechanism contributes to improving FP towards sustainability through engaging in social and environmental responsibilities reinforces the originality of this study. This study provides a highly practical contribution, especially for business operations management in the post-Covid-19 context. Because the present context refers to the possible future situation that it will be difficult for business executives to restart their businesses and focus only on efficiency and growth, neglecting necessary activities for sustainability as a practice of risk management (Barbieri et al. 2020).

Although this study focuses on the food industry in the context of SMEs in an emerging economy like Vietnam, but the theoretical and managerial contributions of this study are expected to be useful not only for the food industry in Vietnam but also for other sectors and in other emerging economies. First, the context of the Covid-19 epidemic and climate change is not a problem for just a single economy but a global problem. Accordingly, the business world globally must raise high commitment to social and environmental responsibility in their business operations, of which the Vietnamese business community is a part. Second, there is a similarity among economies that the proportion of SMEs in the national economy is high, averaging over 90% (Schaper 2020). Third, with pressure from primary stakeholders of the business and relevant organizations, not only businesses in the food industry but also other industries must change to adapt, to survive and develop in the new context, otherwise the rejection will be sooner or later. This discussion represents the generalizability of this study's results to other sectors and economies.

The contributions of this study may be of significant interest to academics, experts, business practitioners, and policymakers. Notably, it is critical for enterprises to improve operational efficiency by improving core competencies and the socio-economic development of the nation, region, and the world as a whole. Moreover, it significantly contributes to enabling the Paris Agreement on Climate Change that Vietnam is a member (Guiot and Cramer 2016). Accordingly, it requires serious efforts and practical solutions of

participating countries to reduce greenhouse gas emissions, prevent environmental pollution, and protect the environment in various ways. In order to achieve this, the country and region will need the joint efforts of the business force, specifically SMEs, as this is the force that makes up the vast majority that accounts for over 90% of all businesses in Southeast Asia (Schaper 2020). This affirms the backbone role of SMEs in the national and regional economy (Pratama 2019), and at the same time, being a powerful force in environmental protection.

Declarations

Conflict of Interest All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

References

- Abbas J (2020) Impact of total quality management on corporate green performance through the mediating role of corporate social responsibility. *J Clean Prod* 242:1–12. <https://doi.org/10.1016/j.jclepro.2019.118458>
- Afthanorhan A, Awang Z, Aimran N (2020) An extensive comparison of CB-SEM and PLS-SEM for reliability and validity. *International Journal of Data and Network Science* 4:357–364. <https://doi.org/10.5267/j.ijdns.2020.9.003>
- Akbar S, Poletti-Hughes J, El-Faitouri R, Shah SZA (2016) More on the relationship between corporate governance and firm performance in the UK: Evidence from the application of generalized method of moments estimation. *Res Int Bus Finance* 38:417–429
- Aljifri K, Moustafa M (2007) The Impact of Corporate Governance Mechanisms on the Performance of UAE Firms: An Empirical Analysis. *Journal of Economic and Administrative Sciences* 23:71–93
- Ansu-Mensah P, Marfo EO, Awuah LS (2021) Corporate social responsibility and stakeholder engagement in Ghana's mining sector: a case study of Newmont Ahafo mines. *Int J Corporate Soc Responsibility* 6:1–22. <https://doi.org/10.1186/s40991-020-00054-2>
- Arif M, Sajjad A, Farooq S, Abrar M, Joyo AS (2021) The impact of audit committee attributes on the quality and quantity of environmental, social and governance (ESG) disclosures. *Corp Gov* 21:497–514. <https://doi.org/10.1108/CG-06-2020-0243>
- Arora A, Sharma C (2016) Corporate governance and firm performance in developing counties: Evidence from India. *Corp Gov* 16:420–436
- Assankutty A, Fatima F, Kuntluru S (2019) Does corporate governance disclosure practice impact firm performance in india Sumedha. *J Manag* 8:1–14
- Barbieri P, Boffelli A, Elia S et al (2020) What can we learn about reshoring after Covid-19? *Oper Manag Res* 13:131–136. <https://doi.org/10.1007/s12063-020-00160-1>
- Barney J (1991) Firm resources and sustained competitive advantage. *J Manag* 17:99–120
- Bawaneh SS (2020) Impact of corporate governance on financial institutions? performance: A board composition case. *Asian*

- Economic and Financial Review 10:54–63. <https://doi.org/10.18488/journal.aefr.2020.101.54.63>
- Black BS, Jang H, Kim W (2006) Does corporate governance predict firms' market values? Evidence from Korea. *J Law Econ Organ* 22:366–413
- Bolourian S, Angus A, Alinaghian L (2021) The impact of corporate governance on corporate social responsibility at the board-level: A critical assessment. *J Clean Prod* 291:125752. <https://doi.org/10.1016/j.jclepro.2020.125752>
- Chahal H, Kumari A (2013) Examining talent management using cg as a proxy measure: A case study of State Bank of Corporate Governance India. *Corporate Governance: Int J Bus Soc* 13:198–207
- Chowdhury M, Sarkar A, Paul SK et al (2020) A case study on strategies to deal with the impacts of COVID-19 pandemic in the food and beverage industry. *Oper Manag Res* 2020:1–13. <https://doi.org/10.1007/s12063-020-00166-9>
- Ciftci I, Ekrem T, Geoffrey W, Mehmet D, Selim Z (2019) Corporate governance and firm performance in emerging markets: Evidence from Turkey. *Int Bus Rev* 28:90–103
- Coppola A, Ianuario S (2017) Environmental and social sustainability in Producer Organizations' strategies. *British Food Journal* 119:1732–1747. <https://doi.org/10.1108/BFJ-11-2016-0553>
- Dalton DR, Kesner IF (1987) Composition and CEO duality in boards of directors: An international perspective. *J Int Bus Stud* 18:33–42
- Dhiaf MM, Najaf K, Marashdeh H (2021) The role of project's initiatives focused on the reduction of environmental footprints during COVID-19: evidence from the United States firms. *Oper Manag Res* 2021:1–15. <https://doi.org/10.1007/s12063-021-00206-y>
- Diriba M, Basumatary D (2019) Impact of corporate governance on firm performance: Evidence from indian leading companies. *Parikalpana: KIIT Journal of Management* 15:127–140. <https://doi.org/10.23862/kiit-parikalpana/2019/v15/i1-2/190r78>
- Donaldson L, Davis JH (1991) Stewardship theory or agency theory: CEO governance and shareholder returns. *Aust J Manag* 16:49–64
- Efron B, Tibshirani R (1993) *An introduction to the bootstrap*. Chapman and Hall, New York
- Falk RF, Miller NB (1992) *A primer for soft modeling*. The University of Akron Press, Ohio
- Fang S-C, Yang C-W, Hsu W-Y (2013) Inter-organizational knowledge transfer: the perspective of knowledge governance. *J Knowl Manag* 17:943–957. <https://doi.org/10.1108/JKM-04-2013-0138>
- Fornell C, Larcker DF (1981) Evaluating structural equation models with unobservable variables and measurement error. *J Mark Res* (Pre-1986) 18:375–381
- Franceschelli MV, Santoro G, Giacosa E, Quaglia R (2019) Assessing the determinants of performance in the recycling business: evidence from the Italian context. *Corp Soc Responsib Environ Manag* 26:1086–1099
- Freeman RE (1984) *Strategic Management: A Stakeholder Approach*. Pitman, Boston
- Freeman RE, Phillips R, Sisodia R (2020) Tensions in stakeholder theory. *Bus Soc* 59:213–231. <https://doi.org/10.1177/0007650318773750>
- Friedman M (1970) A Friedman doctrine: the social responsibility of business is to increase its profits. *N Y times Mag* 13:32–33
- Gallego-Álvarez I, Prado-Lorenzo JM, García-Sánchez I (2011) Corporate social responsibility and innovation: a resource-based theory. *Manag Decis* 49:1709–1727. <https://doi.org/10.1108/00251741111183843>
- Gangi F, D'Angelo E, Daniele LM, Varrone N (2021) The impact of corporate governance on social and environmental engagement: what effect on firm performance in the food industry. *Br Food J* 123:610–626. <https://doi.org/10.1108/BFJ-02-2020-0140>
- Gangi F, Daniele LM, Varrone N (2020) How do corporate environmental policy and corporate reputation affect risk-adjusted financial performance? *Bus Strateg Environ* 29:1975–1991. <https://doi.org/10.1002/bse.2482>
- Gangi F, Meles A, D'Angelo E, Daniele LM (2019a) Sustainable development and corporate governance in the financial system: are environmentally friendly banks less risky? *Corp Soc Responsib Environ Manag* 26:529–547
- Gangi F, Mustilli M, Varrone N (2019b) The impact of corporate social responsibility (CSR) knowledge on corporate financial performance: evidence from the European banking industry. *J Knowl Manag* 23:110–134. <https://doi.org/10.1108/JKM-04-2018-0267>
- Ghoul SE, Guedhami O, Kim H, Park K (2018) Corporate environmental responsibility and the cost of capital: international Evidence. *J Bus Ethics* 149:335–361
- Guiot J, Cramer W (2016) Climate change: The 2015 Paris Agreement thresholds and Mediterranean basin ecosystems. *Science* 354:465–468
- Hair JF, Hult GTM, Ringle C, Sarstedt M (2016) *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage Publications
- Hair JF Jr, Black WC, Babin BJ, Anderson RE (2009) *Multivariate data analysis*, 7th edn. Pearson Prentice Hall, Upper Saddle River, NJ
- Hair JF, Black WC, Babin BJ, Anderson RE (2010) *Multivariate Data Analysis*, 7th edn. Prentice Hall, Upper Saddle River, New Jersey
- Hair JF, Ringle CM, Sarstedt M (2011) PLS-SEM: Indeed a Silver Bullet". *J Mark Theory Pract* 19:139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hall DC, Johnson-Hall TD (2021) The value of downstream traceability in food safety management systems: an empirical examination of product recalls. *Oper Manag Res* 14:61–77. <https://doi.org/10.1007/s12063-021-00184-1>
- Ho VH (2020) Disclosure Overload? Lessons for Risk Disclosure & ESG Reform from the Regulation SK Concept Release. *Vill I Rev* 65:67
- Hove-Sibanda P, Sibanda K, Pooe D (2017) The impact of corporate governance on firm competitiveness and performance of small and medium enterprises in South Africa: A case of small and medium enterprises in Vanderbijlpark. *Acta Commercii* 17:1–11. <https://doi.org/10.4102/ac.v17i1.446>
- Hu LT, Bentler PM (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct Equ Modeling* 6:1–55
- Huo B, Wang K, Zhang Y (2021) The impact of leadership on supply chain green strategy alignment and operational performance. *Oper Manag Res* 14:152–165. <https://doi.org/10.1007/s12063-020-00175-8>
- Hurst B, Ihlen Ø (2018) Corporate Social Responsibility and Engagement. *The Handbook of Communication Engagement* 133–147. <https://doi.org/10.1002/9781119167600.ch10>
- Hussain S, Ahmad T, Hassan S (2019) Corporate Governance and Firm Performance using GMM. *International Journal of Information, Business and Management* 11:300–316
- IFC (International Finance Corporation) (2009) *The SME Banking Knowledge Guide*. The World Bank Group, Washington DC
- Intezari A, Taskin N, Pauleen DJ (2017) Looking beyond knowledge sharing: an integrative approach to knowledge management culture. *J Knowl Manag* 21:492–515
- Jackling B, Johl S (2009) Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: International Review* 17:492–509
- Jain T, Jamali D (2016) Looking inside the black box: the effect of corporate governance on corporate social responsibility. *Corporate Governance: an International Review* 24:253–273
- Jannoo Z, Yap B, Auchoybur N, Lazim M (2014) The Effect of Non-normality on CB-SEM and PLS-SEM Path Estimates '. *World Academy of Science, Engineering and Technology, Open*

- Science Index 86. *Int J Math Comput Sci* 8:285–291. <https://doi.org/10.5281/zenodo.1090631>
- Jensen M, Meckling W (1976) Theory of the firm: management behavior, agency costs and capital structure. *J Financ Econ* 3:305–360
- Jensen MC (1993) The modern industrial revolution, exit, and the failure of internal control systems. *J Financ* 48:831–880
- Jo H, Harjoto MA (2012) The causal effect of corporate governance on corporate social responsibility. *J Bus Ethics* 106:53–72
- Kim Y (2017) Consumer responses to the food industry's proactive and passive environmental CSR, factoring in price as CSR tradeoff. *J Bus Ethics* 140:307–321
- Koji K, Adhikary BK, Tram L (2020) Corporate Governance and Firm Performance: A Comparative Analysis between Listed Family and Non-Family Firms in Japan. *Journal of Risk and Financial Management* 13:215. <https://doi.org/10.3390/jrfm13090215>
- Laguir I, Stekelorum R, Laguir L, Staglianò R (2021) Managing corporate social responsibility in the bank sector: A fuzzy and disaggregated approach. *Corp Soc Responsib Environ Manag* 28:1324–1334. <https://doi.org/10.1002/csr.2142>
- León-Bravo V, Caniato F, Caridi M (2019) Sustainability in multiple stages of the food supply chain in Italy: practices, performance and reputation. *Oper Manag Res* 12:40–61. <https://doi.org/10.1007/s12063-018-0136-9>
- Lorsch J, MacIver E (1989) *Pawns or Potentates: The Reality of America's Corporate Boards*. Boston
- Lu J, Javeed SA, Latief R, Jiang T, Ong TS (2021) The Moderating Role of Corporate Social Responsibility in the Association of Internal Corporate Governance and Profitability; Evidence from Pakistan. *Int J Environ Res Public Health* 18:5830. <https://doi.org/10.3390/ijerph18115830>
- MacCallum RC, Browne MW, Sugawara HM (1996) Power analysis and determination of sample size for covariance structure modeling. *Psychol Methods* 1:130–149
- Mak Y, Kusnadi Y (2005) Size really matters: Further evidence on the negative relationship between board size and firm value. *Pacific-Basin Finance Journal* 13:301–318
- Manning L (2015) Determining value in the food supply chain. *British Food Journal* 117:2649–2663. <https://doi.org/10.1108/BFJ-02-2015-0049>
- Manning L, Baines RN, Chadd SA (2006) Food safety management in broiler meat production. *Br Food J* 108:605–621. <https://doi.org/10.1108/00070700610681987>
- Martinez-Conesa I, Soto-Acosta P, Palacios-Manzano M (2017) Corporate social responsibility and its effect on innovation and firm performance: an empirical research in SMEs. *J Clean Prod* 142:2374–2383
- McDonald RP (1996) Path analysis with composite variables. *Multivar Behav Res* 31:239–270
- McIntosh CN, Edwards JR, Antonakis J (2014) Reflections on partial least squares path modeling. *Organ Res Methods* 17:210–251
- Melo T, Garrido-Morgado A (2012) Corporate reputation: a combination of social responsibility and industry. *Corp Soc Responsib Environ Manag* 19:11–31
- Michelon G, Boesso G, Kumar K (2013) Examining the link between strategic corporate social responsibility and company performance: an analysis of the best corporate citizens. *Corp Soc Responsib Environ Manag* 20:81–94
- Miles J, Shevlin M (1998) Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personality Individ Differ* 25:85–90
- Mishra R, Kapil S (2017) Effect of ownership structure and board structure on firm value: Evidence from India. *Corporate Governance: the International Journal of Business in Society* 17:700–726
- Muth M, Donaldson L (1998) Stewardship theory and board structure: A contingency approach. *Corporate Governance: an International Review* 6:5–28
- Naciti V (2019) Corporate governance and board of directors: the effect of a board composition on firm sustainability performance. *J Clean Prod* 237:117727. <https://doi.org/10.1016/j.jclepro.2019.117727>
- Naushad M, Malik SA (2015) Corporate governance and bank performance: A study of selected banks in GCC Region. *Asian Soc Sci* 11:226–234
- Nguyen NTT, Nguyen NP, Hoai TT (2021) Ethical leadership, corporate social responsibility, firm reputation, and firm performance: A serial mediation model. *Heliyon* 7:2405–8440. <https://doi.org/10.1016/j.heliyon.2021.e06809>
- Nguyen PA, Uong TAT, Nguyen QD (2020) How Small- and Medium-Sized Enterprise Innovation Affects Credit Accessibility: The Case of Vietnam. *Sustainability* 12:9559. <https://doi.org/10.3390/su12229559>
- Parast MM (2021) An assessment of the impact of corporate social responsibility on organizational quality performance: Empirical evidence from the petroleum industry. *Oper Manag Res* 14:138–151. <https://doi.org/10.1007/s12063-021-00190-3>
- Pratama A (2019) SMEs AS The Backbone of Southeast Asia's Growing Economy 29th April. International Federation of Accountants – Issues and Insights, www.ifac.org/knowledgegateway/contributing-global-economy/discussion/smes-backbone-south-east-asia-s-growing-economy (accessed 22 June 2020)
- Qin X, Godil DI, Khan MK et al (2021) Investigating the effects of COVID-19 and public health expenditure on global supply chain operations: an empirical study. *Oper Manag Res*. <https://doi.org/10.1007/s12063-020-00177-6>
- Rahman M, Carpano C (2017) National corporate social policy, corporate governance systems, and organizational capabilities. *Corporate Governance: Int J Bus Soc* 17:13–29. <https://doi.org/10.1108/CG-02-2016-0037>
- Rehman A, Hashim F (2021) Can forensic accounting impact sustainable corporate governance? *Corp Gov* 21:212–227. <https://doi.org/10.1108/CG-06-2020-0269>
- Reinartz W, Haenlein M, Henseler J (2009) An empirical comparison of the efficacy of covariance-based and variancebased SEM. *Int J Res Mark* 26:332–344
- Ritchie H, Roser M (2020) Environmental impacts of food production. Our world in data. <https://ourworldindata.org/environmental-impacts-of-food>
- Samlal Z (2020) Corporate governance and business innovation among listed Moroccan companies. *J Econ Finance Adm Sci* 25:61–72. <https://doi.org/10.1108/JEFAS-05-2019-0074>
- Samson D (2020) Operations/supply chain management in a new world context. *Oper Manag Res* 13:1–3. <https://doi.org/10.1007/s12063-020-00157-w>
- Schaper MT (2020) The Missing (Small) Businesses of Southeast Asia. © ISEAS Yusof Ishak Institute. <http://hdl.handle.net/11540/12240>
- Sciarelli M, Cosimato S, Landi G, Iandolo F (2021) Socially responsible investment strategies for the transition towards sustainable development: the importance of integrating and communicating ESG. *The TQM Journal* 33:39–56. <https://doi.org/10.1108/TQM-08-2020-0180>
- Scuotto V, Alexeis GP, Valentina C, Elisa G (2020) Do stakeholder capabilities promote sustainable business innovation in small and medium-sized enterprises? evidence from Italy. *J Bus Res* 119:131–141. <https://doi.org/10.1016/j.jbusres.2019.06.025>
- Scuotto V, Arrigo E, Candelo E, Nicotra M (2019) Ambidextrous innovation orientation effected by the digital transformation: A quantitative research on fashion SMEs. *Bus Process Manag J* 26(5):1121–1140
- Shaji AE, Shajahan A (2020) Investigating the effects of corporate governance on firm performance: The case of Indian family business groups. *IUP Journal of Corporate Governance* 19:39–61

- Shao L (2019) Dynamic study of corporate governance structure and firm performance in china. *Chin Manag Stud* 13:299–317. <https://doi.org/10.1108/CMS-08-2017-0217>
- Sharma M, Joshi S, Luthra S et al (2021) Managing disruptions and risks amidst COVID-19 outbreaks: role of blockchain technology in developing resilient food supply chains. *Oper Manag Res*. <https://doi.org/10.1007/s12063-021-00198-9>
- Surroca J, Tribó JA, Waddock S (2010) Corporate responsibility and financial performance: The role of intangible resources. *Strateg Manag J* 31(5):463–490
- Tang Z, Hull CE, Rothenberg S (2012) How corporate social responsibility engagement strategy moderates the CSR–financial performance relationship. *J Manage Stud* 49:1274–1303
- Tranfield D, Denyer D, Smart P (2003) Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *Br J Manag* 14:207–222. <https://doi.org/10.1111/1467-8551.00375>
- Vij S, Bedi HS (2016) Are subjective business performance measures justified? *Int J Product Perform Manag* 65:603–621. <https://doi.org/10.1108/IJPPM-12-2014-0196>
- Wang C-H (2019) How organizational green culture influences green performance and competitive advantage: the mediating role of green innovation. *J Manuf Technol Manag* 30:666–683. <https://doi.org/10.1108/JMTM-09-2018-0314>
- Warrad L, Khaddam L (2020) The effect of corporate governance characteristics on the performance of Jordanian banks. *Accounting* 6:117–126. <https://doi.org/10.5267/j.ac.2019.12.001>
- Yermack D (1996) Higher market valuation of companies with a small board of directors. *J Financ Econ* 40:185–211
- Yihun WA, Kolech AG, Tole MG (2019) The Impact of Corporate Governance Mechanisms on the Performance of Commercial Banks: The Case of Private Banks in Ethiopia. *Financial Studies* 23:6–24
- Yu EP, Van Luu B, Chen CH (2020) Greenwashing in environmental, social and governance disclosures. *Res Int Bus Financ* 52:101192. <https://doi.org/10.1016/j.ribaf.2020.101192>
- Zabri SM, Ahmad K, Wah KK (2016) Corporate governance practices and firm performance: Evidence from top 100 public listed companies in Malaysia. *Procedia Economics and Finance* 35:287–296

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.