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Ngoc Hong Duong

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Relationship of Social Sustainability, Operational Performance and Economic Performance in Sustainable Supply Chain Management

Ngoc-Hong Duong[†]

School of International Business and Marketing, University of Economics Ho Chi Minh City (UEH), Vietnam

ABSTRACT

Purpose: Over the past two decades, sustainable development and green economy approaches have been implemented in different fields, including supply chain management. In developed countries, sustainable supply chain management (SSCM) has attracted attention from both academia and industry. However, there is a substantial knowledge gap about supply chain social sustainability in developing countries. Hence, the main purpose of this study is to present the link between social sustainability and economic performance with the mediating role of operational performance in sustainable supply chain management.

Design/methodology/approach: The PLS-SEM model is applied to identify factors affecting social sustainability and the relationship between social sustainability, operational performance, and economic performance in Vietnam. **Findings:** The study broadens the concept and emphasizes the importance of sustainable development in the context of Vietnam and provides recommendations for managers on strategic planning and developing business towards sustainability. This study also encourages managers to enrich employees' welfare and working conditions and contribute to the local community.

Research limitations/implications: The social indicators in developing countries are distinct from those in developed countries. Hence, this study may only apply in the context of developing countries. There are three main pillars of sustainable development, including economic (profit), environment (planet), and society (people). In this research, the author only examines the social and economic aspects.

Originality/value: The outcomes of this study demonstrate a clear link between the social and economic elements of sustainability. While demonstrating how fully implemented Social sustainability improves economic performance, this study stimulates academic research about the interrelationship of sustainability elements in supply chains.

Keywords: Social sustainability, Operational performance, Economic performance, Sustainable developmenty

I. Introduction

A. Overview

Sustainable development is a novel idea that refers to the process of advancing all aspects of modern

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† Ngoc-Hong Duong

E-mail: hongdn@ueh.edu.vn

society while maintaining development in the far future. This idea is now being applied to many countries worldwide; each country will be assessed on its specific economic, social, political, geographical, and cultural characteristics to develop appropriate policies. In World Conservation Strategy, the term "sustainability" first appeared published by the International Union for Conservation of Nature (IUCN) with a very simple definition. After that, the Brundtland Report promoted



this concept globally (Purvis, Mao, & Robinson, 2019). In addition, sustainability is "meeting the social needs of present generations without compromising the future generation's needs" (Meyer, Walter, & Seuring, 2021). In other words, sustainable development must ensure economic development, the well-being of society, and a protected environment. To accomplish this, policymakers, authorities, and managers must collaborate to harmonize three primary areas: society (people), economic (money), and environment (earth).

The concepts of sustainability are founded on Elkington's Triple Bottom Line (TBL) theory and the intersection of the three components that results in the best sustainability performance (Isil & Hernke, 2017). Previous research has shown this coherence in the supply chain management (SCM) domain. As a result, several studies have focused exclusively on two dimensions of sustainability, namely environmental and social sustainability. Significantly, the question of whether economic performance may be obtained through environmental and social sustainability is a recurrent discussion in this domain. Winter and Knemeyer (2013) stressed the significance of sustainability to fully appreciate the economic outcomes of various sustainability solutions. For instance, Goworek, Fisher, Cooper, Woodward, and Hiller (2012) investigated enterprises' social and environmental management policies and their impact on sales volume and profitability, whereas Vanany, Zailani, and Pujawan (2009) demonstrated that social and environmental management efforts across the supply chain result in strategic financial growth. Numerous academics, including Yawar and Seuring (2017) and Sodhi and Tang (2018), have lately emphasized the critical relevance of identifying the relationship between social sustainability and economic sustainability.

Due to a lack of empirical research on this domain, researchers have difficulty defining the components and comprehending the impact. Furthermore, previous studies reveal that the impact of social sustainability on operational performance is unknown (Prasad, Jaffe, Bhattacharyya, Tata, & Marshall, 2017). According to the few pieces of research that have been published, it is challenging to use social sustainability to increase

performance outcomes in the supply chain (Hollos, Blome, & Foerstl, 2012; Young & Suk, 2017). On the other hand, some research showed that sustainability practices can expand access to innovation and knowledge capacities (Pedersen, Gwozdz, & Hvass, 2018), enhance supply chain integration (Zhang, Shen, & Wu, 2011), and result in high supply chain performance as a consequence of incorporating local community concerns (Strand, Freeman, & Hockerts, 2015). Furthermore, it is believed that Social sustainability may indirectly improve operational performance by mitigating company risks (R. Klassen & Vachon, 2009) and increasing reputation through public image (Brammer & Pavelin, 2006). Nevertheless, (ManMohan S. Sodhi, 2015) Sodhi (2015) points out that this subject is under-researched.

Thus, our research explores the relationship between social sustainability and economic performance with the mediating role of operational performance. Our research questions are:

- **RQ1.** Is social sustainability related to economic performance?
- **RQ2.** Does the practice of social sustainability impact operational performance?
- **RQ3.** How does operational performance mediate the relationship between social sustainability and economic performance?

B. Research Gap

There is a substantial knowledge gap about supply chain social sustainability. Until now, research has focused exclusively on environmental sustainability (Huq, Chowdhury, & Klassen, 2016), leaving an open question about the motives and impacts of supply chain social sustainability (Zorzini, Hendry, Huq, & Stevenson, 2015). Labor-related issues are frequently treated incidentally in a few supply chain-related studies. Previous authors have concentrated on a restricted range of concerns, with a particular emphasis on workplace health and safety, child and forced labor, working standards compliance, equal rights, associational freedom, and human rights (Welford & Frost, 2006). Furthermore, social sustainability research primarily

relies on case studies to generate theory and analyze practices (Ciliberti, Pontrandolfo, & Scozzi, 2008). While some studies corroborate the theory, others condense social sustainability activities into a unified idea (Hollos et al., 2012). In addition, Klassen and Vereecke (2012) suggest that resolving social issues in supply chains requires a broad knowledge of how managers organize throughout the chain, how Social sustainability may respond to stakeholder concerns, and how their impact affects performance outcomes.

As a consequence of the limited research on this topic, the relationship between social sustainability and economic performance remains unclear (Closs, Swink, & Nair, 2005). For example, Prasad et al. (2017) offer a significant contribution to this field by discovering fundamental and advanced behaviors and investigating the effect of social sustainability on performance outcomes in the supply chain. Nevertheless, this study did not examine the indicators of social sustainability or their influence on economic performance, which is critical for this work. As a result, our study was needed for a variety of reasons. Firstly, as noted before, our research demonstrates the need for more research about social sustainability and economic performance in the supply chain. The second purpose of this research is to explore the notion of social sustainability and provide a rationale for how social sustainability might improve operational performance and economic sustainability. Finally, our research is likely the first paper to examine the link between social sustainability, economic performance, and operational performance in Vietnam.

C. Current situation of Social Sustainability in Vietnam

Vietnam is a country that is strongly committed to the implementation of the sustainable development goals through the issuance of the Vietnam Strategic Orientation for Sustainable Development in 2004, the Vietnam Sustainable Development Strategy for the period 2011 - 2020; and most recently the National Action Plan to implement the 2030 Agenda for Sustainable Development (Government News, 2022).

Moreover, the United Nations and its partners in Vietnam are striving to accomplish the Sustainable Development Goals: 17 aspirational objectives that address the most pressing development issues facing people in Vietnam and around the globe (United Nations Vietnam, 2022). The Sustainable Development Goals call for action to address to eradicate poverty, safeguard



Source: United Nations Vietnam, 2022.

Figure 1. 17 Sustainable Development Goals in Vietnam

the earth's ecosystem and climate, and guarantee that people everywhere may experience peace and prosperity. These are the aims that the United Nations is executing in Vietnam.

To accomplish the above goals, the Government sets out common tasks and solutions. The authorities also issue policies on sustainable production and consumption; promote green supply chain management; develop a sustainable supply chain with environmentally friendly products and services; give priority to small and medium enterprises; and promote the development of the environmental industry, waste recycling industry.

In brief, according to 17 sustainable development goals in Vietnam, 9 over 17 goals are focused on the social sustainability, including: (1) No poverty, (2) Zero hunger, (3) Good health and well-being, (4) Quality education, (5) Gender equality, (6) Clean water and sanitation, (7) Reduced inequalities, (11) Sustainable cities and communities, and (16) Peace, justice and strong institution (see Figure 1). As a result, the author realizes the need for further studies in this domain. Based on the above goals, the author will select six main indicators that are relevant to social sustainability "Ethical improvement, Education, Gender equity, Health & Safety, Philanthropy, and Well-being" in Vietnam. The author also gives more explanation in the next parts (United Nations Vietnam, 2022).

II. Literature Reviews

A. Social Sustainability

As defined in the supply chain research, social sustainability is a straightforward extension of corporate social responsibility (Hutchins & Sutherland, 2008). Social sustainability in the supply chain may be characterized as avoiding social inadequacy that negatively impacts local societies and promoting employee and community well-being and benefit (Huq et al., 2016). An alternate explanation for social sustainability is a business's capacity to identify social

behaviors associated with products and services that may adversely influence consumers, suppliers, and workers' well-being, benefits, and safety across the supply chain (Tate, Ellram, & Kirchoff, 2010).

Numerous studies have been published describing the fundamental components of social sustainability and how to quantify them (Castka & Corbett, 2016; Giannakis & Papadopoulos, 2016). According to their research, three critical supply chain social sustainability components are employee safety, health, and well-being. Additionally, several writers have discovered that diversity, philanthropy, health and safety, and human rights are additional factors to consider when evaluating the social sustainability of supply chains (Carter, 2005; Carter & Jennings, 2002; Duong & Ha, 2021a, b). Meanwhile, in emerging economies, supply chain social sustainability is determined by safety, equality, and poverty (Vachon & Klassen, 2008). As a result, this study identifies ethical improvement, education, gender equity, health and safety, philanthropy, and well-being as the six most significant determinants affecting Social sustainability in Vietnam.

B. Operational Performance

Only a few research studies have looked at the link between supply chain social sustainability and non-financial performance (Zorzini et al., 2015). According to Danciu (2013), one of the top ten global sustainability leaders applies sustainability practices to their firms' fiber, which leads to high-performance outcomes in their supply chain. Another study directly linked a specified and established sustainability vision and operational effectiveness (Ackerman-Leist, 2013). However, linking operational performance to sustainable development could be difficult due to the possibility of a large number of results in different aspects and the distinct variety of measurements (Roca & Searcy, 2012). As a result, assessing operational performance is challenging. In addition, researchers often examine different techniques to measure based on their opinions (Ketokivi & Schroeder, 2004).

This research measures operational performance

by examining respondents' judgments of product quality, process improvement, and lead time reduction (Kotabe, Martin, & Domoto, 2003). Operational performance is described as product development efficiency, process improvement, quality compliance, and quick lead times (Klassen & Vachon, 2009). Additionally, the author might presume that supply chain social sustainability positively influences operational performance throughout staff engagement and productivity. It is also likely to lead to an increase in motivated and dedicated employees (Pfeffer, 2010). Because Social sustainability enhances health and safety, working conditions, welfare, and ethics across the supply chain (Morais & Silvestre, 2018), they are likely to impact operational performance through increased product development efficiency, process improvements, and lead time reductions.

Furthermore, operational performance relates to a company's ability to reduce management costs, order fulfillment times, and lead times as well as increase the efficiency of raw materials. As a result, distribution capacity is utilized (Heizer & Render, 2008). Operational performance is critical for businesses because it enables them to boost their production operations' efficacy and produce high-quality goods (Kaynak, 2003), resulting in more significant revenue and profit. Operational outcomes influence competitive advantage in operational effectiveness, including cost, quality, delivery, flexibility, and timeliness (Jones, Hines, & Rich, 1997). The term "cost and quality advantage" refers to an organization's ability to compete against competitors based on cost and quality superiority while providing value for consumers. Additionally, it is suggested that time advantage is a critical competitive factor in supply chain management (Kessler & Chakrabarti, 1996). The term "time-based advantage" refers to an organization's ability to compete based on its time superiority in providing value for consumers.

C. Economic Performance

Economic performance measures a firm's ability to absorb all of the monetary expenses involved with its economic activity. In addition, economic performance is the most widely used variable and refers to measurements of a firm's profit after tax, economic impacts, and sales revenue. Previous research found that a firm's social sustainability activities may considerably benefit the procedures that lead to operational performance. Hence, it leads to high collaboration with supply chain members by fostering responsible attitudes toward social and environmental issues. Furthermore, some studies have indicated that operational and commercial success could enhance a firm's economic benefits.

Economic sustainability has been defined in the literature in two aspects, "financial" and "non-financial," with the majority of research focusing on financially quantifiable economic sustainability measures (Orji & Wei, 2016). For example, in a recent study, Wang and Sarkis (2017) used financial performance metrics such as return on assets and return on equity to examine the link between social sustainability and economic sustainability. In addition, Nakamba, Chan, and Sharmina (2017) underlined the need to do research that incorporates non-financial performance to illustrate how social sustainability policies influence both monetary and non-monetary financially valued outcomes.

D. Sustainable Development

There are many definitions of sustainable supply chain management. Carter and Rogers (2008) defined sustainable supply chain management (SSCM) as the strategic integration and achievement of an organization's social, environmental, and economic goals through systematic coordination of critical inter-organizational business activities to improve the long-term economic performance of the individual company and supply chain.

In addition, the environmental and social parts of sustainable supply chain management should be connected with a clear and straightforward identification of the organization's economic goals. Therefore, Carter and Jennings (2002) recommended that firms undertake social and environmental parts throughout the supply chain. In another view, Porter and Kramer (2002) suggested that managers must perform corporate social

responsibility to enhance overall performance and achieve financial goals. As a result, Carter and Rogers (2008) described that to accomplish the "best" in SSCM, firms need to combine and improve three main aspects of sustainability, including economic performance, social performance, and environmental performance.

The interrelationships among society, the environment, and economic/industrial development are integral to sustainability. In order to achieve sustainable development in both industrialized and developing nations, the author must characterize the connections and interactions among these three 'pillars' of sustainability (Hutchins & Sutherland, 2008). It is relevant because a balance among the pillars cannot be achieved without an adequate understanding of how societal and industrial actions affect the environment and how today's decisions may impact future generations. Therefore, increased knowledge and awareness of the issues encompassed by sustainable development are needed (Kleindorfer, Singhal, & Van Wassenhove, 2005).

E. Theoretical Background

Stakeholder resource-based view (SRBV) is a framework for guiding a firm's managers toward optimizing their sustainable growth by enhancing their dynamic capabilities and resources and those of the firm's stakeholders, so increasing their respective productivity utilities (Kull, Mena, & Korschun, 2016). SRBV is founded on the resource-based perspective (RBV). The inventory of valuable, rare, inimitable, and non-substitutable (VRIN) resources has been the core of a firm's competitive advantages. Additionally, Freeman, Dmytriyev, and Phillips (2021) argued that the connectivity between suppliers and consumers enables businesses to establish VRIN resources; thus, it will lead to the art or practice of outperforming a competition progressively.

Furthermore, while collaborating in the supply chain to improve sustainable growth, stakeholders will contribute significant intangible resources to businesses, such as human resources, research and development, and financial assistance. In addition, RBV may uncover diversity concerns pertinent to suppliers and how this issue would impact supply chain performance outcomes. Therefore, managers can regulate and restrict the risks and adverse effects associated with these concerns (Clarke & MacDonald, 2019). Campbell & Park (2017) define capabilities as "the capacity of a collection of resources to carry out a certain job or activity." Hence, capabilities may be viewed as the building of a long-term competitive advantage when they are difficult for rivals to replicate (Hamdoun, 2020; Wang & Sengupta, 2016).

Besides this, SRBV focuses on managing stakeholders as important assets that enable the company to consistently outperform its competition (Sodhi, 2015). Based on the RBV (Dmytriyev & Phillips, 2021), utility theory, and stakeholder theory (Freeman et al., 2021), the SRBV stresses that all supply chain participants, including suppliers, employees, and consumers, must be treated fairly and ethically. Consequently, it results in improved performance in the end (Tate & Bals, 2018). In other words, managers should assume responsibility for any social concerns inside the supply chain, as they may result in interruptions and dangers. As a consequence, managers will get a competitive edge over the targeted enterprises and accomplish supply chain performance with success. To analyze the link between social sustainability practices and performance results in the supply chain, the author has based the theoretical model on SRBV.

Hence, the author applies SRBV to examine the relationship between social sustainability, economic performance, and operational performance.

III. Hypotheses Development

This study aimed to determine the influence of social sustainability on economic performance with the mediating role of operational performance. To understand this topic, the author divided social sustainability into two separate categories: internal social sustainability and

external social sustainability (Sudusinghe & Seuring, 2020). Internal social sustainability focuses on activities that significantly influence the human component (employees and staff) inside the corporation, such as ethical improvement, education, health & safety, and gender equity. On the other hand, external social sustainability emphasizes behaviors that eventually benefit society, such as philanthropy and well-being.

To enhance firm performance, managers should pay greater attention to engaging and encouraging their members to operate ethically and responsibly. There is a growing number of literatures concerning social issues (Huq et al., 2016; Klassen & Vachon, 2009). For example, unsafety working conditions, low income, or over-working from large multinational corporations like Nike and Adidas have been reported in previous research (Seuring & Mx Iler, 2008). Therefore, our first hypothesis is:

H1: Ethical improvement positively impacts social sustainability in the supply chain.

In particular, business strategies relevant to supply chain social sustainability may lead to skilled labor shortages in developing countries. Therefore, managers should focus on improving employees' education, which results in high economic performance (Huq et al., 2016). Our next hypothesis is as follows:

H2: Education positively impacts social sustainability in the supply chain.

Gender equality is not only a basic human right, but also a prerequisite for a peaceful, affluent, and sustainable global society (Yawar & Seuring, 2017). In addition to being one of the 17 Sustainable Development Goals, women's equality and empowerment are fundamental to all aspects of achieving the sustainable development goals (Turker & Altuntas, 2014). The following hypothesis has been made:

H3: Gender equity positively impacts social sustainability in the supply chain.

In addition, employee performance is critical to success in a firm's economic performance (Kim, Knutson, & Choi, 2016). In addition, to increase employee

performance, it is critical to empower employees via enhanced working conditions, health & safety, insurance (Melián-González, Bulchand-Gidumal, & López-Valcárcel, 2015). Hence, the author proposes:

H4: Health & Safety positively impacts social sustainability in the supply chain.

By highlighting social issues, a business can improve its supply chain performance and a country's financial performance (Hutchins & Sutherland, 2008). In addition, numerous studies have established that social responsibilities have a measurable effect on supply chain performance (Klassen & Vereecke, 2012). Similarly, throughout the supply chain, it has been proposed that there is a correlation between Social sustainability and human acceptability (Ciriello et al., 2015). Organizations frequently engage in philanthropic activities in their programs (von Schnurbein, Seele, & Lock, 2016). Currently, organizations are increasingly moving to charitable efforts to engage the community to ensure society's well-being through activities such as philanthropy, charity, and social support programs. While researchers have long examined the economic consequences of social sustainability activities (Paul & Siegel, 2006), their influence on economic performance is worth studying in the context of sustainable supply chain development. As a result, our next hypotheses are as follows:

H5: Philanthropy positively impacts social sustainability in the supply chain.

H6: Well-being positively impacts social sustainability in the supply chain.

Over the last three decades, several pieces of empirical research have explored the influence of supply chain social sustainability on firm performance, finding a variety of favorable outcomes (Abdullah, Mahmood, Fauadi, Abahman, & Mohamed, 2017). The basic premise is that social sustainability improves performance by improving connections with other stakeholders, affecting expenditures and benefits (Lai, Chiu, Yang, & Pai, 2010). From a revenue viewpoint, an increased stakeholder connection draws additional investment possibilities and consumers, allowing a

business to charge a premium price (Barnett, 2007). Moreover, trust results in cost savings associated with specific procedures and transactions from an operational aspect. Social sustainability activities contribute to financial performance and entice customers to buy items and services (Lai et al., 2010). More precisely, corporations may optimize profits by targeting socially conscious consumers, as Social sustainability can directly affect customer satisfaction and loyalty (Chen, 2008). As a result, social sustainability benefits the organization's operational, marketing, and economic performance. The following hypotheses have been made:

- **H7:** Social sustainability positively influences operational performance.
- **H8:** Social sustainability positively influences economic performance.

Many authors have recently stated that operational performance, business image, and reputation are the main components of Social sustainability (Porter & Kramer, 2002). This study approaches operational performance, proposing that Social sustainability can significantly influence and result in more excellent economic performance. Furthermore, adopting socially responsible practices may strengthen a business's relationship with strategic members in the supply chain. Therefore, these operational and commercial competencies may significantly enhance a corporation's economic consequences. According to Hubbard (2009), due to the complexity of business operations that combine social, economic, and environmental perspectives, they will vary the degree and direction of a firm's performance. In addition, a previous study showed that it elucidates organizational performance determinants associated with the implementation of Social sustainability that increase economic performance. The final hypothesis is proposed:

H9: Operational performance positively influences economic performance.

Figure 2 shows the proposed research model of this study.

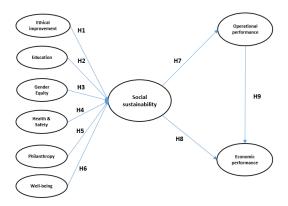


Figure 2. Proposed Research Model

IV. Methods

A. Design Questionnaire

The author utilized a two-stage method for measurement creation. First, the author did a comprehensive literature analysis to find current indicators for social sustainability in the supply chain and social sustainability in developing markets. The social sustainability is the first-order factor that includes six secondorder factors: Philanthropy (4 items), Well-being (3 items), Gender Equity (3 items), Education (3 items), Ethical Improvement (3 items), and Health & Safety (3 items). The chosen social sustainability under six dimensions was operationalized earlier for previous research (Klassen & Vereecke, 2012; Mani, Gunasekaran, & Delgado, 2018; Ruwanpura, 2014; Yawar & Seuring, 2017). In addition, the questionnaire was initially developed in English and later translated by the author into Vietnamese, use double- and reverse-translation procedures, in a coordinated manner for countries with language constraints (Vanpoucke, Vereecke, & Wetzels, 2014).

The dependent variables' measurements of the relevant topics were derived from existing measures or published research on related themes. To assess these items, the author adopted and altered prior research assessment questions. The social sustainability practice was adopted by Klassen & Vereecke (2012); Mani et al. (2018); Ruwanpura (2014); Yawar &

Seuring (2017). Operational performance was quantified using data from earlier research conducted by Kim and Thapa (2018) (3 items). Items from Sudusinghe and Seuring's (2020) research were used to measure Economic performance (4 items) (see Appendix). Respondents were asked to apply the assertions to their businesses' supply chain operations and score their level of agreement on a 7-point Likert scale.

B. Participants and Data Collection

To justify the hypotheses development, the proposed research model, and the measurement scales of this study, the author will develop a survey to collect the primary data. The final questionnaire includes four main parts: (1) An overview of the aims and purpose of this research, the author's affiliation and contact

detail, as well as the definition and importance of social sustainability, (2) Main questions for the respondents that are relevant to the research topic: Social sustainability, Operational performance, and Economic performance, (3) Company's information: Operation year, Size, and Industry, and (4) Respondent's information: Working experience, Current position.

The author delivered both online and offline surveys to managers from different companies. The survey respondents are Vietnam's medium and large businesses. All businesses have been in operation for more than five years, and their capital investment must surpass \$1 million. The author employed these criteria to guarantee that all businesses are operationally mature and have a sufficient understanding of social sustainability methods. Additionally, the author only picks individuals with more than five years of experience in their present position, since they will have sufficient

Table 1. Sample Characteristics

Characteristics	Frequency $(n = 215)$	Percent (100%)	
Company's operation time			
6 to 10 years	74	34.4	
11 to 15 years	63	29.3	
16 to 20 years	55	25.6	
Above 20 years	23	10.7	
Company's capital investment			
Medium enterprise: 1-5 million USD	93	43.2	
Large enterprise: More than 5 million USD	122	56.8	
Industry			
Manufacturing	99	46.0	
Vendors	17	7.9	
Transportation	34	15.8	
Retailers and Distributors	36	16.8	
Service	29	13.5	
Respondent's working experience			
6 to 10 years	122	56.7	
11 to 15 years	72	33.5	
16 to 20 years	14	6.5	
Above 20 years	7	3.3	
Respondent's position in the company			
Middle manager	146	67.9	
Executive and top manager	69	32.1	

knowledge and an in-depth awareness of their organization's culture. We distributed the questionnaire to responders who were inside our sample set. Briefly, the author received 228 answers; after filtering to meet the aforementioned criteria, 215 responses from 215 distinct firms were maintained for additional data analysis (see Table 1).

V. Results

Firstly, the author will describe the sample characteristics and descriptive statistics. Secondly, the author conducted a factor analysis and reliability test in SmartPLS 3.0 to examine the variable consistency (Ringle, Sven, & Jan-Michael, 2015). The next step illustrates the empirical results of the proposed hypotheses. In addition, common method bias is presented in this section.

A. Descriptive Statistics, Reliability, and Discriminant Validity

The author performed a factor analysis and reliability test in SmartPLS 3.0 to assess the variable consistency (Ringle et al., 2015). After the initial phase of factor analysis, any items with factor loadings below 0.70 are eliminated (Hair, Ringle, & Marko, 2011). Composite reliability (C.R) and Cronbach's Alpha are more than 0.7 in the reliability test to ensure the high dependability of the measurements (Bagozzi, 2011). The convergent validity is also satisfied when the average variance extracted (AVE) of all constructs is greater than 0.5 (Zaiţ & Bertea, 2011); the subsequent sections include descriptive statistics and reliability measurements. Tables 2 and 3 display descriptive data and outer loadings for each item.

The author utilized the Fornell-Larcker criteria and the Heterotrait-Monotrait ratio (HTMT) (Henseler, Ringle, & Sarstedt, 2015). The square root of each construct's AVE (the diagonal elements) was more

significant than other inter-construct correlations, suggesting that the discriminant validity of the constructs was sufficient (see Table 4). All HTMT were less than the threshold of 0.90. As a result, discriminant validity was not a problem for this study (Hair, Sarstedt, Ringle, & Gudergan, 2017). In turn, this strengthens the discriminant validity of the researched notions.

Moreover, Cronbach's Alpha, CR (composite reliability), and AVE were used to examine the reliability of the reflective data (average variance extracted). According to Table 5, the loadings of all construct indicators were more than 0.70. Cronbach's Alpha and CR were both more than 0.70 (DeVellis & Thorpe, 2021).

B. Common Method Bias

As a self-administered survey, the link between two constructs may be overstated, resulting in the prevalent method bias (CMB). As recommended by (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the author employs two methods to determine if our data is free of CMB. To begin, SPSS was used to conduct Harman's single-factor test. This test established that CMB was not a significant issue, since a single component identified using this technique explains only 43% of the variation below the 50% criterion. Additionally, the CMB is evaluated by assessing the VIF generated for all components. The results indicated that all VIF values in the model were less than the 3.3 thresholds, showing that CMB was not an issue in this study (Ned, 2015).

C. Hypothesized model testing

The author evaluated the structural model using SmartPLS 3.0 (Ringle et al., 2015) based on the importance of the calculated path coefficient and R-squared (J. J. F. Hair et al., 2016). In addition, the author checked the model with 5,000 bootstrap samples, as recommended by J. F. Hair et al. (2011), to confirm that the estimated path coefficients are stable. The PLS-SEM result is displayed in Table 6. The adjusted R-squared values for the four endogenous variables

Table 2. Descriptive Statistics

Items	Minimum	Maximum	Mean	Std. Deviation
ei1	1	7	6.01	1.074
ei2	2	7	6.00	0.991
ei3	1	7	5.65	1.236
ed1	4	7	6.11	0.857
ed2	4	7	6.02	0.834
ed3	3	7	5.94	0.835
gel	1	7	6.09	1.014
ge2	1	7	6.04	1.102
ge3	1	7	6.06	1.037
hs1	2	7	6.06	0.996
hs2	2	7	6.04	0.985
hs3	2	7	6.07	0.962
ph1	1	7	5.55	1.359
ph2	1	7	5.51	1.275
ph3	1	7	5.69	1.260
ph4	1	7	5.40	1.292
wb1	3	7	6.38	0.793
wb2	2	7	6.00	1.032
wb3	1	7	5.54	1.274
opr1	2	7	5.96	0.751
opr2	2	7	5.98	0.733
opr3	2	7	5.99	0.717
epr1	2	7	6.01	0.733
epr2	3	7	6.05	0.696
epr3	3	7	6.01	0.697
epr4	2	7	6.01	0.707

Table 3. Outer Loadings

	ED	EI	EPR	GE	HS	OPR	PH	WB
ed1	0.882							
ed2	0.880							
ed3	0.844							
ei1		0.923						
ei2		0.895						
ei3		0.879						
epr1			0.897					
epr2			0.876					
epr3			0.857					
epr4			0.865					

Table 3. Continued

	ED	EI	EPR	GE	HS	OPR	PH	WB
ge1				0.886				
ge2				0.853				
ge3				0.773				
hs1					0.879			
hs2					0.848			
hs3					0.866			
opr1						0.900		
opr2						0.866		
opr3						0.895		
ph1							0.884	
ph2							0.833	
ph3							0.860	
ph4							0.817	
wb1								0.858
wb2								0.867
wb3								0.870

Table 4. Correlations between Research Constructs

	ED	EI	EPR	GE	HS	OPR	PH	SSP	WB
ED	0.869								
EI	0.135	0.895							
EPR	0.515	0.397	0.874						
GE	0.369	0.137	0.254	0.838					
HS	0.258	0.074	0.363	0.220	0.864				
OPR	0.447	0.414	0.606	0.326	0.360	0.887			
PH	0.423	0.061	0.431	0.364	0.077	0.422	0.849		
SSP	0.746	0.352	0.707	0.603	0.443	0.680	0.731	0.506	
WB	0.238	0.003	0.476	0.102	0.125	0.404	0.284	0.513	0.865

Note: Diagonal elements (in bold) are the square root of the average variance extracted

obtained are likewise significant: Economic performance (0.585) and Operational performance (0.514).

The results indicated that H1 was supported as Ethical improvement, Education, and Health & Safety positively impact Social sustainability (β H1=0.469, pH1<0.001; β H2=0.288, pH2<0.001; β H4=0.304, pH4<0.001). Similarly, Philanthropy and Well-being positively impact Social sustainability (β H5=0.281, pH5<0.001; β H6=0.410, pH6<0.001). In contrast, Gender equity is not influenced by Social sustainability (β H3=

0.006, pH3>0.001). Moreover, Social sustainability and Operational performance were expected to impact economic performance positively; however, the results showed that only Social sustainability had this impact (β H7=0.719, pH7<0.01). Therefore, H7 was supported, while H9 was not supported (β H9=0.119, pH9>0.05). In addition, Social sustainability positively impacts Operational performance (β H8=0.678, pH8<0.01). The hypotheses testing results depicted the conceptual model (Figure 3).

Table 5. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted
ED	0.838	0.841	0.902	0.755
EI	0.883	0.898	0.927	0.809
EPR	0.897	0.898	0.928	0.763
GE	0.791	0.818	0.876	0.703
HS	0.831	0.837	0.899	0.747
OPR	0.865	0.866	0.917	0.787
PH	0.871	0.885	0.912	0.721
WB	0.833	0.836	0.899	0.749

Table 6. The Results of PLS-SEM

	Path	p-value	Beta	t-value	Result		
Main pa	ıths						
H1	Ethical improvement positively impacts social sustainability.	0.000	0.469	9.135	Supported		
H2	Education positively impacts social sustainability.	0.000	0.288	5.672	Supported		
НЗ	Gender equity positively impacts social sustainability.	0.896	0.006	0.131	Not supported		
H4	Health & Safety positively impacts social sustainability.	0.000	0.304	5.270	Supported		
H5	Philanthropy positively impacts social sustainability.	0.000	0.281	4.315	Supported		
Н6	Well-being positively impacts social sustainability.	0.000	0.410	6.127	Supported		
H7	Social sustainability positively impacts operational performance.	0.000	0.719	19.966	Supported		
Н8	Social sustainability positively impacts economic performance.	0.000	0.678	6.566	Supported		
Н9	Operational performance positively impacts economic performance.	0.303	0.119	1.031	Not supported		
Control	Control variable						
Comp	any's operation time		-0.063	0.836	Not supported		
Comp	any's capital investment		-0.082	0.527	Not supported		

Note: Significance level at ***: p-value < 0.001; **: p-value <0.01; *: p-value <0.05; ns: non-significant

Furthermore, the author applied One-way ANOVA and Independent Sample T-Test to bring more practical insights into whether or not this study should apply differentiated management strategies for different segments of demographic variables such as the company's operation time and capital investment. The results indicated that all the Sig. Values were more significant than 0.05 (Field, 2009). Hence, the author concluded that there were no differences between the company's operation time and the company's capital investment in supply chain social sustainability. It also means that the research model is suitable for all companies.

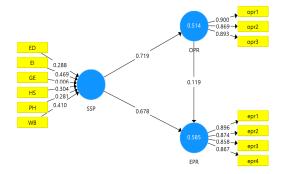


Figure 3. The Results of PLS-SEM

VI. Discussions

A. Theoretical Contributions

Firstly, this study adds to resolving a portion of the academic argument over whether social sustainability achieves increased economic performance and operational performance in the supply chain. In addition, the author proposes concentrating on how economically viable businesses accomplish social sustainability to comprehend the debate's reverse causation.

Secondly, this study identifies specific economic performance. However, empirical evidence indicates that operational performance does not immediately improve economic performance. While social sustainability might improve a firm's operational performance, this cannot be converted into increased profitability because different Social sustainability may be challenging to counterbalance in the short term (González-Benito & González-Benito, 2005). Nonetheless, social sustainability efforts boosted operational performance, and social sustainability had a beneficial effect on economic sustainability. While operational efforts may not directly impact economic performance, they are indirectly influenced by social sustainability.

Through the perception of social sustainability in developing markets, this study aims to address the present research gap by analyzing the many components of supply chain social sustainability (Mani, Gunasekaran, et al., 2016). This conclusion is consistent with earlier research regarding the relationship between social sustainability goals, operational performance, and economic performance (Bai & Sarkis, 2010; Carter & Jennings, 2004; Ciliberti et al., 2008). The research reveals that corporations routinely support their employees and contribute to the local community, which helps them enhance their company reputation and credibility. Customers are also prepared to acquire products and services from companies that demonstrate commitments to social sustainability within their communities. While implementing these ethical and sustainable promises, businesses should solicit the participation of their important clients in these relevant campaigns. In addition, businesses should urge their suppliers to operate

ethically and responsibly to boost the performance of the supply chain.

B. Practical implications

This finding encourages supply chain managers to enrich employees' welfare, working conditions, health, and safety and contribute to the local community (Duong & Ha, 2021 a, b). Moreover, this study provides critical guidance to the firms' managers toward sustainable development by emphasizing the importance of social sustainability motives and their impact on facilitating operational performance and economic sustainability. Our empirical result also shows that employees working in an organization that acts ethically and kindly will increase employee motivation and enthusiasm.

Furthermore, the data indicate that it is beneficial for supply chain managers to design and implement social sustainability to improve operational performance, which improves economic performance. Therefore, managers should evaluate their social and environmental policies and practices from the views of various stakeholders, including customers, suppliers, and the government (Lu, Lee, & Cheng, 2012). Additionally, firms should evaluate their level of philanthropy, which can differentiate them from rivals and contribute to firms' profitability.

C. Limitations and Future Research

Although our findings contribute both theoretical and practical aspects, this study has some limitations. Firstly, a further study focusing on causality would aid in elucidating the direction of the link while simultaneously verifying the model. Future investigation into the direction of causation can be conducted through interviews with experts in this field.

Secondly, when the author considered practitioners' perceptions of the interrelationship between social and economic sustainability dimensions, the author observed that medium and large firms in Vietnam strive for social sustainability that ultimately benefits

their bottom lines. However, these firms had not sought to quantify or investigate this link regarding its influence on their enterprises. As a result, this is a single attempt in one country; the author recommends conducting comparative research in diverse situations to confirm this model for future studies.

Moreover, this study identifies specific economic performance. Consequently, the author addresses the research gap created by comparable studies excluding non-financial performance metrics. To provide a more holistic view of economic performance, the author proposes future research incorporating financial and non-financial performance metrics. In addition, because it takes time for the influence of social sustainability measures to be reflected in financial data (Lee, 2016), the author proposes that further studies in comparable situations be conducted to elucidate the interrelationship between these two aspects.

VII. Conclusions

The author presents six distinct indicators of the social sustainability component in this study, including society's well-being, philanthropy, ethical improvement, gender equity, health and safety, and education through diverse practices. In addition, this study discusses financially and non-financially quantifiable techniques that ensure supply chain economic sustainability.

Furthermore, the outcomes of this study demonstrate a clear link between the social and economic elements of sustainability. While demonstrating how fully implemented social sustainability improves economic performance and operational performance, this study stimulates academic research about the interrelationship of sustainability elements in supply chains. More notably, this study guides the manager's decision regarding social sustainability in emerging markets, particularly in Vietnam.

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Appendix

Construct	Notation	Measurement	Source		
	ei1	Ethical and lawful behavior			
Ethical improvement	ei2	Anti-corruption	Klassen & Vereecke, 2012		
improvement	ei3	Actions against violence and harassment	2012		
	ed1	Improved skilled workforce			
Education	ed2	Employee training and education	Yawar & Seuring, 2017		
	ed3	Capacity building through skill development	2017		
	gel	Opportunities for women in leadership			
Gender equity	ge2	Improved gender equality	Yawar & Seuring, 2017		
	ge3	Women empowerment through technology	2017		
	hs1	Ensure welfare of members in the supply chain	Mani, Gunasekaran, & Delgado, 2018		
Health & Safety	hs2	Ensure availability of health care facilities			
	hs3	Ensures safety across supply chain	Deigado, 2016		
	ph1	Encourage partners to participate in philanthropic activities			
Dl.:141	ph2	Volunteers at local charities	Mani, Gunasekaran, &		
Philanthropy	ph3	Donates to charitable organizations	Delgado, 2018		
	ph4	Assists NGOs with societal development			
	wb1	Awareness of sustainable development			
Well-being	wb2	Access to sanitation and hygiene	Ruwanpura, 2014		
	wb3	Disaster/emergency planning or response			
	opr1	The company has improved its product/service quality			
Operational performance	opr2	The company has increased delivery reliability	Kim and Thapa (2018)		
performance	opr3	The company has reduced total costs	(2010)		
	epr1	Employee attraction			
Economic	epr2	Improve company image	Sudusinghe and Seuring		
performance	epr3	Attraction of new customers	(2020)		
	epr4	Improved profits			