Does Stakeholder Pressure Enhance Sustainable Performance? Mediating Role of Corporate Social Responsibility, Circular Economy Practices, and Sustainable Supply Chain Management

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Abstract: - This research analyzes the influence of stakeholder pressure (SP) on manufacturing SMEs' corporate sustainable performance (CSP) in Vietnam, an emerging economy facing rapid industrialization and sustainability challenges. Based on Stakeholder Theory, Dynamic Capabilities Theory, and the Natural Resource-Based View (NRBV), this research analyzes the mediating roles of corporate social responsibility (CSR), circular economy practices (CEP), and sustainable supply chain management (SSCM) in this relationship. Applying a random sampling method, data were collected from 524 manufacturing SMEs and analyzed through SmartPLS 4. The findings suggest that (1) stakeholder pressure is positively related to corporate sustainable performance and (2) CEP and SSCM are effective mediators in this relationship. These results identify an important stakeholder impact role in leading sustainable business models and also highlight the urgency to embrace circular and responsible supply chain practices. The study is valuable in bringing managerial and policy implications to pave the way toward sustainability for emerging markets.

Key-Words: - stakeholder pressure, corporate sustainable performance, corporate social responsibility, circular economy practices, sustainable supply chain management, emerging market, Vietnam.

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1 Introduction

In recent times, sustainable development has surfaced as a critical agenda for enterprises, particularly in emerging markets, where rapid industrialization and economic growth have placed significant pressure on environmental and social systems, [1]. Governments, customers, and investors increasingly support responsible business practices that are aligned with sustainability agendas companies operating in these markets are under rising pressures to fold environmental and social factors into their strategic decisions. Despite the mounting emphasis on sustainability, the majority of companies, especially small and medium-sized businesses (SMEs), have encountered problems applying sustainable practices efficiently due to scarcity of resources, lack of capabilities, and ambiguities in rules, [2]. Moreover, SMEs in developing economies operate in very competitive markets in which short-term profitability is of greater concern than long-term sustainability goals, [3]. Inefficient access to capital and technology also hinders their ability to apply environmentally sustainable production practices or make investments in sustainable supply chains. Moreover, regulatory frameworks in such economies are not consistent or not well enforced, creating uncertainty for firms attempting to meet sustainability guidelines. Lacking clear incentives or organized support, most SMEs find it difficult to reconcile profitability with sustainability obligations, and this underscores the necessity for more holistic policies and strategies to enable them to shift toward sustainable business operations, [4], [5].

SMEs are important contributors to economic development, generating high levels of employment and driving innovation, [6], [7]. However, their sustainability performance (CSP) often lags behind larger corporations due to limited access to financial and technological resources, [8]. Although a few SMEs lead the green practices movement, others respond to the pressures placed by various stakeholders, [9], [10]. Such pressures encourage firms to enhance their social, environmental, and economic aspects but how far they influence CSP remains controversial. It is important to understand

mechanisms for how SMEs respond to sustainability pressures to form effective plans to ensure long-term resilience and competitiveness.

Stakeholder pressure (SP) refers to the pressure exerted by internal and external stakeholders, including government organizations, investors, customers, suppliers, and communities, to shape corporate strategy, [11]. From a sustainability point of view, SP can either be an impetus or a constraint to compel firms to improve their sustainable performance by adopting ethical business practices, [12]. In the context of the corporate sustainable performance (CSP) concept, refers to the company's potential to realize long-term economic prosperity with fewer harmful environmental and social impacts. While traditional financial performance, focuses primarily on profitability, CSP deals with three essential dimensions: economic, environmental, and social performance, [13], [14], [15].

However, the impact of SP on CSP is not always straightforward, as businesses may adopt sustainability practices symbolically rather than substantively. First, the studies by [9], [16], [17], [18], have shown that stakeholder pressure plays an important role in shaping the sustainable development strategies of SMEs. These studies emphasize that when businesses are influenced by governments, customers, investors, and competitors, they tend to adjust their operations to meet environmental and social responsibility requirements. However, previous studies have certain limitations, particularly regarding the research context. Most existing research has focused on developed economies or regions with strong policy support for businesses to implement sustainable strategies. This creates a gap in understanding the impact of stakeholder pressure in emerging markets, where businesses face unique challenges such as limited resources, underdeveloped regulatory frameworks, and intense competitive pressures. Second, [14], argues that a company's sustainable performance encompasses environmental, economic, and social aspects. However, previous studies examining the role of SP have tended to address only one of these dimensions, [16], [17], [18], [19], underscoring the necessity for a more integrated and comprehensive evaluation approach. Third, although many previous studies have examined the individual impact of CSR, [12], CEP, [3], [20], and SSCM, [21], on corporate performance, there remains a significant gap in evaluating the synergetic relationship among these three factors. Most existing research focuses on bilateral relationships, such as the effect of CSR on CEP or SSCM, but it fails to clarify how these three elements interact to drive sustainable performance. This highlights a critical research gap in understanding the comprehensive interplay between CSR, CEP, and SSCM.

This study was conducted to address several research gaps. First, it focuses on manufacturing SMEs in an emerging Southeast Asian market, specifically Vietnam, which is a developing country. Despite facing uncertainties following the COVID-19 outbreak and continuing trade conflicts between major economies, Vietnam has maintained impressive growth rates, with annual GDP growth of approximately 6-8%, [22]. However, environmental issues like climate change, biodiversity decline, and resource exhaustion remain pressing issues. These challenges necessitate continuous stakeholder pressure to shape the sustainable growth and corporate social responsibility of manufacturing SMEs. Therefore, this study helps readers understand how stakeholders (both internal and external) influence the sustainable performance of manufacturing SMEs in Vietnam, enabling them to navigate environmental, economic, and social challenges. This relationship is examined through three mediating variables: CSR, CEP, and SSCM, which previous studies have identified as having a relatively positive impact on corporate sustainable performance (CSP). Second, based on empirical evidence, this study makes significant theoretical contributions. It strengthens and extends Stakeholder Theory, Dynamic Capabilities Theory, and the Natural Resource-Based View (NRBV) in the context of SMEs in emerging markets. This is demonstrated through the relationships among SP, CSR, CEP, SSCM, and CSP**,** providing deeper insights into the mechanisms that drive sustainability in SMEs.

This study is organized into six main sections. The introduction outlines the research background and objectives. The literature review and hypotheses development explore relevant theories and formulate hypotheses. The methodology details the research design and data analysis approach. The results present empirical findings, followed by the discussion and implications, which interpret the outcomes and their significance. Finally, the conclusion and further research summarize key insights, acknowledge limitations, and suggest future research.

2 Literature Review and Hypotheses Development

2.1 Theoretical Underpinning

This study is based on three fundamental theories: the Stakeholder Theory by [11], the Dynamic Capabilities Theory by [23], and the Natural Resource-Based View (NRBV) by Hart [24], which together support the proposed hypotheses.

The Stakeholder Theory emphasizes that businesses are influenced not only by shareholders but also by various stakeholders, including customers, governments, and communities. When stakeholders are pressured for sustainable development (SP), firms tend to adjust their strategies to enhance corporate sustainable performance (CSP), [25], [26]. One crucial mechanism linking stakeholder pressure to CSP is corporate social responsibility (CSR). According to [12], CSR is more than just adherence to regulations but extends to voluntary activities that create social and environmental value. Firms under stakeholder pressure are likely to invest in CSR initiatives to build brand reputation, attract investors, and maintain competitive advantage, [27]. Consequently, CSR serves as a mediating factor between SP and CSP. Beyond CSR, circular economy practices (CEP) also play a key role in translating stakeholder pressure into improved CSP. Research suggests that firms facing regulatory and customer demands are more likely to apply circular economy models, like recycling, reuse, and material optimization, to minimize waste, [1], [3]. Additionally, sustainable supply chain management (SSCM) serves as a crucial link between SP and CSP. When confronted with sustainability requirements, firms tend to restructure their supply chains by selecting environmentally responsible suppliers, incorporating recycled materials, and optimizing logistics to reduce carbon emissions, [28].

The NRBV by [24], contends that companies gain sustainable competitive advantage through the evolution of environmentally conscientious resource management strategies. In this regard, CSR is a key driver of CEP through its promotion of investments in green technology, resource productivity, and sustainable business models, [17], [29]. Firms with strong CSR commitments will more probably engage in circular economy initiatives, such as material reuse, product life extension, and minimizing industrial wastes, [30].

The Dynamic Capabilities Theory by [23], highlights that firms have to continuously adapt to an evolving business environment by developing new capabilities. Within the framework of sustainability, one of the important capabilities is to use CEP efficiently to maximize the use of resources and reduce waste, [3]. Companies that possess good dynamic capabilities can swiftly make changes in strategies to incorporate concepts of circular economy in production and supply chain management to improve CSP ultimately, [14]. Nevertheless, CEP cannot be utilized without the backing of SSCM. SSCM facilitates the incorporation of circular economy concepts in the production and distribution processes, such as selecting green suppliers, creating recyclable products, and optimizing logistics to reduce environmental impact. When CEP is effectively implemented, it supports SSCM, which further improves the sustainable performance of a firm.

2.2 Stakeholder Pressure (SP) and Corporate Sustainable Performance (CSP)

The literature review on stakeholder pressure and sustainable performance encompasses various perspectives and approaches. On the one hand, employing stakeholder theory and the pressure-behavior-performance logic, [9], demonstrated the indirect influence of stakeholder pressure (SP) on corporate sustainable performance (CSP) through creative responsibility, with flexible routine replication acting as a moderating factor. On the other hand, prior studies have also assessed the direct connection between SP and CSP. A survey of manufacturing SMEs revealed that regulatory stakeholder pressures and organizational stakeholder pressures significantly influence reputation, financial performance, and environmental performance, [16]. Similarly, [18], found that stakeholder pressure directly and indirectly affects environmental performance, with green management acting as a mediating variable in this relationship. The findings, however, remain inconclusive due to different approaches to sustainable performance aspects and varied contextual settings.

H1: SP has a positive impact on CSP.

2.3 Mediation Role of Corporate Social Responsibility (CSR) in the Link between SP and CSP

The mediating role of CSR between SP and CSP has been explained in several previous studies. From the perspective of stakeholder theory, [11], corporate social responsibility (CSR) actions can be

influenced by various stakeholders, institutions, or policies, [12]. Socially responsible actions help businesses achieve long-term sustainability, [31]. CSR was first defined by [32], stating that entrepreneurs must ensure that all their business actions and behaviors align with societal goals and values. From a sustainable development perspective, CSR emphasizes that businesses must balance three objectives: profit, social responsibility, and environmental protection. This approach aligns with the research objective of examining how CSR fosters corporate sustainability. CSR considers various stakeholder groups, including employees, shareholders, partners, social organizations, governments, and the environment, [33]. Consequently, different stakeholders have distinct expectations of an organization. Research conducted by [34], investigates how SP impacts the sustainable performance of mega-projects through corporate social responsibility and green competitive advantage. The results indicate that stakeholder pressure has a positive effect on corporate social responsibility and the sustainable performance of mega-projects. While this research emphasizes the mediating role of CSR, it does not apply an appropriate theoretical framework and fails to consider corporate sustainable performance, which must include three components.

In this research, the relationship between SP and CSP is evaluated through the mediating role of CSR. Therefore, the relationships among SP-CSR and CSR-CSP must be examined. On one hand, using stakeholder theory and legitimacy theory, [35] and [36], demonstrated that stakeholders play a crucial role in shaping corporate social responsibility within manufacturing enterprises, especially in addressing labor accidents in the industry. Additionally, external stakeholders encourage business leaders to act more ethically, thereby promoting social responsibility, [10]. On the other hand, CSR contributes to long-term corporate sustainability by balancing financial, social, and environmental goals, [31]. A literature review approach reveals that previous studies have identified social responsibility as a foundation for fostering sustainable practices by addressing employee and community expectations. This, in turn, enhances corporate reputation among customers and governments, facilitating the achievement of financial objectives, [19], [37]. However, the author argues that there is a lack of empirical evidence to support these relationships. Based on these arguments, we propose the following hypotheses:

H2a: SP has a positive impact on CSR.

H2b: CSR has a positive impact on SCP.

H2: CSR mediates the link between SP and CSP.

2.4 Mediation Role of Circular Economy Practices (CEP) in the Link between SP and CSP

CEP is defined as a model in which production and consumption focus on maximizing the product lifecycle while minimizing waste disposal into the environment. Among these, the design phase is considered the most critical factor, as effective design ensures adherence to circular economy principles, [3]. In a traditional economy, businesses often prioritize profit maximization while neglecting social and environmental impacts. Conversely, [28], argue that the CE model contributes to the ecosystem in various ways. CE has expanded to include additional goals such as human well-being, environmental protection, culture, and social development. These objectives are fundamental when enterprises implement this model, aligning with the core goals of corporate sustainable performance (CSP).

The link between SP, CEP, and CSP has been investigated in various previous researches, offering multiple perspectives on this issue. Prior research tends to apply stakeholder theory and the resource-based view (RBV) to describe these relationships. According to [20], stakeholder pressure is closely linked to circular economy principles and impacts both economic and environmental performance. Their study highlights the challenges and catalysts of the circular economy transition in Mexico, emphasizing the role of stakeholder pressure in the adoption of principles of circular economy. Additionally, the implementation of circular economy practices can be influenced by both internal and external stakeholders, [20].

From the perspective of an increasingly competitive market, businesses exhibit different responses when facing challenges. To understand this, [38], assert that stakeholders play a crucial role in helping enterprises navigate difficulties. Moreover, a significant shift in strategy is required, with circular economy principles emerging as an effective means to address unsustainable market challenges, [38], [39]. However, the transition process is often slow. Thus, stakeholder involvement serves as a driving force behind this transformation, [39]. For example, governments can provide preferential capital policies to ensure that enterprises have the necessary resources to invest in circular equipment, as transitioning to a CE model initially requires substantial capital investment, [3], [40]. Previous studies have adopted comprehensive

and in-depth approaches from both empirical and theoretical perspectives. Considering this argument, we propose the following hypotheses:

H3a: SP has a positive impact on CEP.
H3b: CEP has a positive impact on CSP.
H3: CEP mediates the link between SP and CSP.

2.5 Mediation Role of Sustainable Supply Chain Management (SSCM) in the Link between SP and CSP

SSCM is understood as the process of integrating social and environmental values into supply chain management to enhance the sustainable performance of enterprises, [41]. Within the framework of increasing emphasis on the Sustainable Development Goals (SDGs), SSCM helps optimize supply chain management processes, improve operational efficiency, and reduce resource consumption. This process includes activities such as packaging, sorting, transportation, and commercialization, provided they comply with sustainability principles, including minimizing resource and energy consumption, enhancing recyclability, and extending product lifespan, [28]. Furthermore, SSCM not only brings environmental benefits but also creates economic and social value for enterprises, such as reducing operational costs, enhancing brand reputation, and ensuring compliance with legal regulations, [42]. Additionally, applying SSCM helps businesses improve their ability to forecast and adapt to supply chain disruptions by leveraging digital technologies and flexible management models. This sustainable approach is particularly crucial in the context of global uncertainties caused by pandemics, conflicts, and shifts in trade policies, enabling businesses to maintain competitiveness and achieve long-term sustainable development, [21], [43].

The mediating role of SSCM in the link between sustainable performance (SP) and corporate sustainable practices (CSP) has attracted considerable attention from scholars in recent times. In this context, the implementation of SSCM can be influenced by various stakeholders, particularly the government. The government is often regarded as a key stakeholder with the ability to exert substantial influence on businesses through regulatory mechanisms such as taxation, legislation, and policy frameworks. Using stakeholder theory, [21], [44], argued that stakeholders positively impact corporate sustainable performance by promoting effective supply chain management. This underscores the important part of sustainable supply chain management (SSCM) in enhancing business sustainability. However, their findings primarily focused on environmental aspects and labor safety, overlooking other dimensions of sustainable performance, such as financial and social sustainability. Furthermore, [45], introduced a theoretical framework incorporating SSCM's mediating role in assessing the link between pressure of stakeholders, SSCM implementation, and sustainable financial effectiveness within Pakistan's manufacturing sector. Their study highlights the broader implications of SSCM beyond environmental concerns, emphasizing its role in driving financial sustainability through effective stakeholder engagement. Previous studies have demonstrated that SSCM plays an important mediating role in strengthening the link between SP and CSP. Based on these arguments, the author proposes the four hypotheses.

H4a: SP has a positive impact on SSCM.
H4b: SSCM has a positive impact on CSP.
H4: SSCM mediates the link between SP and CSP.

2.6 Corporate Social Responsibility and Circular Practices

CSR is a business philosophy that seeks to generate long-term benefits for businesses as well as the societies in which they are operating. The CSR perspective has been well accepted both theoretically and practically, with numerous studies demonstrating its impact on financial performance, customers, as well as company reputation, [46]. [47], analyzes the theoretical foundations of corporate environmental responsibility, highlighting the importance of sustainable growth, social contract theory, legitimacy theory, stakeholder theory, and externality theory in guiding business toward responsible environmental practices.

Recognizing social responsibility motivates enterprises to apply sustainable practices, including the implementation of circular economy (CE) principles, [48]. Typically, CSR initiatives begin with recycling and energy conservation practices that resonate with the core principles of circular economy, [49]. CSR actions generate value for businesses, society, and the environment, mirroring the fundamental objectives of CE. Furthermore, integrating CSR with CE principles not only enhances an enterprise's sustainability performance but also strengthens its competitive advantage by improving resource efficiency and reducing waste, [17], [50]. This alignment is particularly crucial in industries with high environmental impacts, where adopting circular practices can mitigate risks associated with resource depletion and regulatory compliance.

While numerous theoretical models suggest that CSR initiatives result in improved circular economy practices, empirical evidence providing concrete proof of this relationship is limited. This shortcoming highlights the need for further studies to establish a strong foundation for examining how CSR practices influence CEP directly in different industries and environments. Based on these arguments, we propose the following hypothesis:
H5: CSR has a positive impact on CEP.

2.7 Circular Economy Practices and Sustainable Supply Chain Management

The transition toward a circular economy (CE) and SSCM have achieved significant attention in recent times. For manufacturing companies, [51], [52], received empirical evidence from surveys conducted in manufacturing companies that CE practices are the key driver for the implementation of SSCM among SMEs in manufacturing companies.. These practices enhance supply chain capabilities and flexibility, enabling businesses to better adapt to market uncertainties, [53]. In the CE context, supply chain flexibility is reflected in the ability to efficiently manage resources, minimize waste, and promptly meet customer demands.

Using a qualitative approach, [54], reviewed 126 studies on SSCM and CE. Their findings highlight the importance of Industry 4.0 technologies in improving supply chain efficiency and fostering CE adoption, including input management, waste treatment, product life extension, and preservation. Additionally, some studies indicate that SMEs lack clear roadmaps for integrating SSCM and CE, [54], [55]. Insights from in-depth interviews with SME leaders suggest that companies often lack the necessary knowledge and guidance to develop effective plans. This knowledge gap has resulted in limited stakeholder collaboration within sustainable supply chains, [56].

Although SSCM is believed to play a vital role in driving CE practices, empirical evidence supporting this relationship remains scarce. Existing research is largely theoretical or case-based, lacking robust quantitative data to confirm the impact of SSCM on CE adoption. Therefore, further empirical research is needed to measure this relationship, providing a strong scientific foundation for sustainable business strategies. Considering these arguments, we present the following hypothesis:
H6: CEP has a positive impact on SSCM.

The conceptual model was presented above (Fig. 1)

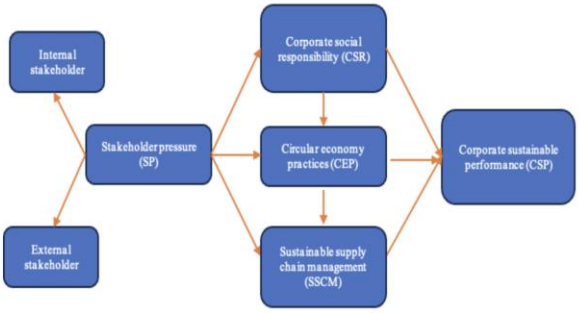

Fig. 1: Conceptual model

2.8 Summary Table of Relevant Studies

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(Appendix) provides a concise summary of previous studies related to stakeholder pressure and corporate sustainable performance in different contexts. It highlights key research findings, research context, methodology, and limitations. Previous studies on stakeholder pressure and sustainable performance have many limitations, primarily due to constraints related to the research context, lack of clear theoretical foundations, incomplete research methods, and insufficient consideration of the various aspects of sustainable performance. Many studies focus only on one or two aspects, such as financial or environmental factors, without comprehensively assessing corporate performance in a sustainable context. Furthermore, the mediating role of CSR and CEP has not been clarified, leading to gaps in understanding the mechanisms by which stakeholder pressure impacts sustainable performance. Therefore, this study aims to address these limitations by developing an integrated model, utilizing a quantitative research methodology.

3 Methodology

3.1 Sampling and Data Collection

This research was conducted in Vietnam, an emerging market in Asia, [12]. We employed a randomized sampling approach. According to Vietnamese law, SMEs are defined as enterprises with fewer than 250 people. The target sample for this study consists of small and medium-sized manufacturing enterprises in Vietnam for several reasons. First, these enterprises play an important role in Vietnam's economic growth. According to statistics, they contribute up to 45% of GDP growth in Vietnam, [6]. Second, manufacturing enterprises

are also a major contributor to environmental pollution and ecosystem imbalances, [57]. This may be due to their limited awareness of corporate social responsibility (CSR), circular economy practices (CEP), and sustainable supply chain management (SSCM) in achieving sustainability. Therefore, this research evaluates the effect of stakeholder pressure (SP) on corporate sustainable performance (CSP) through the moderating roles of CSR, CEP, and SSCM.

Data were collected from business owners, middle managers, and experts in the manufacturing sector. To ensure data reliability, we implemented several criteria during data collection. First, participating manufacturing SMEs must have been in operation for at least three years to ensure business stability. Second, respondents must be either business owners or middle managers with at least two years of employment at the same company, ensuring that they have adequate knowledge of their enterprise. The survey questionnaires were distributed randomly to respondents via an online platform. To enhance the response rate, each survey questionnaire was furnished with a cover letter explaining the significance of the study and key concepts. We also assured respondents that all data collected would be used solely for research purposes and kept confidential. Data collection took place from August 2024 to January 2025. At the end of the process, we received 631 responses, of which 524 were valid for analysis, accounting for approximately 83%. The summary statistics of the research sample are presented in

Table 1. To the best of our knowledge, these characteristics are quite good to represent for the samples.

The sample consists of 524 respondents, with a higher proportion of males (61.64%) compared to females (38.36%). Regarding age distribution, the majority fall within the 41 to 50 age group (56.87%), followed by 31 to 40 years (27.29%), above 50 years (15.08%), and a small portion aged 20 to 30 years (2.48%). Regarding company size, 40.46% of respondents work in small-sized enterprises, while 59.54% belong to medium-sized enterprises, aligning with the study's focus on SMEs. In the manufacturing sector, most of the companies surveyed operate in the supporting industry, accounting for 30.34%. Additionally, employee management frequency varies among respondents, with 31.49% managing employees about half the time, 26.15% most of the time, 16.6% rarely, 14.12% sometimes, and only 11.64% always. This distribution indicates that respondents are predominantly middle-aged professionals working in medium-sized enterprises, with differing levels of engagement in employee management.

Table 1. Characteristics of sample

Characteristics	Frequency	Percentage (%)
N = 524		
Gender		
Male	323	61.64
Female	201	38.36
Age		
20 to 30	13	2.48
31 to 40	143	27.29
41 to 50	298	56.87
Above 50	79	15.08
Company size		
Small-sized	212	40.46
Medium-sized	312	59.54
Industry		
Agriculture	64	12.21
Mechanical Engineering	94	19.93
Supporting Industry	159	30.34
Machine Manufacturing	94	17.93
Other	113	21.56
Frequency of employee management		
Always	61	11.64
Most of the time	137	26.15
About half the time	165	31.49
Sometimes	74	14.12
Rarely	87	16.6

Sources: Authors

3.2 Measurement

Since our research follows a quantitative framework, the development of measurement scales is crucial. To ensure reliability, the scales were derived from prior studies. Additionally, minor modifications were made to align them with the study's context and objectives. The "Stakeholder Pressure" scale consists of seven observed variables, which are evaluated through internal and external stakeholders adapted from [58]. The "Corporate Social Responsibility" scale includes seven observed variables adapted from [12], [59]. The "Circular Economy Practices" scale comprises seven items adapted from [60] The "Sustainable Supply Chain Management" scale consists of six items derived from [28], [61]. The "Corporate

Sustainable Performance" scale includes six items adapted from [14], [62].

The five-point Likert scale, with values ranging from "strongly disagree" to "strongly agree," allows for nuanced responses, improving measurement accuracy. Two professional translators validate each other for consistency and to minimize misinterpretation. This approach heightens the reliability of the data. Additionally, the Likert scale finds widespread use in social science research, providing a standard framework for the measurement of attitudes and perceptions. By maintaining all the constructs on the same level, the research provides a guarantee that respondents can record their views with precision. Furthermore, expert translation helps to limit possible biases that may originate from language variations so that the scales can preserve the intended meaning. This degree of methodological robustness increases the quality and consistency of the research findings.

3.3 Data Analyst

Variance-based structural equation modeling (SEM) method was employed in the study with Smart-PLS being the main analysis tool. The method is commonly applied in SEM settings, and path analysis was employed to establish the supposed relations. PLS-SEM is specifically appropriate for explanatory studies and is thus an apt selection for the present study, [63]. Structural equation modeling (SEM) consists of two main parts: the measurement model and the structural model. The measurement model tests the validity and reliability of the constructs, and the structural model tests the relationships among variables. These tests validate the data integrity and confirm the consistency of the structural model.

3.4 Common Method Bias

Before analyzing the data, we conducted a test for common method bias. Respondents were first informed via a cover letter that their responses would kept confidential and be used only for research purposes. Additionally, the survey questions were presented in a randomized order to minimize the likelihood of participants recognizing potential correlations between them. We use Harman's single-factor test to detect common method bias, performing an EFA without rotation to drive the factor. The findings showed that a one-factor explained only 21.5% of the total variance, indicating that common method bias was not a major concern in this study.

4 Result

4.1 Measurement Model

To measure SP, CSR, SSCM, and CSP, the constructs used were evaluated for their reliability and validity through a measurement model. Table 6 (Appendix) presents key indicators used for assessing these properties. Specifically, Cronbach's Alpha values and composite reliability (CR) for all constructs are the recommended threshold of 0.7, confirming the internal consistency and reliability of the measurement scales, [64].

For convergent validity, the results indicate that all factor loadings surpass 0.7, and the AVE for each construct is greater than 0.5, meeting the accepted thresholds, [65]. These results confirm that the items effectively measure their intended constructs, thereby supporting convergent validity.

In terms of discriminant validity, [65], suggests that it ensures constructs are sufficiently distinct from one another. Based on [66], criterion, discriminant validity is established when the square root of each construct's AVE is greater than its correlations with other constructs. Table 2 provides these values, which satisfy the required conditions, confirming that discriminant validity is achieved.

Table 2. Fornell-Larcker Criterion

	CEP	CSP	CSR	SP	SSCM
CEP	0.775				
CSP	0.661	0.829			
CSR	0.336	0.366	0.798		
SP	0.452	0.629	0.216	0.806	
SSCM	0.433	0.591	0.324	0.366	0.803

Source: Authors

4.2 Structural Model

After evaluating reliability, convergent validity, and discriminant validity, the study applied the bootstrapping technique with 1,000 samples to test the research hypotheses. We evaluated all of the proposed hypotheses (Table 3 and Fig. 2), all of which were confirmed through quantitative analysis.

The model testing results indicate that stakeholder pressure (SP) has a significant impact on corporate social responsibility (CSR) ($\beta = 0.216$, $t = 4.713$, $f^2 = 0.049$), circular economy practices (CEP) ($\beta = 0.398$, $t = 10.026$, $f^2 = 0.205$), and sustainable supply chain management (SSCM) ($\beta = 0.214$, $t = 5.136$, $f^2 = 0.047$). This highlights that stakeholder pressure can drive businesses to implement sustainable strategies, particularly through circular economy practices and sustainable

supply chain management. The relationship between CSR and corporate sustainable performance (CSP) is statistically significant (p = 0.007), and the effect size (f^2) is 0.016, indicating that the impact of CSR on CSP is accepted. CEP has the strongest impact on CSP (β = 0.476, t = 15.221, f^2 = 0.395), demonstrating that the adoption of circular economy practices can significantly contribute to corporate sustainable performance. Additionally, SSCM also has a considerable effect on CSP (β = 0.355, t = 10.743, f^2 = 0.221), emphasizing the importance of sustainable supply chain management. Furthermore, CSR has a significant impact on CEP (β = 0.250, t = 6.410, f^2 = 0.081), and CEP, in turn, significantly influences SSCM (β = 0.336, t = 8.731, f^2 = 0.116). This reflects an indirect mechanism in which CSR can affect CSP through CEP and SSCM.

Table 3. Hypotheses testing

Relationship	β	SD	t	ρ	f^2	Decision
SP → CSR	0.216	0.046	4.713	0.000	0.049	Accepted
SP → CEP	0.398	0.040	10.026	0.000	0.205	Accepted
SP → SSCM	0.214	0.042	5.136	0.000	0.047	Accepted
CSR → CSP	0.091	0.034	2.694	0.007	0.016	Accepted
CEP → CSP	0.476	0.031	15.221	0.000	0.395	Accepted
SSCM → CSP	0.355	0.033	10.743	0.000	0.221	Accepted
CSR → CEP	0.250	0.039	6.410	0.000	0.081	Accepted
CEP → SSCM	0.336	0.039	8.731	0.000	0.116	Accepted

Source: Authors

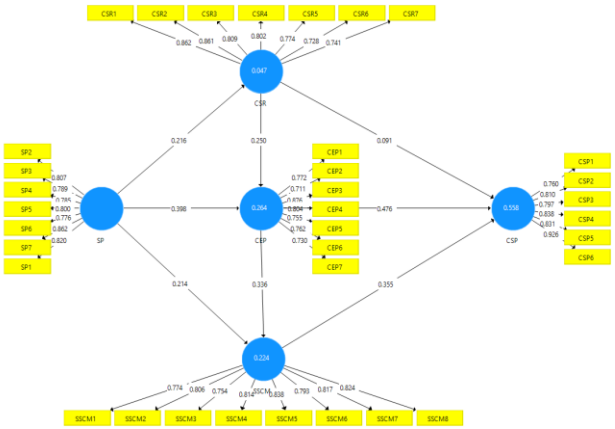

Fig. 2: SEM

4.3 Mediation Link Test

The evaluation of mediation relationships is conducted through the values of β, t, and p (Table 4). A relationship is considered significant when the p-value is less than 0.001. Table 4 shows that the relationship between SP, CSR, and CSP has a p-value of 0.058, which is greater than 0.001. This indicates that although SP has a positive relationship with CSR (Table 3), CSR does not mediate the relationship between SP and CSP. The remaining moderated relationships all show p-values at an acceptable level. Therefore, the remaining hypotheses are supported.

Table 4. Mediation link

Relationship	β	SD	t	ρ	Decision
SP → CSR → CSP	0.020	0.010	1.901	0.058	Rejected
SP → CEP → CSP	0.190	0.027	7.051	0.000	Accepted
SP → SSCM → CSP	0.076	0.019	4.098	0.000	Accepted
CSR → CEP → SSCM	0.084	0.017	5.067	0.000	Accepted

Source: Authors

5 Discussion and Implication

5.1 Discussion

The study provides important empirical evidence by testing research hypotheses using SEM.

First, SP positively effects on CSP. This result is confirmed by several studies, including [9], [16], [18]. This suggests that stakeholders such as governments, competitors, business leaders, and customers have a strong influence on a company's sustainable performance. Businesses tend to adopt sustainable development practices to meet market demands and government policies while addressing environmental and social issues. This finding indicates that sustainability strategies have been well integrated into the overall development strategy of manufacturing SMEs in Vietnam. This result highlights the significance of stakeholder pressure in shaping corporate strategies, especially in the context of increasing sustainability requirements from investors and consumers. In addition, it highlights that embracing sustainability is essential for businesses aiming to maintain lasting competitiveness.

Second, the empirical results show that SP strongly influences CSR, and CSR impact on CSP. Stakeholders have driven companies to take more socially responsible actions and corporate sustainable performance. This shows that profit is no longer the sole objective; businesses now consider environmental and social goals as well. This finding is supported by several studies, including [34], [35], [36]. However, CSR does not play an effective mediator in the link between SP and CSP. This contradicts the study's expectations. This can be explained by several reasons. First, businesses often overlook the role of CSR in

leveraging pressure from stakeholders to achieve sustainable performance. This limitation occurs when business owners or managers lack awareness of CSR or lack the necessary resources to implement it. In terms of data analysis, the relationship between CSR and CSP has a relatively small f-square coefficient. This somewhat affects the mediating role of CSR. This suggests the need for further research in the context of Vietnam to validate the relationship above.

Third, SP positively impacts on CEP. This result is confirmed by several studies, including, [3], [20]. Stakeholders have encouraged companies to apply circular economy practices, including designing products in accordance with principles of circular economy (reduce, reuse, recycle). CEP also plays a role in promoting corporate sustainable performance (CSP). This indicates that CE plays a mediating role in the relationship between SP and CSP. The role of CE has been confirmed in the context of emerging markets, particularly in Vietnam. Businesses have learned to leverage the strengths of the CE model to transform pressures from SP into drivers for sustainable performance. This result is supported by previous studies such as [3], [14].

Fourth, SSCM moderates the link between SP and CSP. This is reinforced by the positive relationship of SP between SSCM and CSP. Stakeholder pressure significantly drives the implementation of SSCM. This action simultaneously promotes the sustainable performance of SMEs in the manufacturing sector in Vietnam. In addition, small and medium-sized enterprises (SMEs) in Vietnam are increasingly recognizing the importance of implementing sustainable strategies within their supply chains The finding is supported by research such as [21], [44].

Finally, the mixed mediating role of CSR, CEP, and SSCM was also tested. The experimental results show that CSR affects CE actions, and the adoption of CE improves the sustainable supply chain of the company. To be sustainable, firms do not just require using stakeholder pressure but also need to have a strategy that integrates sustainable actions. That is, firms require a general sustainable action strategy. This finding is supported by studies such as [46], [47], [51].

5.2 Theoretical Implication

The research findings have made significant theoretical contributions to the theory. Stakeholder Theory (ST), Dynamic Capabilities Theory (DCT), and the Natural-Resources-Based View (NRBV).

First, our empirical findings emphasize the pivotal role of stakeholders in driving sustainable behaviors among small and medium-sized enterprises (SMEs) in Vietnam. This is entirely aligned with the principles of Stakeholder Theory, which asserts that firms respond to stakeholder expectations to secure legitimacy and performance gains, [67]. Notably, our study extends the applicability of Stakeholder Theory to the emerging market context, illustrating that in resource-constrained SMEs, stakeholder expectations are operationalized into sustainable performance through the adoption of specific initiatives such as Circular Economy practices (CE), Sustainable Supply Chain Management (SSCM), and Corporate Social Responsibility (CSR).

Secondly, our model has helped to reinforce the dynamic capabilities (DC) theory in the context of sustainable development. Our model has demonstrated the mediating role of CEP and SSCM as the dynamic capabilities of firms. In other words, SMEs in the manufacturing sector that implement recycling activities, waste reduction, and focus on environmental and social issues are better positioned to leverage external opportunities for long-term sustainable growth.

The data we collected strongly supports the Natural-Resource-Based View (NRBV) framework. It is posited that firms achieve competitive advantage by deploying environmentally responsible resource management strategies. Along those lines, our research shows that circular economy practices those designed to eliminate waste and enhance resource efficiency are directly correlated with sustainable performance improvements. The results table suggests that CEP had the largest effect size on CSP. This serves as evidence for the NRBV: emission minimization and material recycling are beneficial from both environmental and economic standpoints. Mitigating the scope of pollution and wreckage provides economic and ecological sustainability. Furthermore, our research strengthens these claims by demonstrating that proactive vulnerability in the supply chain mitigates risk by creating legitimacy and resiliency within the business, thereby improving overall performance. To summarize, circular and supply chain capabilities serve as inimitable and unparalleled resources that - from NRBV's view - satisfy stakeholder expectations, thereby deriving sustained competitive advantage.

5.3 Management Implication

Based on the conceptual model, to enhance corporate sustainable performance (CSP),

businesses need to optimize key mediating factors, including corporate social responsibility (CSR), circular economy practices (CEP), and sustainable supply chain management (SSCM), while effectively leveraging stakeholder pressure (SP). These elements are interconnected, meaning that improving one factor can create a ripple effect that strengthens the others. Therefore, companies must adopt a holistic approach, integrating these aspects into their long-term business strategies rather than treating them as separate initiatives.

Managers must actively gather and incorporate stakeholder feedback rather than perceiving external pressure as a necessary constraint. For example, SMEs can establish formal mechanisms (advisory boards, regular surveys, or consultations) with customers, regulators, local community members, and investors to learn about sustainability expectations. Incorporating these inputs into the firm's strategic vision – e.g., by making formal commitments on environmental targets – ensures that external expectations become clear operating goals. Because circular economy activities made the highest contribution to performance, managers should prioritize activities that minimize the use of resources and waste.

Practical actions are to conduct a materials-flow audit to trace outflows of waste, product redesign for durability or modularity, and implement take-back or recycling programs. For example, an SME can switch to recycled raw materials, implement remanufacturing of returned products, or redesign packaging to be reused. These activities not only save costs (via the reuse of inputs) but also improve sustainability performance metrics directly. Even minor 3R (reduce, reuse, recycle) activities can achieve significant performance gains, as our evidence indicates. Managers can therefore invest and set targets (e.g., percentage of materials recycled) for circular activities, which become a routine part of operations. Managers would need to collaborate closely with logistics partners and suppliers to push sustainability along the value chain. This could involve imposing environmental specifications on purchase orders, offering green-producing training to vendors, and utilizing digital technologies (such as blockchain or AI-tracking) to drive material transparency.

Through the construction of SSCM competencies such as tracing the quality of material, route optimization to reduce fuel usage, and selecting green-certified vendors, firms can substantially improve overall sustainable performance. Our evidence indicates that SSCM has a substantial effect on CSP, and thus such activities are valuable in environmental terms as well as in cost savings. In practice, an SME can verify the carbon footprint of its top suppliers, collaborate on energy-efficient transport, or collaborate with subcontractors to fit closed-loop systems. Supply-chain activities of this kind also improve relations and reputation, again in accordance with what stakeholders anticipate. Rather than applying CSR as an isolated philanthropic activity, businesses should incorporate it into core processes that facilitate circular and supply-chain goals. For instance, CSR budgets and activities can be utilized to fund employee training in waste reduction, sponsor community recycling programs that also train local staff, or support supplier certifications.

In our study, CSR influenced performance primarily through enabling CEP and SSCM. Managers thus have to ensure that CSR activities possess clear sustainability features (such as involving the community in recycling or training employees in sustainability) that complement business operations. An effective CSR strategy – with clear integration in product development and supply-chain plans – will have greater results. CSR and sustainability reports made freely available can also facilitate stakeholder trust and stimulate internal coordination. Managers need to identify and monitor specific sustainability KPIs (such as carbon per unit, share of renewable inputs, or recycling rates) in order to measure progress. Linking these KPIs to rewards (such as making manager bonuses depend on waste-reduction targets) will focus the organization on sustainable results. In addition, obtaining globally recognized certifications and involvement in global initiatives is an important message to stakeholders: for instance, ISO 14001 (environmental management) certification or membership in the UN Global Compact can potentially establish a company's brand and reputation. Such certifications not only enhance trustworthiness to customers and regulators but can also boost access to green funding. As our results show, higher sustainability performance (measured by metrics and standards) makes firms more attractive to investors and can grant a competitive edge.

6 Conclusion and Further Research

The research findings have established a positive link between stakeholder pressure (SP) and corporate sustainable performance (CSP), with the moderating influence of the impacts of corporate social responsibility (CSR), circular economy practices (CEP), and sustainable supply chain

management (SSCM) in small and medium-sized manufacturing firms in emerging economies. The study offers empirical evidence on the mechanisms by which SP can lead to CSP, as well as the moderating effects of CEP and SSCM on this link. The results demonstrate that firms require a comprehensive approach so that they attain long-term sustainable development. Furthermore, the research confirms and extends critical theoretical concepts such as Stakeholder Theory, Dynamic Capabilities Theory, and the Natural Resource-Based View. To this extent, it offers an important addition to the existing literature concerning SP and CSP.

However, the study also has certain limitations. First, it was conducted in Vietnam, which may limit its generalizability. To address this issue, further research should be conducted in different contexts to validate this model. Second, this study only examines the mediating roles of CSR, CEP, and SSCM. Additionally, CSR does not play a mediating role between SP and SCP in the study. Therefore, future research could explore the mediating or moderating effects of other factors in the relationship between SP and CSP.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

The authors wrote, reviewed, and edited the content as needed and they have not utilized artificial intelligence (AI) tools. The authors take full responsibility for the content of the publication.

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Conflict of Interest

The authors have no conflicts of interest to declare.

APPENDIX

Table 5. Relevant studies

Source	Research context	Theory	Methodology	Findings	Limitation
[9]	China	Not clear	Quantitative	SP has an indirect impact on CSP.	Research context, Convenient sampling.
[16]	Ghanaian	Stakeholder theory, institutional Theory, and natural resource-based view	Quantitative	SP has a direct impact on financial and environmental performance.	Research context, Not fully considering all aspects of sustainable performance.
[18]	UK	Stakeholder theory	Quantitative	SP has a direct/indirect impact on environmental performance.	Research context, Not fully considering all aspects of sustainable performance.
[12]	Vietnam	Stakeholder theory, RBV theory, Social identity theory	Quantitative	CSR has a direct/indirect impact on firms' performance.	Not considering business performance in a sustainable context.
[31]	N/A	Not clear	Qualitative	Stakeholder orientation has an impact on CSR.	Lacking empirical evidence
[34]	Pakistan	Stakeholder theory	Quantitative	Stakeholders have a positive impact on CSP through CSR.	Research context
[35]	South African	Legitimacy theory, Stakeholder theory, Media Agenda-Setting Theory	Qualitative	SP has an impact on social performance.	Research context, Not considering business performance in a sustainable context.
[10]	China	Not clear	Quantitative	SP has a positive impact on social performance.	Research context, Not considering business performance in a sustainable context, Theory
[37]	N/A	Not clear	Qualitative	CSR has a positive impact on financial performance.	Research methodology, Not considering business performance in a sustainable context, Theory
[19]	N/A	Not clear	Qualitative	CSR has an impact on sustainability and the environment.	Research methodology, Not considering business performance in a sustainable context, Theory
[20]	Mexico	Not clear	Quantitative	SP has a positive impact on environmental performance through CEP.	Research context
[38]	N/A	Not clear	Quantitative	SP has an indirect impact on CEP.	Research context, Theory
[39]	English, Swedish	Not clear	Qualitative	SP has a significant impact on CEP.	Research context
[21]	N/A	Resources dependence theory	Quantitative	SP has a positive impact on SCP through SSCM.	Research context
[44]	Pakistan	Not clear	Quantitative	SP has a positive impact on financial performance through SSCM.	Research context, Theory

Source	Research context	Theory	Methodology	Findings	Limitation
[45]	Pakistan	Not clear	Qualitative	CSR has a positive impact on CEP.	Research context, Not considering business performance in a sustainable context, Theory
[48]	EU	Not clear	Qualitative	CEP has a positive impact on SSCM.	Research context, Research methodology
[54]	N/A	Not clear	Qualitative	SP has an indirect impact on CSP.	Research context, Research methodology

Source: Authors

Table 6. Reliability and converge validity.

Variables	Items	Outer Loadings	Cronbach's Alpha	CR	AVE
Stakeholder pressure (SP)	SP1	0.820	0.910	0.928	0.650
	SP2	0.807			
	SP3	0.789			
	SP4	0.785			
	SP5	0.800			
	SP6	0.776			
	SP7	0.862			
Corporate social responsibility (CSR)	CSR1	0.862	0.904	0.924	0.637
	CSR2	0.861			
	CSR3	0.809			
	CSR4	0.802			
	CSR5	0.774			
	CSR6	0.728			
	CSR7	0.741			
Circular economy practices (CEP)	CEP1	0.772	0.888	0.913	0.600
	CEP2	0.711			
	CEP3	0.876			
	CEP4	0.804			
	CEP5	0.755			
	CEP6	0.762			
	CEP7	0.730			
Sustainable supply chain management (SSCM)	SSCM1	0.774	0.922	0.935	0.645
	SSCM2	0.806			
	SSCM3	0.754			
	SSCM4	0.814			
	SSCM5	0.838			
	SSCM6	0.793			
	SSCM7	0.817			
	SSCM8	0.824			
Corporate sustainable performance (CSP)	CSP1	0.760	0.908	0.929	0.687
	CSP2	0.810			
	CSP3	0.797			
	CSP4	0.838			
	CSP5	0.831			
	CSP6	0.926			

Source: Authors