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Buyer's Sustainability Orientation and Supplier Development: The Effect of Stakeholder Commitment

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Abstract

Purpose: The study contributes to the growing body of literature on sustainable supply chain management by exploring the relationship between buyer sustainability orientation and supplier development, with a focus on the moderating role of stakeholder commitment. It addresses gaps in the existing literature, particularly in understanding how stakeholder engagement influences sustainability initiatives within supply chains.

Methodology: The study employs an explanatory research design. The study focuses on professionals in procurement, supply chain management, sustainability management, and supplier development across industries with active buyer-supplier relationships. Data was collected using an online survey administered through platforms such as Google Forms to obtain a sample size of 280. The data analysis was conducted using SPSS (Statistical Package for the Social Sciences) and AMOS (Analysis of Moment Structures). These tools are well-suited for analyzing quantitative data and testing complex relationships among variables.

Findings: The study revealed a positive relationship between Buyer's Sustainability Orientation (BSO) and Supplier Development (SPD), emphasizing the importance of sustainability practices in procurement decisions and supplier performance improvement. Stakeholder commitment has a positive and significant influence on supplier development. Additionally, Stakeholder Commitment (SHC) was found to significantly moderate this relationship, enhancing the impact of BSO on SPD.

Unique Contribution to Theory, Practice and Policy: The study introduces a nuanced perspective, showing that high stakeholder commitment can shift supplier development from a compliance-based model to a proactive collaboration model, ultimately leading to long-term sustainability performance.Buyers can leverage stakeholder commitment to align suppliers with industry-wide sustainability goals, fostering joint investments in green technology, ethical sourcing, and sustainable logistics.The study highlights the need for governments and industry associations to introduce tax benefits, subsidies, or certification schemes to encourage stakeholder commitment in buyer-supplier sustainability initiatives.The findings support the development of PPPs that integrate buyer sustainability orientation with supplier development through shared investments, training programs, and sustainability reporting standards.The study recommends that organizations should prioritize building long-term, collaborative relationships with stakeholders to ensure the alignment of sustainability objectives across

the supply chain. Procurement managers should integrate sustainability considerations into supplier selection and development processes, ensuring that suppliers are equipped to meet environmental and social sustainability standards.

Keywords: Buyer's Sustainability Orientation, Supplier Development, Stakeholder Commitment

1.1 Background to the Study

The interplay between a buyer's sustainability orientation and supplier development has become a critical area of research, particularly in the context of achieving sustainable supply chain performance. Sustainability orientation refers to a buyer's commitment to integrating environmental, social, and economic sustainability principles into procurement and operational strategies (Kumar et al., 2020). As organizations face mounting pressure from consumers, governments, and advocacy groups to adopt sustainable practices, fostering a collaborative relationship with suppliers becomes essential. Supplier development, characterized by activities like training, technical assistance, and joint planning, plays a significant role in enabling suppliers to meet sustainability expectations (Yawar &Seuring, 2020). This dynamic relationship is further influenced by stakeholder commitment, which underscores the dedication of various stakeholders both internal and external to achieving sustainability objectives. Buyers with a strong sustainability orientation prioritize sourcing from suppliers that align with their environmental and ethical standards, ensuring that operations throughout the supply chain adhere to these principles (Miemczyk et al., 2021). Such orientation not only minimizes reputational risks but also contributes to long-term competitive advantages by meeting stakeholder demands. However, achieving this requires deliberate supplier development efforts. Many suppliers, particularly in emerging markets, lack the resources or expertise to adopt sustainable practices independently (Govindan et al., 2021). Through supplier development initiatives such as training programs, knowledge sharing, and financial support, buyers empower their suppliers to align with sustainability goals, enhancing overall supply chain resilience and efficiency.

The role of stakeholder commitment in this relationship cannot be overlooked. Stakeholders, including customers, regulators, investors, and non-governmental organizations, increasingly demand transparency and accountability in supply chain operations (Touboulic& Walker, 2019). Their commitment to sustainability drives buyers to implement robust supplier development programs and motivates suppliers to actively participate in such initiatives. For instance, regulatory requirements regarding carbon emissions or labor standards compel buyers to work closely with suppliers to ensure compliance. Similarly, consumer demand for ethically sourced products incentivizes both buyers and suppliers to prioritize sustainability (Walker et al., 2020). Stakeholder theory provides a strong theoretical foundation for understanding this relationship. According to the theory, the success of an organization is closely tied to its ability to address the needs and expectations of its stakeholders (Freeman et al., 2020). Buyers with a sustainability orientation act as mediators between stakeholder demands and supplier capabilities. Their efforts to develop suppliers are often guided by stakeholder expectations, making stakeholder commitment a key driver in the sustainability agenda. This commitment fosters a culture of collaboration, innovation, and accountability across the supply chain, ensuring that sustainability goals are met effectively.

Empirical studies further underscore the importance of this relationship. For instance, Sarkis et al. (2022) highlight that supplier development programs significantly enhance supplier compliance with

sustainability standards, particularly when buyers demonstrate strong sustainability leadership. Similarly, Chen et al. (2023) found that stakeholder engagement strengthens the effectiveness of supplier development initiatives, leading to improved environmental and social outcomes. However, challenges such as resource constraints, cultural differences, and varying levels of stakeholder commitment often hinder the success of such initiatives (Tachizawa et al., 2021). Given the growing emphasis on sustainable supply chains, understanding the relationship between a buyer's sustainability orientation and supplier development becomes imperative. Furthermore, examining the role of stakeholder commitment offers valuable insights into how collaborative efforts can overcome challenges and drive sustainable outcomes. This study seeks to contribute to the body of knowledge by exploring these interdependencies, providing both theoretical and practical implications for organizations striving to achieve sustainability in their supply chains.

1.2 Problem Statement

Sustainability in supply chain management has gained significant attention in recent years as organizations strive to balance economic performance with environmental and social responsibility. A buyer's sustainability orientation plays a pivotal role in shaping supply chain practices, particularly in fostering supplier development. Sustainability-oriented buyers seek to ensure that their suppliers adopt practices that align with environmental conservation, ethical labor standards, and overall sustainability principles (Kumar et al., 2020). However, the effective implementation of these practices remains a challenge, especially in contexts where suppliers face resource constraints or lack the technical expertise to meet sustainability expectations. Despite growing interest in the relationship between a buyer's sustainability orientation and supplier development, existing research highlights critical gaps. While some studies emphasize the importance of buyer-driven initiatives such as training and resource provision, less attention has been paid to the contextual factors that influence the success of these initiatives (Miemczyk et al., 2021). One such factor is stakeholder commitment, which encompasses the level of engagement and support from various stakeholders, including consumers, regulators, investors, and non-governmental organizations. Stakeholders exert significant influence on the sustainability priorities of buyers and suppliers, yet their role in moderating the relationship between buyer sustainability orientation and supplier development remains underexplored (Chen et al., 2023).

In practice, many buyers encounter difficulties in translating sustainability orientation into actionable supplier development programs. For instance, suppliers in emerging markets often face structural and financial limitations that prevent them from adopting sustainable practices (Govindan et al., 2021). This misalignment between buyer expectations and supplier capabilities can hinder the overall effectiveness of supply chain sustainability efforts. Furthermore, the absence of strong stakeholder commitment exacerbates these challenges, as suppliers may lack external pressure or incentives to prioritize sustainability. Empirical evidence suggests that stakeholder engagement strengthens the success of supplier development initiatives, but the mechanisms through which this occurs are not well understood (Tachizawa et al., 2021). From a theoretical perspective, the interaction between buyer sustainability orientation, supplier development, and stakeholder commitment presents a complex dynamic. Stakeholder theory posits that organizations must address the needs and expectations of various stakeholders to achieve long-term success (Freeman et al., 2020). In the context of supply chains, this implies that buyers must not only drive sustainability through direct supplier engagement but also leverage stakeholder commitment to amplify these efforts. However, there is limited empirical research

examining how stakeholder commitment moderates the relationship between buyer sustainability orientation and supplier development outcomes (Sarkis et al., 2022).

Given the critical importance of sustainable supply chains, addressing these gaps is both timely and necessary. Understanding the role of stakeholder commitment in enhancing supplier development efforts provides valuable insights into how buyers can overcome barriers and achieve sustainability objectives. Moreover, such research has practical implications for policymakers and industry practitioners aiming to promote sustainable supply chain practices. By investigating the interplay between buyer sustainability orientation, supplier development, and stakeholder commitment, this study seeks to fill an important gap in the literature and contribute to the advancement of sustainable supply chain management.

2.1 Buyer's Sustainability Orientation

Buyer's Sustainability Orientation involves an individual or organization's commitment to considering sustainability criteria environmental, social, and economic when making purchasing decisions. Buyers with strong sustainability orientations prioritize products that minimize negative environmental impacts, such as reduced carbon footprints, energy efficiency, and waste management. According to Ghadge et al. (2020), environmentally oriented buyers emphasize product lifecycle sustainability, favoring suppliers that engage in eco-friendly practices like recycling and the use of renewable resources. Social Sustainability dimension involves a buyer's concern for social justice and human welfare, such as fair labor practices, ethical sourcing, and community welfare. As Bansal et al. (2021) note, buyers are increasingly driven by social sustainability, seeking suppliers and products that align with values like fair trade and ethical labor standards. This trend is particularly strong in the apparel and food industries, where consumers demand transparency regarding working conditions and sourcing. Buyers also factor in the economic dimension of sustainability, which focuses on long-term profitability and the efficient use of resources. Research by Silva et al. (2022) suggests that buyers with an economic sustainability orientation balance cost-effectiveness with sustainable practices, favoring suppliers who provide long-term value while minimizing resource depletion. Buyer's Sustainability Orientation plays a crucial role in shaping the sustainability of supply chains. Buyers' demand for sustainable products exerts pressure on suppliers to implement sustainable practices, fostering greater transparency, innovation, and ethical behavior across the supply chain. According to Kumar et al. (2019), BSO positively influences supply chain sustainability by promoting green procurement, ethical sourcing, and supplier partnerships that prioritize sustainability goals.

Buyers with a strong sustainability orientation often collaborate with suppliers to develop sustainable products and processes. Carter and Rogers (2021) highlight that buyer-supplier collaborations driven by sustainability concerns enhance supply chain resilience, reduce environmental risks, and improve supplier performance. These collaborations may include initiatives like joint investments in sustainable technologies or long-term contracts that reward suppliers for adhering to sustainability standards. Buyers increasingly seek suppliers that hold sustainability certifications, such as ISO 14001 or Fair-Trade certifications. These certifications serve as indicators of a supplier's commitment to sustainability, and buyers use them as benchmarks in their decision-making. Research by Rodríguez et al. (2023) suggests that BSO has fueled a rise in certification adoption across industries, as suppliers aim to meet the growing demand for sustainable products. The rise of Buyer's Sustainability Orientation has also driven innovation in product development. Buyers demand products with lower environmental impacts, such as biodegradable packaging, energy-efficient appliances, and ethically sourced materials. Gupta et al.

(2020) argue that buyer-driven demand for sustainable products encourages companies to invest in research and development, leading to the introduction of new eco-friendly products and technologies that meet sustainability criteria. Buyer's Sustainability Orientation has become a pivotal factor in shaping sustainable supply chains, influencing supplier behavior, and driving market trends toward eco-friendly and socially responsible products. As buyers continue to prioritize environmental, social, and economic sustainability, companies are compelled to innovate, adopt sustainable practices, and achieve certifications that meet the growing demand for responsible consumption.

2.2 Supplier Development

Supplier development (SD) is a proactive approach by firms to improve the performance of their suppliers in terms of quality, cost, delivery, and sustainability. In an era where global supply chains are becoming increasingly complex and competitive, supplier development has emerged as a critical strategy for firms aiming to enhance supply chain resilience, competitiveness, and sustainability. The purpose of supplier development is to create a collaborative relationship between buyers and suppliers, leading to mutual benefits. Supplier development refers to activities undertaken by firms to improve their suppliers' performance and capabilities. Rehman et al. (2020) define it as the efforts made by a buying firm to upgrade supplier processes, quality management, and overall operational efficiency. Supplier development initiatives typically include joint problem-solving, technical support, training, investments in supplier infrastructure, and performance evaluations. A key feature of SD is the long-term collaboration between buyers and suppliers. Modi and Mabert (2021) suggest that the success of supplier development hinges on trust and transparency, as buyers need to share strategic insights and technological knowledge to drive meaningful improvements. These relationships go beyond mere transactional interactions, aiming to create a partnership where both parties contribute to innovation and cost reduction.

Supplier development practices involve a range of activities designed to enhance supplier performance. Lawson et al. (2021) categorize SD activities into two primary types: direct involvement and indirect involvement. Direct Involvement includes activities where the buying firm works closely with the supplier to implement specific changes. Examples include providing technical support, sharing process knowledge, and investing in supplier technologies. Li et al. (2019) found that direct involvement, such as conducting joint workshops or sending buyer employees to supplier facilities, leads to more immediate and impactful improvements in quality and efficiency.Indirect Involvement focuses on providing suppliers with the resources and incentives to enhance their performance independently. Wagner and Bode (2022) highlight those indirect mechanisms, such as financial incentives, long-term contracts, and feedback on performance, encourage suppliers to invest in upgrading their capabilities. While indirect involvement is less resource-intensive for the buying firm, it may require a longer timeframe for significant performance gains to be realized. Lean and Six Sigma practices have also gained popularity as tools for supplier development. According to Carter and Desmond (2020), firms increasingly engage suppliers in lean management and Six Sigma projects to streamline production processes, reduce waste, and improve product quality. Supplier development programs incorporating these methodologies have been shown to create a competitive advantage, as they drive continuous improvement and cost reduction.

2.3 Stakeholder Commitment

Stakeholder commitment refers to the willingness of individuals or groups to dedicate resources, time, and efforts toward achieving an organization's objectives. This concept is critical in modern management as organizations increasingly interact with diverse stakeholders such as customers, employees, suppliers, investors, and communities (Freeman et al., 2019). Stakeholder commitment is rooted in stakeholder theory, which emphasizes that firms must consider the interests and values of all stakeholders to ensure sustainable success (Harrison & Wicks, 2021). Stakeholder commitment plays a pivotal role in organizational performance. According to Brammer et al. (2020), organizations with strong stakeholder commitment experience improved financial and non-financial outcomes due to enhanced trust, loyalty, and cooperative relationships. Furthermore, the engagement of stakeholders in decision-making processes fosters a shared sense of ownership and accountability, leading to better alignment of organizational goals with stakeholder interests (Jones et al., 2021). In recent years, the role of stakeholder commitment in corporate social responsibility (CSR) and sustainability efforts has been highlighted. Harrison and Wicks (2021) argue that firms engaging stakeholders in CSR initiatives benefit from increased commitment, as stakeholders are more likely to support initiatives that align with their values and expectations. Similarly, organizations that commit to ethical practices and transparency are likely to garner higher levels of stakeholder trust and commitment (Kim et al., 2020).

2.4Stakeholder Theory

The primary theoretical foundation for stakeholder commitment is Stakeholder Theory, introduced by Freeman (1984), which posits that organizations are responsible not only to shareholders but to all stakeholders who affect or are affected by the company's operations. Stakeholder Theory emphasizes that companies should create value for a broad array of stakeholders, including customers, employees, suppliers, and communities, rather than focusing solely on profit maximization. Stakeholder commitment is seen as a critical aspect of ensuring that these diverse groups are engaged and their needs are met. The theory proposes that maintaining good relationships with stakeholders leads to organizational success, sustainability, and long-term value creation (Freeman et al., 2019). In relation to stakeholder commitment, this theory offers insight into why stakeholders remain committed to organizations that prioritize their interests. By acknowledging and incorporating stakeholder concerns, organizations foster loyalty, trust, and a sense of shared purpose, which strengthens commitment (Harrison & Wicks, 2021).

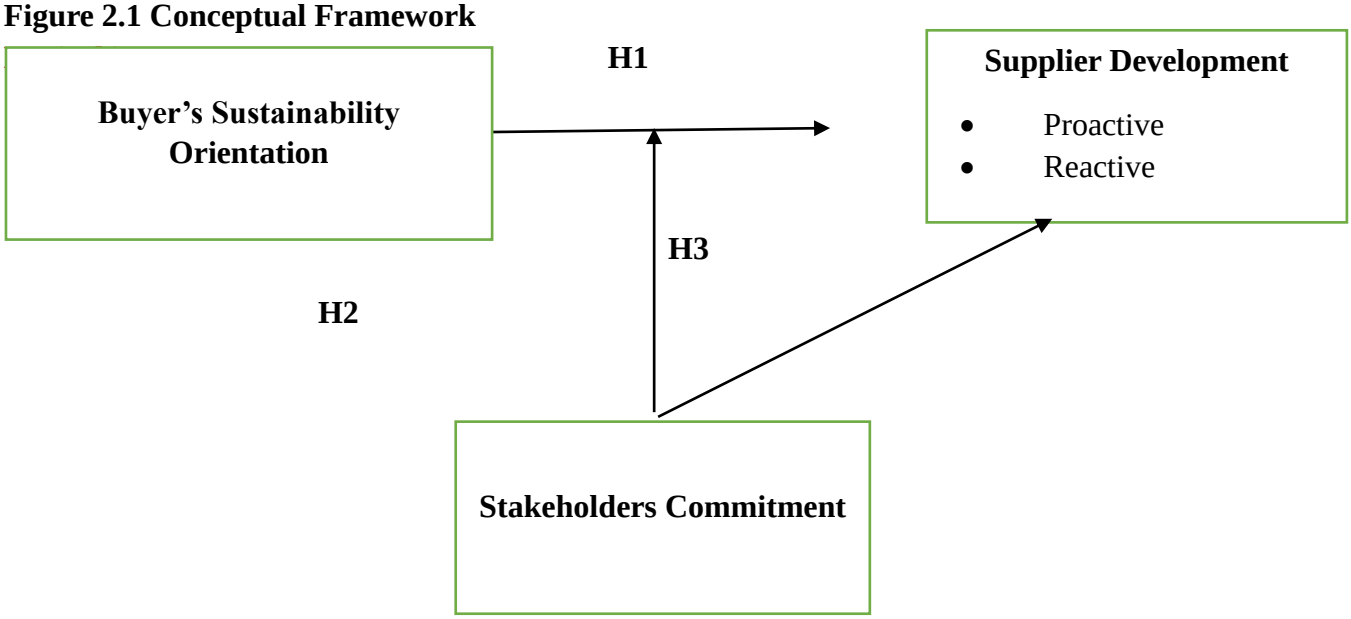
2.4.1 Application of Stakeholder Theory to the study

Stakeholder Theory offers a comprehensive framework for understanding the role of various stakeholders in shaping corporate strategies and outcomes. Initially proposed by Freeman (1984), this theory posits that organizations must address the interests of all stakeholders beyond just shareholders to achieve long-term success and sustainability. In the context of buyer-supplier relationships, Stakeholder Theory can illuminate the moderating effect of stakeholder commitment on the link between a buyer's sustainability orientation and supplier development. Buyer's sustainability orientation reflects a buyer's commitment to integrating environmental, social, and economic sustainability into their procurement processes (Carter & Rogers, 2008). According to Stakeholder Theory, this orientation necessitates consideration of the interests and expectations of various stakeholders, including suppliers, customers, and community members (Freeman, 1984). Stakeholder commitment involves the extent to which stakeholders are engaged and invested in the sustainability goals of an organization. This commitment

can significantly influence the effectiveness of a buyer's sustainability orientation in fostering supplier development (Mitchell et al., 1997). When stakeholders, such as suppliers, demonstrate high levels of commitment to sustainability, they are more likely to align their practices with the buyer's sustainability goals, thus enhancing the outcomes of supplier development initiatives (Eisenhardt, 1989).

Stakeholder Theory suggests that the relationship between a buyer's sustainability orientation and supplier development is moderated by stakeholder commitment. Specifically, the positive impact of a buyer's sustainability orientation on supplier development is amplified when suppliers are committed to sustainability (Agle et al., 1999). This means that a committed stakeholder is more likely to engage in development activities that align with the buyer's sustainability objectives, resulting in improved supplier performance and enhanced supply chain sustainability (Harrison et al., 2019). High levels of stakeholder commitment facilitate better collaboration between buyers and suppliers. According to Stakeholder Theory, committed stakeholders are more likely to participate actively in joint initiatives, share resources, and invest in mutual development (Freeman et al., 2010). This enhanced collaboration can lead to more effective implementation of sustainability practices and stronger supplier development outcomes (Carter & Rogers, 2008). For instance, research by Morsing and Schultz (2020) shows that stakeholder engagement improves the success of sustainability programs by fostering greater alignment and cooperation between buyers and suppliers. Recent studies underscore the relevance of Stakeholder Theory in this context. For example, Jones et al. (2021) found that stakeholder commitment positively moderates the relationship between a buyer's sustainability orientation and the effectiveness of supplier development programs. Similarly, Rupp et al. (2022) demonstrated that strong stakeholder commitment enhances the alignment of suppliers with buyers' sustainability goals, leading to improved supplier performance and sustainability outcomes. Stakeholder Theory provides a valuable perspective on how stakeholder commitment influences the relationship between a buyer's sustainability orientation and supplier development. By highlighting the importance of engaging committed stakeholders, the theory helps explain why sustainability-oriented buyers can achieve better supplier development results when their suppliers are invested in sustainability.

Figure 2.1 Conceptual Framework



2.5 Relationship between Buyer's Sustainability Orientation and Supplier Development

The alignment of a buyer's sustainability orientation with supplier development has gained significant attention in recent years. Sustainability orientation refers to a buyer's commitment to integrating environmental, social, and economic considerations into their procurement and operational strategies. Supplier development, on the other hand, involves activities that enhance a supplier's capabilities and performance. Research indicates that a strong sustainability orientation by buyers positively influences supplier development by enhancing supplier capabilities. For instance, Lee and Klassen (2016) highlight that buyers who prioritize sustainability are more likely to invest in activities that improve suppliers' environmental and social performance. Their study finds that such buyers engage in training and technology transfers that help suppliers adopt sustainable practices, thereby improving their overall capabilities (Lee & Klassen, 2016). Similarly, Choi et al. (2020) show that buyers with a sustainability focus tend to work closely with suppliers to improve their environmental performance. This collaboration often includes providing technical assistance and resources that enable suppliers to reduce their carbon footprint and enhance their production processes (Choi et al., 2020).

A buyer's commitment to sustainability also positively impacts supplier performance and innovation. Research by Zhu and Sarkis (2018) demonstrates that buyers who emphasize sustainability in their procurement strategies foster an environment that encourages suppliers to innovate and improve their processes. This is achieved through joint initiatives, such as sustainable product development projects, which drive performance improvements and foster innovation among suppliers (Zhu & Sarkis, 2018). Additionally, Wong et al. (2021) found that suppliers who perceive their buyers as committed to sustainability are more likely to adopt innovative practices. This positive perception enhances the supplier's willingness to engage in development programs that align with the buyer's sustainability goals, leading to better overall performance and competitiveness (Wong et al., 2021). The sustainability orientation of buyers also plays a crucial role in strengthening buyer-supplier relationships. According to the study by Sharma and Choi (2022), buyers who prioritize sustainability often build stronger, more collaborative relationships with their suppliers. This collaborative approach facilitates better communication, trust, and mutual understanding, which are essential for effective supplier development (Sharma & Choi, 2022). Furthermore, Liu et al. (2023) emphasize that sustainable procurement practices lead to more transparent and ethical interactions between buyers and suppliers. This transparency helps in establishing long-term relationships that are beneficial for both parties, including joint efforts in supplier development initiatives (Liu et al., 2023). Based on the discussion, this study proposes that:

H1: buyer's sustainability orientation has positive influence on supplier development

2.5.1 Relationship between Stakeholders Commitment and Supplier Development

Stakeholder commitment is critical for effective supplier development. Zhang et al. (2018) demonstrate that strong stakeholder engagement, including both internal and external stakeholders, fosters an environment conducive to supplier development. Their study finds that committed stakeholders facilitate resources, provide support, and encourage best practices, which significantly enhance supplier performance and development outcomes (Zhang et al., 2018). Similarly, Wang and Zhang (2020) show that stakeholder commitment leads to more effective supplier development initiatives by aligning supplier goals with broader organizational objectives. This alignment ensures that suppliers receive the necessary support and resources to improve their capabilities, thus enhancing their performance and integration within the supply chain (Wang & Zhang, 2020). Research also highlights the role of

stakeholder support in improving supplier capabilities. For instance, Liu et al. (2019) find that stakeholder commitment to sustainability and ethical practices positively influences supplier development. Their study reveals that stakeholders who are actively involved in promoting sustainable practices drive suppliers to adopt environmentally friendly technologies and improve their operational processes (Liu et al., 2019). In addition, Kumar and Sethi (2021) argue that stakeholder support, particularly from key stakeholders such as customers and regulatory bodies, enhances suppliers' ability to meet quality and performance standards. By providing technical assistance and sharing industry best practices, committed stakeholders contribute to the development of suppliers' skills and capabilities (Kumar & Sethi, 2021).

Stakeholder commitment also plays a vital role in establishing and maintaining long-term supplier relationships. According to Yang et al. (2022), committed stakeholders contribute to the development of trust and mutual understanding between buyers and suppliers. This trust-building process is essential for fostering long-term relationships that are beneficial for both parties, facilitating continuous supplier development (Yang et al., 2022). Furthermore, Zhao and Liu (2023) highlight that stakeholder engagement helps in managing and resolving conflicts that may arise between buyers and suppliers. Effective stakeholder commitment ensures that conflicts are addressed constructively, which is crucial for maintaining strong supplier relationships and facilitating ongoing development efforts (Zhao & Liu, 2023). The discussion above suggests that:

H2: positive relationship exists between stakeholders' commitment and supplier development

2.5.2 Moderating effect of Stakeholders Commitment

Stakeholder commitment plays a critical moderating role in the relationship between a buyer's sustainability orientation and supplier development. According to Lee and Chang (2019), when buyers emphasize sustainability, the involvement and support of stakeholders such as customers, investors, and regulators become crucial. Stakeholder commitment not only reinforces the buyer's sustainability goals but also provides additional resources and pressure to encourage suppliers to align with sustainable practices (Lee & Chang, 2019). Research indicates that committed stakeholders enhance the effectiveness of a buyer's sustainability orientation in supplier development. For instance, Yang and Liu (2021) find that stakeholder engagement amplifies the impact of sustainability-oriented initiatives on supplier performance. Their study shows that active stakeholder support leads to better implementation of sustainability practices and improved supplier capabilities by providing guidance, resources, and accountability (Yang & Liu, 2021). Several studies highlight the moderating effects of stakeholder commitment on the sustainability-supplier development relationship. Zhang et al. (2022) demonstrate that stakeholder commitment moderates the relationship between a buyer's sustainability orientation and supplier development outcomes. Their research shows that high levels of stakeholder commitment strengthen the positive effects of sustainability practices on supplier development, as stakeholders actively participate in and support the buyer's sustainability initiatives (Zhang et al., 2022).

Similarly, Huang and Zheng (2023) argue that stakeholder commitment serves as a catalyst for translating sustainability orientation into tangible supplier development actions. Their findings suggest that the presence of committed stakeholders enhances the buyer's ability to effectively implement sustainability programs, thereby positively impacting supplier development (Huang & Zheng, 2023). The moderating effect of stakeholder commitment has practical implications for managing supply

chains. Research by Chen and Wang (2024) highlights that buyers with strong stakeholder support are better positioned to drive sustainability initiatives and foster supplier development. Committed stakeholders facilitate communication, offer feedback, and ensure alignment between buyer sustainability goals and supplier practices, leading to more effective supplier development strategies (Chen & Wang, 2024). The literature indicates that stakeholder commitment significantly moderates the relationship between a buyer's sustainability orientation and supplier development. Committed stakeholders enhance the buyer's ability to implement sustainability practices effectively and improve supplier development outcomes. This understanding underscores the importance of engaging stakeholders to support sustainability initiatives and achieve better supplier performance. Hence the study proposes that:

H3: stakeholder commitment positively moderates the relationship between buyer's sustainability orientation and supplier development

3. Research Method

3.1 Research Philosophy

The study's reliance on numerical data, structured surveys, and statistical analysis aligns with the positivist paradigm. By focusing on observable and measurable variables such as buyer orientation, supplier development, and stakeholder commitment, the study minimizes biases and enhances replicability. The study employs an explanatory research design. This design is suitable for investigating causal relationships between variables and explaining how buyer's sustainability orientation influences supplier development, with stakeholder commitment as a moderating factor (Saunders et al., 2019).The study focuses on professionals in procurement, supply chain management, sustainability management, and supplier development across industries with active buyer-supplier relationships. A sample size of 280 is considered appropriate for ensuring robust statistical analysis and generalizable findings, particularly when using quantitative methods such as regression or structural equation modeling (Hair et al., 2020). Researchers recommend sample sizes above 200 for studies involving multiple variables and interactions, as it increases the reliability and validity of results (Kline, 2016). Data was collected using an online survey administered through platforms such as Google Forms.The data analysis was conducted using SPSS (Statistical Package for the Social Sciences) and AMOS (Analysis of Moment Structures).

4. Data Analysis and Results

4.1 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) is a statistical technique commonly used in social sciences to identify the underlying relationships among a set of observed variables. In this study, with a sample size of 280 respondents, the sample size is adequate for EFA. Next, the correlation matrix is examined to determine whether the variables are sufficiently correlated to justify factor analysis. A Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity are typically conducted. A KMO value above 0.6 is generally considered acceptable, and Bartlett's Test should be significant ($p < 0.05$) to confirm the appropriateness of EFA (Kaiser, 1974).

Table 4.1 KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.926
Bartlett's Test of Sphericity	Approx. Chi-Square	9805.234
	df	780
	Sig.	.000

Table 4.2.1 Reliability and validity Results for Buyer's Sustainability Orientation

Construct items	Factor loadings	Cronbach's Alpha	Composite Reliability (CR)	Convergent Validity (AVE)	Discriminant Validity (DV)
ENO1	.795	.964	0.569	0.755	0.971
ENO 2	.660				
ENO 3	.632				
ENO 4	.644				
ENO 5	.851				
SCO1	.842				
SCO2	.730				
SCO3	.715				
SCO4	.742				
SCO5	.800				
ECO1	.859				
ECO2	.830				
ECO3	.709				
ECO4	.707				
ECO5	.751				

Table 4.2.2 Reliability and validity Results for Supplier Development

Construct items	Factor loadings	Cronbach's Alpha	Composite Reliability (CR)	Convergent Validity (AVE)	Discriminant Validity (DV)
PRA1	.607	.890	0.527	0.726	0.949
PRA2	.738				
PRA3	.814				
PRA4	.773				
PRA5	.768				
RAD1	.702				
RAD2	.818				
RAD3	.747				
RAD4.	.697				
RAD5	.548				

Table 4.2.3 Reliability and validity Results for Stakeholders Commitment

Construct items	Factor loadings	Cronbach's Alpha	Composite Reliability (CR)	Convergent Validity (AVE)	Discriminant Validity (DV)
CMT1	.603	.946	0.517	0.719	0.965
CMT2	.690				
CMT3	.651				
CMT4	.704				
CMT5	.764				
PAE1	.720				
PAE2	.690				
PAE3	.644				
PAE4	.681				
PAE5	.769				
WLC1	.809				
WLC2	.824				
WLC3	.751				
WLC4	.749				
WLC5	.701				

The KMO value of 0.926 indicates that the data is highly suitable for factor analysis. According to Kaiser (1974), KMO values above 0.9 are considered "marvelous," suggesting a strong pattern of correlations and sufficient shared variance among variables. Bartlett's Test of Sphericity (Chi-Square = 9805.234, df = 780, Sig. = .000): The significant result ($p < .001$) confirms that the correlation matrix is not an identity matrix. This implies that relationships exist among the variables, making the data appropriate for factor analysis. The reliability and validity tests ensure the robustness and appropriateness of the constructs used in the study. Buyer's Sustainability Orientation Cronbach's Alpha (.964): High reliability, indicating excellent internal consistency among construct items. Composite Reliability (CR = 0.569): Moderate reliability. This indicates that while most items are internally consistent, some may contribute less to the construct's measurement. Convergent Validity (AVE = 0.755): Strong convergent validity, as the AVE surpasses the threshold of 0.5, suggesting that the construct explains a substantial portion of variance in its indicators. Discriminant Validity (DV = 0.971): High discriminant validity implies that the construct is distinct from others. Supplier Development Cronbach's Alpha (.890): High reliability, indicating strong internal consistency among construct items. Composite Reliability (CR = 0.527): Slightly lower than the recommended threshold (≥ 0.7). This may suggest minor issues with the consistency of construct indicators. Convergent Validity (AVE = 0.726): Adequate, indicating that the construct explains a satisfactory portion of variance in the indicators. Discriminant Validity (DV = 0.949): High, ensuring the construct is distinct from others. Stakeholders' Commitment Cronbach's Alpha (.946): Excellent reliability, indicating consistent measurements across items. Composite Reliability (CR = 0.517): Moderate but acceptable reliability for exploratory analysis. Convergent Validity (AVE = 0.719): High, reflecting that the construct explains a substantial proportion of the variance in the indicators. Discriminant Validity (DV = 0.965): Strong, ensuring the construct's

uniqueness. Factor loadings represent the correlation between items and their respective constructs. For the constructs: Most items have loadings ≥ 0.6, suggesting significant contributions to the constructs. The results from Table 4.2 demonstrate the robustness of the data for analysis. The high KMO value and significant Bartlett's Test confirm the suitability for factor analysis. Reliability and validity metrics indicate that the constructs are well-defined and internally consistent, with some areas for minor improvements. The overall findings support the adequacy of the measurement model for subsequent analyses.

Table 1Regression Weights Direct Path Result

Relationship	Estimate	S.E.	C.R.	P
BSO - -> SPD	.405	.059	6.828	.000
SHC- -> SPD	.158	.063	2.502	.012

Note: BSO= Buyer's Sustainability Orientation; SPD=Supplier Development; SHC=Stakeholder Commitment

Relationship between Buyer's Sustainability Orientation and Supplier Development

The Estimate: .405 indicates a positive and moderately strong influence of Buyer's Sustainability Orientation on Supplier Development. For every unit increase in BSO, SPD increases by .405 units, suggesting that buyers who prioritize sustainability significantly contribute to supplier development initiatives. The Standard Error (S.E.): .059 is relatively small S.E. reflects precision in estimating the effect, indicating high reliability. The Critical Ratio computed as the ratio of the Estimate to S.E., exceeds the threshold of 1.96, demonstrating statistical significance. A p-value below .05 confirms the significance of this relationship. This supports the hypothesis that buyers with a sustainability orientation actively engage in supplier development practices.

Relationshipbetween Stakeholder Commitment and Supplier Development

The Estimate: .158 suggests a weaker but still positive influence of Stakeholder Commitment on Supplier Development. For every unit increase in SHC, SPD increases by .158 units. This implies that stakeholder commitment contributes to supplier development, though not as strongly as buyer sustainability orientation. The Critical Ratio (C.R.): 2.502 exceeds the threshold of 1.96, confirming that the relationship is statistically significant. A p-value below .05 further validates the significance of the relationship. Stakeholder commitment plays a role in enhancing supplier development by fostering collaboration and trust.

Table 2 Interaction Results

R	**R-sq**	**MSE**	**F**	**df1**	**df2**	**p**
.6087	.3705	.6306	54.1499	3.0000	276.0000	.0000
	coeff	**se**	**t**	**p**	**LLCI**	**ULCI**
Constant	2.7837	.3069	9.0708	.0000	2.1796	3.3878
BSO	.0883	.1152	.7667	.4439	.3152	.1385
SHC	.1392	.1155	1.2052	.2291	.0882	.3666
Int_1	.0781	.0320	2.4391	.0154	.0151	.1412

Note: BSO= Buyer's Sustainability Orientation; SHC=Stakeholder Commitment

R (.6087): The multiple correlation coefficient indicates a moderate positive relationship between the predictors (BSO, SHC, Int_1) and the dependent variable. R-squared (.3705): Approximately 37.05% of the variance in the dependent variable is explained by the model. While this is reasonable, it suggests that other factors not included in the model contribute to the remaining variance. MSE (.6306): This value reflects the average squared difference between observed and predicted values, indicating the precision of the model's predictions. F-test is highly significant ($p < .001$), indicating that the model as a whole provides a significantly better fit than a model with no predictors. Interaction Term (Int_1, Coeff: .0781, $p = .0154$): The interaction between Buyer's Sustainability Orientation and SHC is positive and statistically significant ($p<.05$), indicating that the combined effect of Buyer's Sustainability Orientation and SHC significantly influences the dependent variable. This suggests a synergistic relationship, where the joint presence of sustainability orientation and stakeholder commitment enhances the outcome. The significant interaction between Buyer's Sustainability Orientation and Stakeholder Commitment highlights that the relationship between Buyer's Sustainability Orientation and the dependent variable is moderated by Stakeholder Commitment. Organizations emphasizing both sustainability orientation and stakeholder commitment can achieve better outcomes than focusing on these factors independently.

Table 3 Hypothesis Testing and Findings

Hypothesis	Relationship	se	t	p	Remarks
H1	BSO - -> SPD	.059	6.828	.000	Supported
H2	SHC- -> SPD	.063	2.502	.012	Supported
H3	SHC*BSO - -> SPD	.0320	2.4391	.0154	Supported

4.2 Discussion of Results

Positive Relationship Between Buyer's Sustainability Orientation and Supplier Development

A positive relationship exists between Buyer's Sustainability Orientation (BSO) and Supplier Development (SPD) due to the alignment of strategic priorities between buyers and suppliers. BSO emphasizes the integration of sustainable practices into procurement and operational processes, which necessitates active engagement with suppliers to improve their capabilities and align their operations with sustainability goals (Reuter et al., 2019). Buyers who prioritize sustainability often invest in training, resource-sharing, and technological support for suppliers, enhancing their operational efficiency and environmental performance (Sarkis et al., 2020). These actions not only improve supplier capabilities but also build long-term partnerships that foster mutual growth and adherence to sustainability standards. For instance, a buyer committed to reducing carbon emissions may assist suppliers in adopting greener technologies, which improves the supplier's operations and supports the buyer's sustainability objectives (Gualandris&Kalchschmidt, 2021).

Additionally, buyers with a strong sustainability orientation are likely to implement proactive supplier development programs that promote innovation and adherence to ethical standards. Such programs ensure that suppliers are equipped to meet evolving market demands, contributing to overall supply chain efficiency and resilience (Koufteros et al., 2020).

Positive Relationship between Stakeholder Commitment and Supplier Development

A positive relationship exists between stakeholder commitment (SHC) and supplier development (SPD) due to the role of stakeholders in fostering collaborative and resourceful supply chain environments. Stakeholders, including internal teams, regulatory bodies, and external partners, contribute to supplier development by providing resources, expertise, and strategic alignment necessary for improving supplier capabilities (Kannan & Tan, 2020). Committed stakeholders actively engage in transparent communication and decision-making processes, creating a foundation for collaborative supplier development initiatives. For instance, organizations that prioritize stakeholder participation often facilitate knowledge-sharing workshops and training programs for suppliers, helping them meet quality and sustainability standards (Gualandris&Kalchschmidt, 2021). This collaborative approach strengthens supplier performance and enhances long-term partnerships. Additionally, stakeholders drive supplier development by advocating for ethical practices and compliance with environmental and social standards. When stakeholders are committed, they help align suppliers' operations with organizational objectives and regulatory requirements, leading to improved supplier resilience and innovation (Reuter et al., 2019). For example, stakeholders may assist suppliers in adopting advanced technologies to address operational inefficiencies, thereby improving overall supply chain effectiveness. Ultimately, the involvement and commitment of stakeholders create an ecosystem of mutual trust and shared responsibility, which is essential for effective supplier development.

Positive Moderating Effect of Stakeholder Commitment on the Relationship Between Buyer's Sustainability Orientation and Supplier Development

Stakeholder commitment (SHC) positively moderates the relationship between buyer's sustainability orientation (BSO) and supplier development (SPD) by enhancing the collaborative mechanisms and resource support needed to align sustainability goals across the supply chain. Buyers who prioritize environmental and social considerations in procurement decisions rely heavily on stakeholder engagement to operationalize these priorities within supplier development practices (Gualandris&Kalchschmidt, 2021). Committed stakeholders facilitate communication, coordination, and resource allocation that bridge the gap between sustainability objectives and actionable supplier improvements. For example, organizations with strong stakeholder commitment can provide suppliers with access to training, technology, and financial resources, enabling them to meet buyers' sustainability standards. This collaborative approach ensures that sustainability-oriented goals are not just aspirational but embedded in practical supplier development strategies (Reuter et al., 2019). Furthermore, stakeholder commitment fosters trust and shared accountability among buyers and suppliers, encouraging suppliers to invest in sustainable practices. Stakeholders such as regulators and industry associations also provide the necessary frameworks and incentives for sustainability integration, amplifying the impact of a buyer's sustainability orientation on supplier development (Kannan & Tan, 2020). Without strong stakeholder commitment, sustainability objectives may face resistance or implementation gaps due to misaligned priorities or insufficient resources. In summary, stakeholder commitment enhances the relationship between BSO and SPD by creating an enabling environment for sustainable supplier practices through collaboration, resource provision, and shared accountability.

5. Managerial Implications

For managers, the findings emphasize the need to integrate sustainability into procurement strategies and collaborate closely with stakeholders to ensure that suppliers meet sustainability criteria. Building long-

term partnerships with suppliers and stakeholders is critical for achieving sustainable supply chain development. Managers should prioritize open communication and invest in training programs, technological support, and resource sharing to align suppliers with the organization's sustainability objectives.The positive moderating effect of stakeholder commitment suggests that the more engaged and committed stakeholders are, the greater the impact of a buyer's sustainability orientation on supplier development. Managers should therefore prioritize developing robust relationships with stakeholders such as suppliers, customers, regulatory bodies, and industry groups. Actively engaging these stakeholders in sustainability goals can create a shared vision that aligns both the buyer's and suppliers' efforts towards sustainable development. This could involve regular dialogues, joint initiatives, and shared responsibility for meeting sustainability targets.

Theoretical Implications

From a theoretical perspective, this study contributes to the understanding of sustainability orientation in supply chain management by demonstrating its significant role in driving supplier development. The moderating effect of stakeholder commitment offers valuable insights into the complex dynamics of sustainable procurement and supplier relationships, providing a foundation for future research in sustainable supply chains and stakeholder theory.The study integrates Buyer's Sustainability Orientation (BSO) with Stakeholder Commitment (SHC), demonstrating how the interaction between these two factors influences Supplier Development (SPD). This integration challenges traditional models of sustainability that often view these dimensions separately. The theoretical framework now needs to account for the dynamic interplay between a buyer's sustainability strategies and the willingness of stakeholders to engage with and commit to these goals. This contribution enriches the existing literature by suggesting that stakeholder commitment is not just an antecedent but a critical moderator that shapes the outcomes of sustainability-driven supplier development initiatives.

Practical Implications

Practically, organizations should focus on fostering strong stakeholder relationships and creating mechanisms for continuous collaboration and support. This study suggests that developing a clear stakeholder engagement strategy can facilitate the alignment of sustainability objectives across the supply chain. Additionally, companies can leverage stakeholder-driven initiatives, such as joint training programs and resource sharing, to enhance the sustainability performance of suppliers.

Recommendations

Organizations should prioritize building long-term, collaborative relationships with stakeholders to ensure the alignment of sustainability objectives across the supply chain.Procurement managers should integrate sustainability considerations into supplier selection and development processes, ensuring that suppliers are equipped to meet environmental and social sustainability standards.Companies should collaborate with suppliers on training programs and provide access to technological resources to facilitate sustainable practices.

Suggestions for Future Study

Future research could investigate the impact of different types of stakeholder commitment (e.g., governmental, non-governmental, or industry associations) on sustainability-driven supplier development. Longitudinal studies could provide deeper insights into the long-term effects of stakeholder engagement on sustainability outcomes in the supply chain. Additionally, exploring the role

of digital technologies and innovation in enhancing the relationship between BSO, SHC, and SPD could offer valuable contributions to the field of sustainable supply chain management. In conclusion, this chapter provides a comprehensive overview of the study's key findings and their implications for both theory and practice, offering guidance for managers seeking to enhance sustainability within their supply chains.

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