

## Green Supply Chain Practices, Supply Chain Environment Cooperation, and Organisational Culture's Impact on Firm Performance: A Mediating Moderating Analysis

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### ABSTRACT

Growing environmental concerns have led stakeholders to scrutinise business activities and products that pose significant ecological risks. Increasing pressure from international consumers and regulatory authorities has urged companies to adopt environmentally sustainable strategies to reduce their ecological footprint. In response to these expectations, firms are encouraged to integrate sustainable practices, consequently driving greater investment in the Green Supply Chain (GSC). This study investigates the impact of Green Supply Chain Practices (GSCP) on Firm Performance (FP) within Pakistan's textile sector. It further assesses the mediating role of Supply Chain Environmental Concern (SCEC) and the moderating influence of Organisational Culture (OC) in this relationship. A quantitative methodology was adopted, drawing upon primary data from 120 supply chain managers in the Pakistani textile industry. The dataset was analysed using Smart-PLS 3. The findings demonstrate a significant and positive influence of GSCP on FP. Moreover, SCEC significantly mediates the relationship between GSCP and FP. In addition, OC was found to moderate the link between SCEC and FP. These results indicate that GSCP and SCEC positively enhance FP, with OC strengthening this effect.

**Keywords:** Green Supply Chain Practices, Organisational Culture, Supply Chain Environment Concern, Firm Performance

### INTRODUCTION

The global push towards achieving sustainable development goals has intensified the adoption of environmentally conscious processes, products, and services aimed at minimising waste, conserving energy and resources, and reducing both ecological and human harm. In response to regulatory mandates, many enterprises are embracing green initiatives, which are also

perceived as strategic tools for entering new markets and strengthening brand reputation (Khan & Qianli, 2017). To address escalating environmental concerns, companies are increasingly reformulating their supply chain frameworks (Lee, 2015). GSCP is recognised as a proactive approach for advancing environmental outcomes (Hsu & Hu, 2008). In pursuit of this, firms have launched environmental audits and certification schemes, encouraged collaboration on environmental matters, and extended ecological support to suppliers in order to establish GSCs (Wu et al., 2011).

Despite this momentum, several firms restrict their efforts to internal green supply chain practices (IGSCP) due to challenges such as capital intensity, long gestation periods, inconsistencies in suppliers' environmental goals, technological barriers, and financial limitations (Baah & Jin, 2019; Feng et al., 2018). Nevertheless, external collaboration is essential, as internal measures alone are insufficient to significantly improve environmental performance. Extending green initiatives beyond internal operations requires broader supply chain engagement (Ageron et al., 2012). Moreover, internal GSC strategies may yield positive financial outcomes. For instance, Agyabeng-Mensah et al. (2019) found a positive association between FP and green logistics management in Ghanaian SMEs. Similarly, Yu et al. (2017) confirmed the foundational role of internal environmental practices in effective GSCP implementation. Research by Zaid and Jaaron (2020) also identified SCEC as a mediating factor linking GSCP with FP.

Enterprises are increasingly compelled to balance profitability with environmental stewardship (Younis et al., 2016). However, limited empirical studies on GSCP benefits pose challenges to widespread adoption (Zhu et al., 2012). Furthermore, existing literature presents inconsistent findings regarding the value-creation potential of GSCP, raising questions about its efficacy (Eltayeb et al., 2011). Jabbour and de Sousa Jabbour (2016) further noted the scarcity of empirical analyses exploring the combined influence of GSCP and SCEC on FP, due to their intricate interrelationships. In the context of Pakistan, such interactions remain underexplored. As highlighted by Renwick et al. (2015), the influence of GSCP and SCEC on FP has not been adequately investigated in the local setting. This study seeks to address these research gaps by introducing OC as a moderating variable affecting the SCEC-FP relationship. It aims to examine the direct, mediating, and moderating dynamics among GSCP, SCEC, OC, and FP within Pakistan's industrial framework. The proposed research framework offers insights into how environmental sustainability strategies may enhance FP and how OC shapes these linkages. Accordingly, the following research questions are posited:

- Do GSCP and SCEC each exert a direct influence on FP?
- Does GSCP affect FP indirectly through SCEC?
- Does OC moderate the relationship between SCEC and FP?
- What is the overall impact of GSCP, SCEC, and OC on FP?

## LITERATURE REVIEW

### Green Supply Chain Practices (GSCP)

GSCP involves practices such as efficient resource utilisation, emission reduction, and minimisation of waste throughout the supply chain (Yu et al., 2017). Enhancing GSCP effectiveness requires companies to emphasise environmentally conscious product design,

engage with suppliers who prioritise ecological considerations, and strengthen internal supply chain management (Zhu & Sarkis, 2004). These practices not only enhance a firm's public image and reputation but also contribute to improved FP. GSCP extends across the full spectrum of the supply chain, encompassing suppliers and the broader environmental ecosystem. Well-developed GSCP structures facilitate access to new supplier markets and fulfil regulatory obligations (Feng et al., 2018; Yu et al., 2017). Consequently, integrating GSCP can provide firms with a strategic edge and enhance their FP.

### Supply Chain Environmental Cooperation (SCEC)

Collaboration plays a pivotal role in bridging knowledge disparities across supply chain networks. According to Mishra et al. (2017), cooperative efforts within the supply chain can mitigate risks while enabling firms to leverage available opportunities. Through shared resources and aligned objectives, collaborative arrangements contribute meaningfully to environmental sustainability (Hawkins et al., 2017). Strategic partnerships among stakeholders in the supply chain are instrumental in curbing unsustainable activities and facilitating the effective implementation of GSC initiatives (Yu et al., 2017). Moreover, cooperative engagement can influence regulatory development, oversight mechanisms, and the formulation of practical evaluation frameworks (Zhu & Zhang, 2010). This study seeks to integrate GSCP and SCEC to explore how their interaction influences FP.

### Organisational Culture (OC)

The culture within an organisation significantly influences the effective integration of GSCP and collaborative efforts aimed at improving FP. Organisational culture comprises the shared values, beliefs, and practices that shape employee behaviour. A culture that embraces adaptability enables personnel to more readily accept green initiatives and engage in cooperative efforts. When an organisation fosters a culture that supports environmental change, it becomes easier to realise sustainability goals, foster collaboration, and achieve desired financial outcomes. A supportive cultural environment allows for more effective planning, coordination, and execution of GSC initiatives (Osei et al., 2023). Furthermore, such a culture promotes internal collaboration, enhances employee engagement in ecological practices, and supports regulatory adherence (O'Reilly et al., 2014). Empirical evidence suggests that organisations grounded in strong, value-oriented cultures tend to experience enhanced long-term profitability by embedding ethical and environmental considerations into their strategic and operational frameworks, thereby aligning sustainability with financial success.

### Firm Performance (FP)

FP holds critical importance for all organisations, as it reflects the effectiveness of internal processes encompassing policies, operational practices, activities, resource utilisation, and both tangible and intangible outputs (Agyabeng-Mensah et al., 2019). Although FP is inherently multidimensional, integrating environmental, social, and economic considerations, this study primarily evaluates FP using financial and market-based indicators. Key performance metrics such as profit margin, return on investment, earnings per share, and return on cash reflect an organisation's capacity to generate shareholder value. Market performance, which captures a firm's ability to achieve and sustain favourable outcomes in competitive environments, is typically assessed through indicators like sales growth and market expansion (Hsu et al., 2011). This study specifically measures FP through profit margins and earnings per share (Yang et al.,

2016). Empirical evidence suggests that adopting environmentally sustainable practices can provide firms with a competitive edge and attract a broader customer base, thereby enhancing FP. Nonetheless, further research is essential to determine which specific green initiatives most effectively influence FP.

### GSCP and FP

Existing empirical studies emphasise that the primary motivation behind organisations adopting environmental responsibility is the pursuit of improved FP, with various works exploring the influence of GSCP on financial outcomes (Feng et al., 2018). Agyabeng-Mensah et al. (2019) report that GSCP contributes positively to FP, whereas Feng et al. (2018) present evidence of a negative relationship between GSCP and financial outcomes, highlighting the complex nature of this link. Research further suggests that environmentally sustainable practices can enhance competitiveness by increasing operational efficiency (Baah & Jin, 2019). Such initiatives may also open new market opportunities, fostering business growth and improved profitability. Sodhi (2015) argues that information exchange and collaborative engagement with customers in promoting green practices can satisfy consumer expectations, encourage continued patronage, and subsequently expand market share, revenue, and profitability, aligning with stakeholder interests. Green et al. (2019), drawing on the principle of complementarity, found that sequential adoption of green initiatives strengthens coherence among strategies aimed at improving FP. Based on this foundation, the following hypothesis is proposed:

**H1:** GSCP improves FP.

### GSCP and SCEC

Empirical evidence suggests that IGSCP plays a critical role in fostering widespread adoption of environmental policies and in securing their associated benefits (Hawkins et al., 2017). Organisations with a strong green orientation in their culture are often positioned to influence suppliers and customers by promoting environmentally responsible practices. Research by Yu et al. (2017) highlights that implementing IGSCP positively influences SCEC. Conversely, De Giovanni and Esposito Vinzi (2012) argue that GSCP may be ineffective if organisations fail to establish foundational green initiatives within their internal operations, particularly when engaging with supply chain partners. This underscores the necessity of internal readiness before pursuing broader collaborative environmental goals. Bon et al. (2018) assert that collaboration is enhanced through IGSCP, especially in areas such as lean manufacturing, green procurement, and environmental monitoring. These practices can support firms and their partners in improving aspects such as eco-friendly product design and development, employee training and education, assessment and auditing of green efforts, research, and responsible product lifecycle management, including disposal. Based on this reasoning, the following hypothesis is formulated:

**H2:** GSCP positively impacts SCEC.

### SCEC and FP

SCEC, encompassing practices such as optimised resource use, emissions control, and environmentally responsible sourcing, is playing a growing role in shaping FP, especially as stakeholder expectations for ecological responsibility intensify. The strategic integration of

environmental initiatives, including circular economy frameworks and green logistics, enables firms to minimise operational vulnerabilities and lower costs through reduced waste and improved energy efficiency (Utomo et al., 2020). Organisations adhering to high environmental standards frequently gain a competitive edge by meeting regulatory obligations and aligning with consumer values, thereby strengthening brand reputation and expanding market share (Jum'a et al., 2021). In contrast, firms that refrain from engaging in collaborative supply chain efforts and adopt risk-averse environmental strategies may face reputational setbacks, deteriorating supplier relations, customer dissatisfaction, and ultimately, weakened financial outcomes.

**H3:** SCEC positively impacts FP.

### The Mediating Impact of SCEC between GSCP and FP

The influence of GSCP on FP may be significantly strengthened through collaborative efforts within the supply chain. These practices not only exert a direct impact on FP but also produce indirect effects when integrated with SCEC. Enhanced cooperation among supply chain stakeholders enables internal green initiatives to more effectively contribute to corporate reputation and financial outcomes (Feng et al., 2018). According to Agyapong et al. (2023), collaborative arrangements can mitigate risks associated with GSC implementation and reduce the burden of regulatory compliance, leading to cost savings and enhanced FP. SCEC itself may serve both as a direct contributor to FP and as a mechanism through which GSCP exerts its financial influence.

**H4:** SCEC mediates the impact of GSCP on FP.

### The Moderating Impact of OC on SCEC on Impact FP

OC, particularly one that fosters innovation and openness to change, can significantly enhance the influence of SCEC on FP. A culture characterised by adaptability and accountability strengthens an organisation's dedication to environmental sustainability, thereby supporting improved financial outcomes. OC reflects the collective values and beliefs evident in managerial actions that endorse investments in green practices and initiatives. As noted by Iddik (2024), culture functions as a critical enabler, reinforcing the relationship between GSCP and FP. Moreover, it contributes to organisational resilience in the face of environmental challenges, recognising that achieving profitability through sustainable operations often requires a long-term perspective. The pursuit of a circular supply chain demands sustained and coordinated organisational engagement (Tahir et al., 2024). In contrast, short-term approaches, superficial sustainability claims, or minimal regulatory compliance are unlikely to yield substantial financial returns. Therefore, a clear understanding of corporate values related to sustainability is essential for overcoming resistance and fostering stronger financial performance.

**H5:** OC positively moderates the impact of SCEC on FP.

## METHODOLOGY

A three-stage procedure was employed to engage potential respondents in a self-administered survey. In the initial phase, meetings were arranged to provide a concise explanation of the



survey’s purpose. During the second stage, each participant was approached individually and invited to complete the questionnaire. For those who were unable to respond during the scheduled meeting, a follow-up step was implemented to retrieve the completed surveys at a later time. All returned questionnaires were thoroughly reviewed to ensure accuracy and to address any instances of non-response. To acknowledge their time and effort, participants were offered an incentive. The survey was disseminated to various firms located in the Pakistani cities of Lahore, Karachi, and Faisalabad, with data collected via Google Forms.

Sampling Technique

Convenience and snowball sampling methods were utilised to identify and recruit ISO (International Organisation for Standardisation) certified textile manufacturers operating in Lahore and Faisalabad, two of Pakistan’s major industrial hubs. Participants were selected based on predefined criteria, which required a minimum of five years of experience in their current roles and substantial familiarity with GSCP, SCEC, and OC. The selected respondents occupied key managerial positions across various departments, including quality assurance, supply chain, compliance, and general management, within textile manufacturing firms.

Questionnaire

The questionnaire items pertaining to GSCP were primarily adapted from the frameworks developed in previous studies by Yu et al. (2017) and Yang et al. (2016). For the measurement of SCEC, the structure proposed by Bon et al. (2018) was employed. Respondents were instructed to indicate their level of agreement with each statement using a five-point Likert scale.

RESULTS AND ANALYSIS

Measurement Model

This study explores the relationships among GSCP, SCEC, OC, and FP. The validity and reliability of the proposed model were systematically assessed. In line with the evaluation of item reliability, 18 out of 20 indicators demonstrated outer loadings exceeding 0.70, thereby meeting the established threshold criteria, as presented in Table 1 and illustrated in Figure 1.

Table 1: Measurement Statistics of the Construct

Constructs	Item loading	$\alpha$	CR	AVE
Green Supply Chain Practices		0.876	0.909	0.669
GSCP1	0.882			
GSCP2	0.846			
GSCP3	0.735			
GSCP4	0.776			
GSCP5	0.841			
Organisational Culture		0.834	0.888	0.666
OC1	0.725			
OC2	0.843			
OC3	0.854			
OC4	0.835			

Table 1(continued): Measurement Statistics of the Construct

Constructs	Item loading	$\alpha$	CR	AVE
Supply Chain Environmental Cooperation		0.926	0.941	0.696
SCEC1	0.840			
SCEC2	0.856			
SCEC3	0.891			
SCEC4	0.851			
SCEC5	0.899			
SCEC6	0.667			
SCEC7	0.814			
Firm Performance		0.748	0.786	0.581
FP1	0.717			
FP2	0.781			
FP3	0.609			
FP4	0.657			

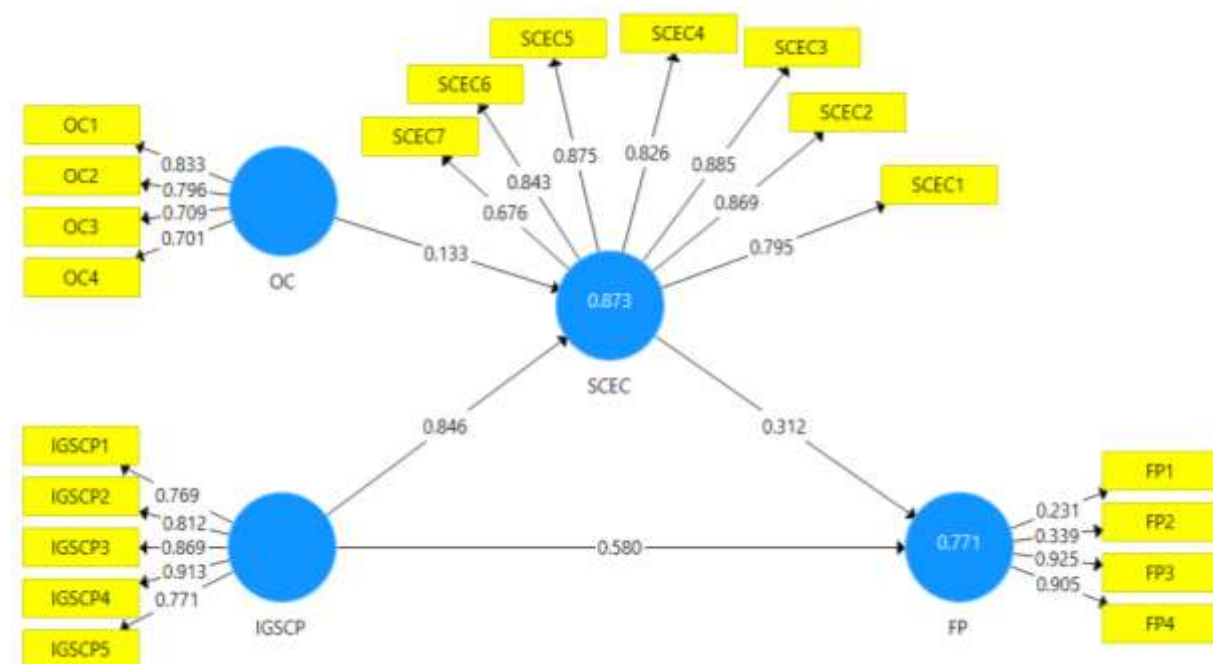


Figure 1: Reliability and Validity Analysis

### Discriminant and Convergent Validity

To ensure the accuracy of the measurement constructs, established validity criteria were applied. Convergent validity was assessed using Composite Reliability (CR) and Average Variance Extracted (AVE), with the required thresholds set at 0.70 for CR and 0.50 for AVE. The findings confirm that all constructs met these thresholds, indicating acceptable levels of convergent validity. Discriminant validity was evaluated using the [Fornell and Larcker \(1981\)](#) criterion, which requires that the square root of each construct's AVE (represented on the diagonal) must exceed its correlations with other constructs. The results demonstrate that this condition was satisfied, confirming that the model possesses discriminant validity. [Table 2](#) presents the relevant values, where all diagonal entries are greater than their respective inter-construct correlations.

**Table 2: Discriminant Validity**

Fornell-Larcker Criterion				
	FP	IGSCP	OC	SCEC
FP	0.762			
IGSCP	0.713	0.818		
OC	0.598	0.718	0.816	
SCEC	0.703	0.805	0.795	0.834

### Structural Model

According to Henseler et al. (2015), the coefficient of determination ( $R^2$ ) serves as a key indicator for assessing the predictive accuracy of the model. As shown in Table 3, the model demonstrates a predictive power of 52.9%. To further evaluate predictive relevance, the cross-validated redundancy approach ( $Q^2$ ) was employed, following the guidelines proposed by F. Hair Jr et al. (2014). A  $Q^2$  value exceeding zero is considered acceptable for establishing predictive significance. The results confirm that all  $Q^2$  values surpass this threshold, thereby affirming the model's predictive relevance.

**Table 3: Predictive Accuracy and Relevance of the Model**

	R Square	R Square Adjusted
FP	0.529	0.525
SCEC	0.852	0.850

### Hypothesis Testing

Table 4 outlines the beta coefficients for all examined variables, revealing strong, positive, and statistically significant relationships among the independent variable (IV), dependent variable (DV), and mediators. GSCP exerts a substantial influence on FP, as indicated by  $\beta = 0.421$ ,  $t$ -value = 4.528, and  $p$ -value = 0.000. Similarly, SCEC demonstrates a significant positive effect on FP, with  $\beta = 0.326$ ,  $t$ -value = 3.509, and  $p$ -value = 0.000. The relationship between GSCP and SCEC is also statistically significant, reflected in  $\beta = 0.618$ ,  $t$ -value = 17.307, and  $p$ -value = 0.017. Additionally, green reward and compensation were found to impact environmental performance with a coefficient of  $\beta = 0.195$ . Moreover, OC significantly moderates the relationship between SCEC and FP, as shown by  $\beta = 0.074$ ,  $t$ -value = 2.723, and  $p$ -value = 0.007. Moreover, the findings of this study indicate that SCEC serves as a strong mediating variable in the relationship between GSCP and FP. The direct effect is statistically significant, with  $\beta = 0.421$ ,  $t = 17.307$ , and  $p$ -value = 0.026. Additionally, the indirect effect through SCEC is also significant and positive, with  $\beta = 0.202$ ,  $t = 3.365$ , and  $p$ -value = 0.001. The significance of both direct and indirect pathways suggests that SCEC partially mediates the association between GSCP and FP, thereby confirming the presence of mediation within the proposed model.

**Table 4: Hypothesis Testing**

Hypothesis	Path Coefficient	Standard Deviation	T Statistics	P Values
IGSCP -> FP	0.421	0.093	4.528	0.000
IGSCP -> SCEC	0.618	0.036	17.307	0.000
SCEC -> FP	0.326	0.093	3.509	0.000
OC*SCEC->FP	0.074	0.027	2.723	0.007



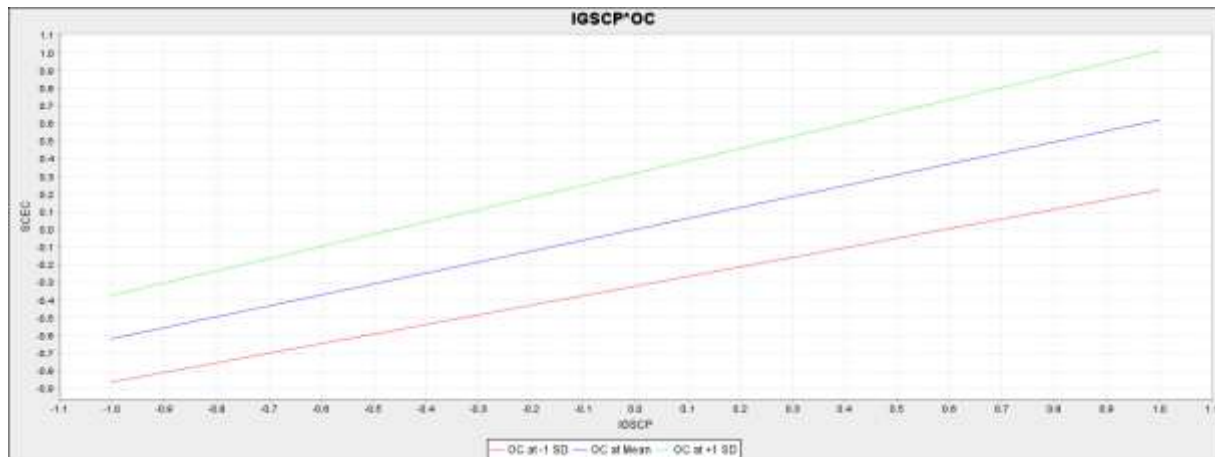


Figure 2: Moderation Analysis

### Mediation Analysis

The mediating role of SCEC in the relationship between GSCP and FP is supported by the study's findings. The results indicate that the indirect effect of GSCP on FP through SCEC is both significant and positive ( $\beta = 0.202$ ,  $t$ -value = 3.365,  $p$ -value = 0.001). Additionally, the direct effect of GSCP on FP remains statistically significant and positive ( $\beta = 0.421$ ,  $t$ -value = 4.528,  $p$ -value = 0.000). The total effect is likewise substantial, with  $\beta = 0.623$ ,  $t$ -value = 7.202, and  $p$ -value = 0.000. These results confirm the presence of partial mediation, indicating that SCEC plays a meaningful intermediary role while GSCP continues to exert a direct influence on FP. The findings are consistent with existing literature, reinforcing the notion that organisations adopting environmentally conscious GSCP strategies tend to enhance their overall performance.

Table 5: Hypothesis Testing for Mediating Effects

Hypothesis	Relationship	Direct Effects	Indirect Effects	Total Effects	VAF	Mediation
H4	GSCP->SCEC->FP	( $\beta=0.421$ , T- Value=4.528 & P-Value=0.000)	( $\beta=0.202$ , T-Value = 3.365, P-Value = 0.001)	( $\beta=0.623$ , T- Value=7.202 & P-Value=0.000)	35%	Partial

### DISCUSSION AND CONCLUSION

This study investigated the interrelationships among GSCP, SCEC, OC, and FP within Pakistan's textile sector. Prior literature presents mixed findings regarding these constructs, with varying conclusions about their influence on organisational performance. The empirical evidence from this study aligns with earlier research, affirming that the adoption of GSCP contributes directly to enhanced FP, thereby supporting Hypothesis H1. However, previous investigations have not comprehensively examined the combined effects of GSCP, SCEC, OC, and FP, underscoring the need for an interdisciplinary and integrative analysis. GSCP enables firms to establish targeted ecological objectives, facilitating strategic environmental initiatives. The findings also reveal that GSCP supports the development of internal training programmes for managerial and operational staff (Zaid & Jaaron, 2020). While these results contrast with the study of Vanalle et al. (2017), who found a positive and significant relationship between GSCP and organisational performance, they are aligned with Feng et al. (2018), who reported

a negative association. Such discrepancies may be attributed to the capital-intensive nature of GSCP implementation, which can limit its immediate financial returns. Moreover, weak managerial engagement and employee resistance may hinder the effective application of IGSCP, particularly in developing economies, thereby constraining FP (Zaid & Jaaron, 2020).

In support of Hypothesis H2, the results demonstrate a significant positive effect of GSCP on SCEC. Although Baron and Kenny (1986) identified a weak and favourable association between these constructs, the current findings are consistent with De Giovanni and Esposito Vinzi (2012), who emphasised GSCP as a critical enabler for effective SCEC implementation. Environmental management strategies such as cleaner production policies, audits, and compliance systems encourage supply chain collaboration, essential for successful GSCP deployment. To sustain long-term IGSCP outcomes, firms must strengthen managerial oversight and employee commitment, gain access to international markets, and improve profitability and market competitiveness. Moreover, Zaid and Jaaron (2020) confirmed a significant and positive link between SCEC and FP, supporting the conclusions of this study.

The findings further provide strong evidence that GSCP enhances operational performance. Cross-departmental collaboration, information sharing with CWCs, and joint environmental initiatives with suppliers have reduced workplace errors and staff dissatisfaction. Improvements in delivery, quality, and cost efficiency are outcomes of operational enhancements driven by GSCP. Collaborative efforts with suppliers and customers have also improved response capabilities. When effectively implemented, IGSCP can help organisations reduce energy usage, minimise waste, and lower pollution levels. These initiatives may encourage greater employee participation in sustainability training, reinforcing commitment and capacity. Such actions enhance the organisation's reputation and foster customer loyalty (Jabbour & de Sousa Jabbour, 2016), potentially resulting in increased sales, market share, and profitability. This study assessed the influence of GSCP on EP, OP, and BP within the context of Pakistan's textile industry. Additionally, it examined the indirect effect of GSCP on FP via SCEC. The results confirm that GSCP contributes directly to FP, particularly in developing economies. This research provides the first empirical evidence supporting the role of GSCP in enhancing FP in the context of Pakistan's textile sector, highlighting its potential as a strategic approach for improving firm-level outcomes.

## Practical Implications

This study extends the existing body of research on GSCP in several meaningful ways. Firstly, by examining the impact of GSCP on FP within textile firms, it contributes substantively to the literature by offering empirical evidence on how GSCP affects organisational outcomes. The research further advances understanding by highlighting the mediating influence of both SCEC and OC in this relationship, thereby enriching theoretical perspectives on GSCP effectiveness. Secondly, the analysis underscores the significant role that SCEC plays in enhancing FP, suggesting that growing environmental awareness among textile firms can positively influence their financial outcomes. In particular, this study emphasises the mediating function of SCEC in the GSCP–FP relationship, a dimension that has received limited attention in existing literature. By addressing this gap, the research contributes valuable insights into how internal environmental concerns translate into improved performance. Furthermore, the study confirms the positive moderating effect of OC on the relationship between SCEC and FP. This reinforces the relevance of organisational values and culture in enabling environmental practices to yield

tangible performance benefits. Finally, this investigation strengthens the GSCP literature, particularly by demonstrating the direct and indirect pathways through which GSCP influences FP via SCEC, within the context of a developing country. The theoretical implications derived from these findings offer a foundation for future research and practical interventions aimed at refining environmental strategies and their integration into organisational frameworks.

### Managerial Implications

This research provides valuable insights into the importance of implementing GSCP, offering a strategic pathway for Pakistan's textile sector to enhance both its environmental sustainability and operational performance. Through the integration of GSCP, firms can align their operations with higher standards of efficiency by fostering environmentally responsible practices. Beyond the technical knowledge possessed by managers, effective GSCP implementation requires strategic planning and coordination at the organisational level. Senior management within Pakistan's textile industry must recognise that the successful execution of GSCP initiatives depends on collaborative efforts that generate mutual value for firms and their supply chain partners. Moreover, there is a pressing need to broaden the scope of GSCP adoption from individual producers to encompass the wider supply chain, addressing systemic limitations and supporting nationwide sustainability objectives.

### Limitations and Future Research Directions

Despite its contributions, this study presents certain limitations that pave the way for future academic inquiry. Firstly, the analysis focused on GSCP practices commonly adopted by Pakistani firms. However, in developed economies, a broader range of GSCP initiatives exists, which warrants further investigation. Future research should explore a more comprehensive set of GSCP activities to assess their influence on various dimensions of organisational efficiency. Secondly, this study examined the impact of GSCP as a collective construct on performance outcomes. Subsequent research could isolate individual GSCP components to determine their distinct effects, thereby yielding more granular insights into the implications of specific practices. Thirdly, the sample was restricted to manufacturing firms, limiting the applicability of the findings to service-based enterprises. Future investigations should extend this analysis to the service sector to evaluate the generalisability of the results. Lastly, due to the limited availability of homogeneous firms in Pakistan, the survey included companies from various industrial sub-sectors. Future studies may benefit from focusing on a single type of enterprise to generate more industry-specific insights and robust conclusions.

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