

INFLUENCE OF STRATEGIC PROCUREMENT PRACTICES ON SUPPLY CHAIN PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES: MEDIATING ROLE OF ORGANISATIONAL CULTURE

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Abstract

Supply chain performance has emerged as a critical determinant of business success in today's globalized economy. Despite its importance, supply chain performance remains a significant challenge for many SMEs. The purpose of this study was to assess the influence of strategic procurement practices on supply chain performance. The study specifically sought to establish how strategic sourcing, buyer-supplier collaboration, and supply chain integration influence supply chain performance of small and medium enterprises (SMEs) with a focus on the mediating role of organizational culture. The study adopted cross-sectional survey research design. The target population for this study was 45,969 SMEs across various sectors including manufacturing, wholesaling, retailing and services providers. The study determines the sample size that represent the population using Dillman's (2014) sample size formula, to mitigate the sample size error, an additional 30% was added (Israel, 2013) resulting in a final sample size of 450 respondents. The study used primary data which was collected using questionnaires. A Partial Least Squares Structural Equation Modelling (PLS-SEM) approach was employed to analyse data collected from SMEs. The results indicate that both strategic sourcing and buyer-supplier collaboration significantly and positively influence supply chain performance. In contrast, supply chain integration did not exhibit a significant direct effect on performance, highlighting potential challenges SMEs face in achieving full integration. Furthermore, the findings reveal that organizational culture mediates the relationship between strategic sourcing and supply chain performance, as well as between buyer-supplier collaboration and performance, emphasizing the importance of a strong internal culture for effective supply chain management. However, organizational culture was not found to mediate the link between supply chain integration and performance. This research contributes to the literature on SME supply chain management by offering a

nanced understanding of how organizational culture influences strategic supply chain initiatives, ultimately leading to improved performance. The study concluded that by focusing on strategic sourcing and cultivating strong buyer-supplier collaborations while nurturing an organizational culture that supports these strategic endeavours, small and medium enterprises (SMEs) can substantially improve their supply chain performance and gain a competitive advantage in an increasingly complex market environment.

Keywords: *Strategic Procurement, Strategic Sourcing, Supplier-Buyer Collaboration, Supply Chain Integration, Supply chain performance.*

Introduction

Supply chain performance has emerged as a critical determinant of business success in today's globalized economy (Christopher, 2020). Efficient supply chains enable organizations to deliver goods and services to the right place, at the right time, and at the right cost (Christopher, 2020), which is essential for maintaining competitiveness (Sodhi & Tang, 2021), achieving customer satisfaction (Bode, Wagner, Petersen & Ellram, 2021) and driving profitability. High-performing supply chains are characterized by streamlined processes (Pietrzak, 2022), reduced costs, improved quality, and faster time-to-market (Chopra & Meindl, 2016; An & Mikhaylov, 2024), all of which contribute to a sustainable competitive advantage (Zijm, Knofius & van der Heijden, 2019).

The importance of supply chain performance among SMEs cannot be overstated. SMEs operate in highly competitive markets where margins are often thin (World Bank, 2020), and customer expectations are high (Mazzarol, 2020). Efficient supply chain management allows SMEs to mobilize and optimize resources, reduce operational costs, and respond swiftly to market changes (Adebanjo, Teh, & Ahmed, 2020). Moreover, by enhancing supply chain performance, SMEs can improve their service levels (Simangunsong, Hendry & Stevenson, 2016), thereby increasing customer satisfaction and loyalty. Effective supply chain management also mitigates risks associated with supply chain disruptions, which can be particularly devastating for SMEs with limited resources.

In Nigeria, these supply chain challenges among SMEs are particularly acute (Adebayo & Nhamo, 2021). The country's SMEs frequently encounter obstacles such as inadequate infrastructure, regulatory complexities, limited technological adoption, and strategic foresight (SMEDAN, 2017, 2021). A report from SMEDAN (2017, 2021) shows that Nigerian SMEs face significant logistical and operational challenges. A study by Adebayo and Nhamo (2021) identified governance issues and corruption as critical factors that undermine supply chain efficiency in Nigeria. Additionally, Olugu et al. (2018) highlight that poor road networks and transportation inefficiencies further complicate supply chain management for Nigerian SMEs, leading to increased lead times and higher costs.

Organizations that adopt strategic procurement practices can streamline their supply chains, enhance operational efficiency, and secure a competitive advantage. By strategically sourcing and managing supplier collaboration, organizations can realize substantial cost savings (Schiele, 2007; Zhang, Li, Liu & Li, 2024), enhance the quality and reliability of their supplies (Chen, Paulraj, & Lado, 2004), and ensure the availability of high-quality products and services (Di Mauro, 2024). Van Weele and Arbin (2019) describe strategic procurement as the integration of procurement with other functions within the company, ensuring alignment with

the company's overall objectives. In essence, strategic procurement represents a mindset that empowers organizations to overcome inefficiencies and gain a competitive edge in the marketplace (Alabdali & Salam, 2022).

Organizational culture plays a critical role in linking strategic procurement practices with overall SME performance. A supportive organizational culture can facilitate the adoption of strategic procurement by promoting values such as collaboration, continuous improvement, and innovation. Such a culture encourages employees to embrace strategic initiatives, supports cross-functional integration, and fosters strong supplier relationships (Cousins, Lawson & Squire, 2006). In view of the foregoing, this current study set to examine the influence of strategic procurement practice on supply chain performance among SMEs, also to examine mediating role of organisational culture. To achieve this objective, the study vakkidate the following null hypothesis.

H₀₁: Strategic sourcing is not significantly linked with supply chain performance among SMEs.

H₀₂: Buyer-supplier collaboration is not significantly linked with supply chain performance among SMEs.

H₀₃: Supply chain integration is not significantly linked with supply chain performance among SMEs.

H₀₄: Organizational culture is not significantly related to supply chain performance among SMEs.

Literature Review and Theoretical Framework

Concept of Supply Chain Performance

Supply chain performance has been defined and conceptualized in various ways across different studies, reflecting its multifaceted nature and the diverse contexts in which it is applied. At its core, supply chain performance is concerned with how well a supply chain achieves its goals, which typically include efficiency, effectiveness, and sustainability. (Chopra & Meindl, 2016; An & Mikhaylov, 2024).

Prajogo and Olhager (2021) describe supply chain performance as the ability of a supply chain to deliver products and services to customers at the right time, place, and cost. This definition emphasizes the importance of timely delivery and cost efficiency, which are critical for maintaining competitiveness in the global market. According to Akyuz and Erkan (2021), high-performing supply chains are those that streamline processes to reduce costs, improve quality, and accelerate time-to-market, thereby contributing to a sustainable competitive advantage.

Concept of Strategic Sourcing

Strategic sourcing is often defined as the process of developing channels of supply at the lowest total cost, not just the lowest purchase price (Popoola, et al., 2024). This involves a thorough analysis of the supply market, the establishment of long-term relationships with suppliers, and a focus on total cost of ownership rather than just initial purchase costs. According to (Monczka et al. 2016), strategic sourcing is about integrating and coordinating common items and materials, processes, designs, technologies, and suppliers across worldwide purchasing,

engineering, and operating locations. This integration aims to leverage the purchasing power and expertise of the entire organization to achieve better outcomes.

Concept of Strategic Supplier Collaboration

Strategic Supplier Collaboration (SSC) refers to the long-term, collaborative relationship between an organization and its suppliers aimed at achieving mutual benefits and sustained competitive advantage. These collaborations are integral to the best practices and performance improvements within organizations (Narasimhan & Das, 2001; Simpson & Power, 2005; Chavez et al., 2012). By fostering close, strategic relationships, firms can enhance their agility and responsiveness in turbulent business environments, positioning themselves to better withstand market fluctuations and capitalize on emerging opportunities (Kamble et al., 2012). Supplier-buyer strategic collaboration (SBSC) is widely recognized as a vital source of competitive advantage.

Concept of Supply Chain Integration

Supply chain integration is a strategic approach that aims to synchronize and coordinate the activities of different entities within the supply chain to achieve greater efficiency, responsiveness, and competitiveness. Various researchers have provided definitions and conceptualizations of supply chain integration, highlighting its importance in modern supply chain management. One perspective on supply chain integration is provided by Christopher (2016), who defines it as the alignment and coordination of key business processes within and across organizations to improve the flow of materials, information, and funds. Supply chain integration involves integrating functions such as procurement, production, logistics, and distribution to create a unified and agile supply chain network (Shukor, et al., 2021; Zhang et al., 2023).

Concept of Organisational Culture

Organizational culture is a multifaceted concept that encompasses the shared values, beliefs, norms, attitudes, and behaviours that characterize an organization and influence its members' perceptions, decisions, and actions (Schein, 2017). Different researchers have provided various definitions and conceptualizations of organizational culture, reflecting its complex and dynamic nature. One prominent perspective on organizational culture is provided by Hofstede (2020), who defines it as "the collective programming of the mind that distinguishes the members of one organization from another." According to this definition, organizational culture is deeply ingrained in the minds of employees and shapes their perceptions, assumptions, and behaviours.

Review of Empirical Studies

This section provides a review of empirical studies that have investigated the relationships between various factors and supply chain performance. Specifically, it examines the influence of strategic sourcing, buyer-supplier collaboration, supply chain integration, and organizational culture on supply chain performance within SMEs.

Several empirical studies have explored the impact of strategic sourcing practices on supply chain performance. Chen and Paulraj (2021) examined the relationship between strategic sourcing practices and supply chain performance in SMEs and concluded that effective strategic sourcing positively influences supply chain performance metrics such as responsiveness, flexibility, and cost efficiency.

In the healthcare sector, a study by Martinez and Williams (2022) explored the role of strategic sourcing in hospital supply chains. They found that hospitals utilizing strategic sourcing practices achieved higher levels of operational efficiency and patient care quality. This was largely due to streamlined procurement processes and better alignment with supplier capabilities.

Furthermore, the work of Brown and Smith (2023) in the logistics and transportation sector highlighted the importance of strategic sourcing in enhancing supply chain sustainability. Their findings indicated that companies with strategic sourcing frameworks were more successful in implementing green procurement practices, reducing environmental impact, and achieving sustainability goals.

Research on buyer-supplier collaboration has extensively highlighted its significance for enhancing supply chain performance across various industries and contexts. Zhang et al. (2022) conducted an empirical study focused on small and medium-sized enterprises (SMEs) in China, demonstrating that robust buyer-supplier collaboration significantly improves supply chain responsiveness, product quality, and delivery reliability. This study underscores the importance of trust, communication, and joint problem-solving efforts in fostering effective collaboration.

Martinez and Williams (2022) extended the exploration of buyer-supplier collaboration into the healthcare sector, highlighting that collaboration between healthcare providers and suppliers leads to better supply chain integration, resulting in enhanced operational efficiency and improved patient care outcomes. Their study emphasized that in sectors where the reliability and timeliness of supply chains can directly impact service quality and patient health, strong collaboration is indispensable.

Li and Zhang (2021) investigated the electronics industry and found that effective buyer-supplier collaboration positively impacts innovation. Their study suggested that collaboration enables better sharing of technological advancements and market insights, leading to more innovative product development and faster time-to-market. Wang et al. (2020) examined the influence of supply chain integration on supply chain performance in SMEs, concluding that higher levels of integration lead to improved supply chain efficiency, visibility, and coordination.

In the context of the food and beverage industry, Singh et al. (2022) found that supply chain integration enhances traceability and quality control. Their study demonstrated that integrated supply chains allow for better monitoring and control of food quality and safety, reducing the risk of contamination and ensuring compliance with regulatory standards.

Research Framework

The research framework of this study is designed to examine the impact of strategic sourcing, buyer-supplier collaboration, and supply chain integration on supply chain performance, with organizational culture acting as a mediating variable. This framework aims to understand how these independent variables interact with organizational culture to influence the dependent variable, supply chain performance.

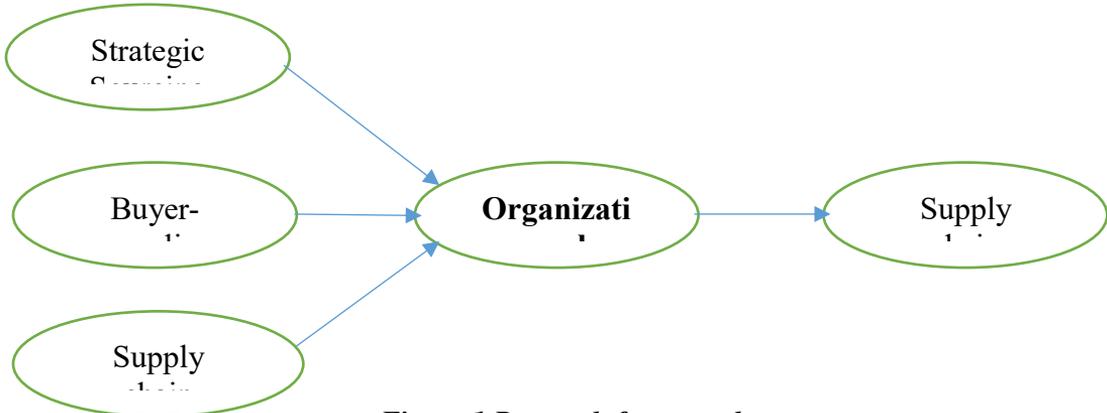


Figure 1 Research framework

Organizational culture serves as the mediating variable in this framework. It influences how strategic sourcing, buyer-supplier collaboration, and supply chain integration are implemented and managed. Studies have shown that a culture of innovation, collaboration, trust, and transparency can positively affect various aspects of supply chain performance (Nguyen et al., 2021; Zhou et al., 2022). Moreover, supply chain performance is the dependent variable, measured through metrics such as efficiency, responsiveness, quality, cost efficiency, and customer satisfaction.

Theoretical Framework

The theoretical framework of this study is grounded in the Resource-Based View (RBV) theory and the Dynamic Capabilities (DC) theory, both of which provide a robust foundation for understanding how strategic procurement practices influence supply chain performance among SMEs. These theories complement each other in explaining the critical role of internal resources and capabilities in achieving competitive advantage and sustaining performance in a dynamic environment. Specifically, RBV emphasizes the importance of internal resources and capabilities in achieving a sustainable competitive advantage. According to Barney (1991), resources that are valuable, rare, inimitable, and non-substitutable (VRIN) are key to sustaining competitive advantage. In the context of this study, strategic procurement practices, including strategic sourcing, buyer-supplier collaboration, and supply chain integration, are vital resources that SMEs can leverage to enhance their supply chain performance.



Methodology

The study adopted a cross-sectional survey research design. This design was selected because it allows for the collection of data regarding the independent and dependent variables at a single point in time, providing a snapshot of the current situation (Creswell & Creswell, 2017). Also, population of this study comprises 38,413,420 SMEs operating in Nigeria and a Sample Frame of 42,969 SMEs across various sectors including wholesale and retail, manufacturing, mining, and quarrying, construction, education, hotel and accommodation, restaurants, and entertainment in Kano State, North western Nigeria (NBS & SMEDAN, 2021). The study focuses on owner-managers of these SMEs as they are best positioned to provide accurate information about their business performance. Similarly, the study determines the sample size that represents the population using Dillman's (2014) sample size statistical formula. The formula is therefore presented below.

$$n = \frac{(N * p * q)}{(N - 1) \left(\frac{MoE}{z} \right)^2 + (p * q)}$$

Where;

n = complete sample size needed for desired level of precision

N = size of population

p = the population proportion expected to choose among the two response categories is 0.5

$q = 1 - p$

MoE = the desired margin of sampling error at 0.05 (5%)

z = the z-score or critical value for the desired level of confidence at 0.05 is 1.96

Hence, the sample size of this study is calculated below;

$$n = \frac{(42,969 * 0.5 * 0.5)}{(42,969 - 1) \left(\frac{0.05}{1.96} \right)^2 + (0.5 * 0.5)}$$

$$n = \frac{10,742}{(42,968)(0.0255102040)^2 + 0.25}$$

$$n = \frac{10,742}{(42,968)(0.0006507705) + 0.25}$$

$$n = \frac{10,742}{28.212306844}$$

$$n = \underline{\underline{381}}$$

To mitigate sample size error and account for non-response, an additional 30% should be added (Israel, 2013), resulting in a final sample size of 450 respondents. More so, simple random sampling technique was used to ensure unbiased representation and enhancing the generalizability and reliability of findings (Kothari, 2004).

Data Presentation and Analysis

Technique of Data Analysis

Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 23 for preliminary analysis, including data coding, screening, normality testing, handling missing values, outlier detection and treatment, and descriptive statistics for demographic and study variables. To test hypotheses and examine the relationships involving the mediating role of organizational culture in the link between strategic procurement sector and supply chain performance, Partial Least Squares (PLS) path modelling was employed with the aid of SmartPLS 3 (Ringle et al., 2015). PLS-SEM, a second-generation technique, allows for the modelling of multiple exogenous and endogenous latent variables simultaneously (Gefen, Straub, & Boudreau, 2000).

Response Rate

In this study, 450 questionnaires were distributed to selected respondents, and 406 were returned, indicating a high engagement rate. However, after reviewing the returned questionnaires, 24 were found to be invalid due to missing or inconsistent responses, resulting in a total of 382 valid questionnaires. This equates to an effective response rate of 84.9%, which is substantial and indicates a reliable sample for the analysis.

Assessment of Measurement Model

The assessment of the measurement model is critical for evaluating the validity and reliability of the constructs used in the study. This process involves testing for internal consistency reliability, convergent validity, and discriminant validity, typically using metrics such as Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE). These indicators help confirm that the constructs are appropriately measured and that the observed variables accurately reflect the latent constructs they are intended to represent (Hair et al., 2014). By ensuring robust measurement properties, the study can confidently proceed to analyze the structural relationships. The results for the analysis are presented in both figure and Tables.

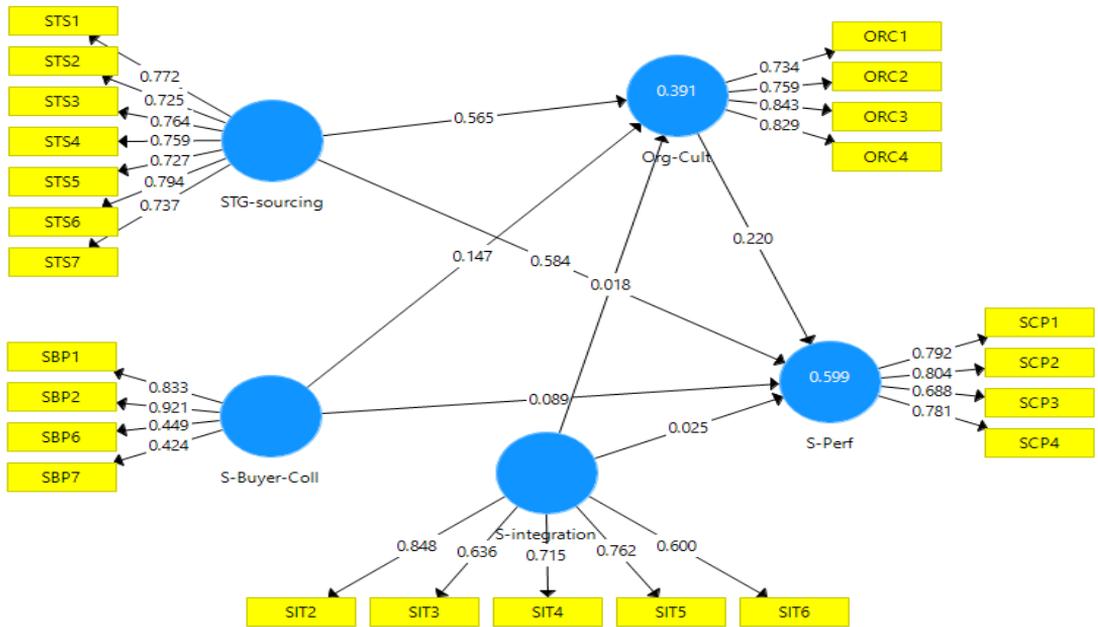


Figure 2. PLS Algorithm

Internal Consistency and Reliability

The internal consistency and reliability of the constructs in this study were evaluated using multiple reliability measures, including Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). These metrics help ensure that the items used to measure each construct are internally consistent and reliable, meaning that they adequately reflect the underlying concept. According to commonly accepted standards (Hair et al., 2010), Cronbach's Alpha and Composite Reliability should both exceed 0.7, while the AVE should be above 0.5 to indicate sufficient convergence of the items on their respective constructs.

Table 1: Internal Consistency

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Organizational Culture	0.803	0.871	0.629
Strategic Buyer Collaboration	0.715	0.769	0.581
Supply Chain Performance	0.767	0.851	0.589
Supply Chain Integration	0.788	0.840	0.515
Strategic Sourcing	0.874	0.902	0.569

In Table 1, Cronbach's Alpha for all constructs—ranging from 0.715 to 0.874 exceeds the recommended threshold of 0.7, demonstrating acceptable internal consistency across all constructs. Similarly, Composite Reliability (CR) values range from 0.769 to 0.902, all comfortably exceeding the 0.7 threshold. This suggests that each construct's items consistently



measure the same underlying concept, confirming that the measures are reliable. Furthermore, the AVE values range from 0.515 to 0.629, indicating that more than 50% of the variance in the items is explained by the underlying construct, which satisfies the requirement for good convergent validity. These results suggest that the constructs used in this study are both reliable and internally consistent.

Discriminant Validity Using Fornell-Larcker Criterion

Discriminant validity ensures that each construct in the study measures a unique concept and does not overlap significantly with other constructs. The Fornell-Larcker criterion is a widely used method for assessing discriminant validity, which compares the square root of the AVE for each construct with the correlations between the constructs. For discriminant validity to be established, the square root of the AVE for a construct must be greater than its correlations with other constructs (Fornell & Larcker, 1981).

Table 2: Discriminant Validity Using Fornell-Larcker Criterion

Construct	Org-Cult	S-Buyer-Coll	S-Perf	S-integration	STG-sourcing
Org-Cult	0.793				
S-Buyer-Coll	0.316	0.693			
S-Perf	0.605	0.334	0.768		
S-integration	0.039	0.097	0.048	0.718	
STG-sourcing	0.609	0.296	0.745	0.011	0.754

As shown in Table 2, the diagonal values (representing the square root of the AVE for each construct) are higher than the correlations between the constructs. For example, the square root of the AVE for Organizational Culture (Org-Cult) is 0.793, which is higher than its correlations with Strategic Buyer Collaboration (0.316), Supply Chain Performance (0.605), Supply Chain Integration (0.039), and Strategic Sourcing (0.609). This pattern holds true for all constructs, confirming that discriminant validity has been achieved, and each construct is distinct from the others.

Assessment of Structural Model

The structural model assessment focuses on evaluating the relationships between the latent variables, as hypothesized in the research model. This step involves testing the path coefficients, assessing the significance of these paths, and determining the explanatory power of the model through R-squared values. The model's predictive relevance is also examined using the Stone-Geisser Q^2 statistic. The structural model helps to confirm the hypothesized relationships and assess the direct and indirect effects within the model, which is essential for understanding the role of strategic procurement practices and organizational culture in enhancing supply chain performance (Sarstedt et al., 2017).

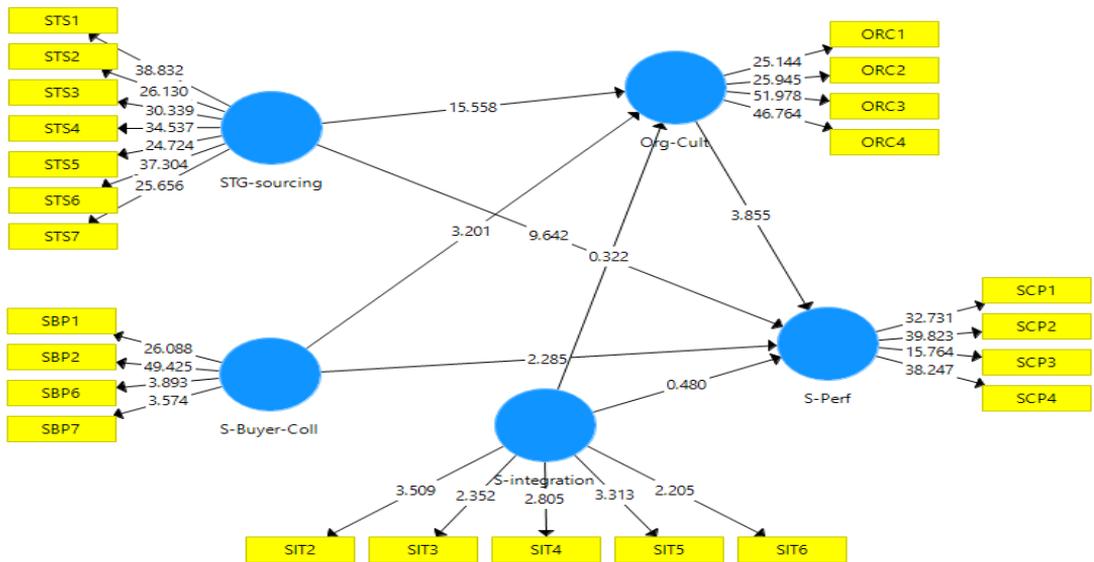


Figure 3 Bootstrapping Results

Direct Effects

The direct effects of the independent variables on Supply Chain Performance (S-Perf) were tested using path coefficients (beta values), standard deviations, t-statistics, and p-values to determine the significance of each relationship. Table 3 outlines these direct effects for each of the hypotheses.

Table 3 Direct Effects

Hypotheses	Beta	Standard Deviation	T Statistics	P Values	Sig
H01 STG-sourcing -> S-Perf	0.585	0.061	9.642	0.000	Yes
H02 S-Buyer-Coll -> S-Perf	0.091	0.039	2.285	0.023	Yes
H03 S-integration -> S-Perf	0.021	0.052	0.480	0.631	No
H04 Org-Cult -> S-Perf	0.219	0.057	3.855	0.000	Yes

In Table 3, the relationship between STG-sourcing and S-Perf (H01) is significant, with a beta value of 0.585 and a t-statistic of 9.642 ($p < 0.001$), indicating a strong and positive impact of strategic sourcing on supply chain performance. Similarly, S-Buyer-Coll to S-Perf (H02) also shows a significant but weaker direct effect, with a beta of 0.091 and a t-statistic of 2.285 ($p = 0.023$).

In contrast, the relationship between S-integration and S-Perf (H03) is not significant (beta = 0.021, $p = 0.631$), indicating that supply chain integration does not have a direct impact on performance. However, the impact of Org-Cult on S-Perf (H04) is positive and significant, with a beta value of 0.219 and a t-statistic of 3.855 ($p < 0.001$). These results suggest that organizational culture and strategic sourcing are the most critical factors directly affecting supply chain performance.



Specific Indirect Effects (Mediation)

The mediation analysis, outlined in Table 4.15, evaluates whether the relationships between the independent variables and Supply Chain Performance (S-Perf) are mediated by Organizational Culture (Org-Cult). The specific indirect effects are tested for three mediation hypotheses (H05a, H05b, H05c).

Table 4. Specific Indirect Effects

Hypotheses	Beta	Standard Deviation	T Statistics	P Values	Sig
Ho5a: STG-sourcing -> Org-Cult -> S-Perf	0.124	0.032	3.883	0.000	Yes
Ho5b: S-Buyer-Coll -> Org-Cult -> S-Perf	0.033	0.015	2.160	0.031	Yes
Ho5c: S-integration -> Org-Cult -> S-Perf	0.002	0.013	0.308	0.758	No

In Table 4, the results show that STG-sourcing indirectly affects S-Perf through Org-Cult (H05a), with a beta value of 0.124, a t-statistic of 3.883, and a p-value of less than 0.001, indicating a significant mediation effect. Similarly, S-Buyer-Coll's indirect effect on S-Perf through Org-Cult (H05b) is also significant (beta = 0.033, p = 0.031). However, the indirect effect of S-integration on S-Perf via Org-Cult (H05c) is not significant (beta = 0.002, p = 0.758), suggesting that organizational culture does not mediate the relationship between supply chain integration and performance. These findings highlight the mediating role of organizational culture in the relationship between strategic sourcing and supply chain performance, as well as between buyer collaboration and performance.

Table 5. Size and Significance of Path Coefficients in the Overall Mediation Model

Hypotheses	Beta	Standard Deviation	T Statistics	P Values
Org-Cult -> S-Perf	0.219	0.057	3.855	0.000
S-Buyer-Coll -> Org-Cult	0.147	0.046	3.201	0.001
S-Buyer-Coll -> S-Perf	0.091	0.039	2.285	0.023
S-integration -> Org-Cult	0.009	0.056	0.322	0.747
S-integration -> S-Perf	0.021	0.052	0.480	0.631
STG-sourcing -> Org-Cult	0.567	0.036	15.558	0.000
STG-sourcing -> S-Perf	0.585	0.061	9.642	0.000

In Table 5, the overall mediation model tests the size and significance of all path coefficients in the framework, as shown in Table 4.6.9. The relationship between Org-Cult and S-Perf remains significant, with a beta of 0.219 and a t-statistic of 3.855 (p < 0.001), indicating that organizational culture significantly impacts supply chain performance. Moreover, S-Buyer-Coll significantly influences Org-Cult (beta = 0.147, t-stat = 3.201, p = 0.001), reaffirming the importance of buyer collaboration in shaping organizational culture. The direct impact of STG-sourcing on Org-Cult is strong and highly significant (beta = 0.567, t-stat = 15.558, p < 0.001),



further emphasizing the critical role of strategic sourcing in fostering a positive organizational culture. However, the relationships between S-integration and Org-Cult (beta = 0.009, p = 0.747) and between S-integration and S-Perf (beta = 0.021, p = 0.631) remain insignificant, suggesting that supply chain integration does not have a strong influence on either organizational culture or supply chain performance in this model. The direct effect of STG-sourcing on S-Perf is again confirmed to be highly significant (beta = 0.585, t-stat = 9.642, p < 0.001), reaffirming the key role of strategic sourcing in driving supply chain performance. These findings highlight the importance of organizational culture as a mediator, particularly in the relationship between strategic sourcing and supply chain performance.

Determination of Coefficients

In a structural equation modeling (SEM) framework, the R-squared (R²) value is a key indicator of the model's explanatory power. It represents the proportion of the variance in the dependent variable that is explained by the independent variables.

Table 6. Determination of Coefficients

Constructs	R Square
Organisational Culture	0.391
Supply Chain Performance	0.599

In this study, the R² values for Organizational Culture (Org-Cult) and Supply Chain Performance (S-Perf) are presented in Table 6. The R² value for Org-Cult is 0.391, meaning that approximately 39.1% of the variance in Organizational Culture can be explained by the independent variables. The R² value for S-Perf is higher at 0.599, suggesting that 59.9% of the variance in Supply Chain Performance is explained by the constructs included in the model. These values indicate that the model has moderate to high explanatory power, with a strong ability to explain the variance in supply chain performance outcomes.

Table 7. Effect Size (f²)

Constructs	Org-Cult	Effect Size	S-Perf	Effect Size (f ²)
Org-Cult		N/A	0.073	Medium
S-Buyer-Coll	0.032	Medium	0.017	Small
S-integration	0.001	No effect	0.002	No effect
STG-sourcing	0.479	Large	0.524	Large

The results presented in Table 7 show the effect sizes (f²) of various constructs on organizational culture (Org-Cult) and supply chain performance (S-Perf). Effect size is a crucial measure in evaluating the strength of relationships between the constructs in the model. A medium effect size (0.073) is observed for organizational culture on supply chain performance, indicating a moderate influence of organizational culture on the overall performance of the supply chain. For strategic buyer collaboration (S-Buyer-Coll), a medium effect size (0.032) is observed on organizational culture, but a small effect size (0.017) on supply chain performance, implying that while collaboration with buyers moderately affects the culture, its direct impact on performance is weaker. Supply chain integration (S-integration), on the other hand, shows no significant effect on either organizational culture or supply chain performance, as reflected by the very small values (0.001 and 0.002,



respectively). This suggests that integration efforts may not play a significant role in influencing these variables. In contrast, strategic sourcing (STG-sourcing) demonstrates large effect sizes on both organizational culture (0.479) and supply chain performance (0.524), indicating a strong and critical impact of sourcing strategies on both the culture of the organization and its supply chain outcomes.

Table 4.7 Predictive relevance

Constructs	SSO	SSE	Q² (=1-SSE/SSO)
Org-Cult	1932	1469.013	0.240
S-Perf	1932	1269.054	0.343

Table 4.6.11 presents the predictive relevance (Q²) for organizational culture (Org-Cult) and supply chain performance (S-Perf), which are the endogenous constructs in the model. The Q² value measures the predictive capability of the model, with higher values indicating stronger predictive power. For organizational culture, the Q² value is 0.240, suggesting that the model has a moderate ability to predict variations in this construct. This indicates that the relationships modeled for organizational culture are relatively strong, and the model is reliable in forecasting changes in this variable. Supply chain performance has a higher Q² value of 0.343, indicating a stronger predictive relevance. This suggests that the model is highly capable of explaining the variance in supply chain performance based on the exogenous constructs included in the study.

Conclusion and Recommendation

Conclusion

This study concludes that strategic sourcing and buyer-supplier collaboration are critical drivers of supply chain performance among SMEs. Strategic sourcing significantly improves performance, particularly when SMEs adopt long-term relationships with key suppliers and strategically manage their sourcing practices. Buyer-supplier collaboration also positively affects performance by enhancing communication, fostering trust, and streamlining joint operations between supply chain partners. While supply chain integration was hypothesized to have a strong direct impact on performance, the findings did not support this expectation. This may be attributed to the operational complexities that SMEs often face when attempting to fully integrate their supply chain processes.

Recommendations

Based on the findings of this research, several recommendations can be made to enhance supply chain performance within SMEs:

- i. SMEs should place greater emphasis on strategic sourcing by fostering long-term relationships with suppliers and investing in supply chain planning tools that support more efficient procurement practices.
- ii. Firms should actively cultivate close, trust-based relationships with their suppliers, emphasizing open communication and joint problem-solving. Establishing collaborative frameworks will enable SMEs to better adapt to market changes and reduce operational risks.



- iii. It is critical for SMEs to build a positive organizational culture that encourages innovation, agility, and commitment to shared goals.
- iv. Despite the insignificant direct effect found between supply chain integration and performance, SMEs should continue to pursue integration practices, particularly through the adoption of digital technologies that can facilitate greater information sharing, improve decision-making, and reduce costs in the long run.

Finally, future studies should investigate the potential reasons behind the weak link between supply chain integration and performance among SMEs. Further research could also explore the moderating factors, such as technological capability or external environmental pressures, that may influence the effectiveness of supply chain integration.

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