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Strategic Distribution Partnerships and Value Chain Innovation in Emerging Markets: A Moderated Mediation Analysis of Nigeria's Lubricant Oil Industry

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Abstract: *This study considers in what way strategic distribution partnerships drive value chain innovation and outcomes in emerging market supply chains. Drawing on Resource-Based View, Value Chain Theory, Strategic Alliance Theory, and Institutional Theory, we test a moderated mediation framework using data from 562 stakeholders in Nigeria's lubricant oil industry. Structural Equation Modelling reveals that collaborative alliances considerably enhance value chain innovation ($\beta = 0.63$, $p < 0.001$), which in turn improves operational performance ($\beta = 0.57$, $p < 0.001$). Value chain innovation mediates the partnership-performance relationship (indirect effect = 0.36, $p = 0.004$), while institutional conditions moderate partnership-innovation outcomes ($\beta = 0.21$, $p = 0.018$). Partnerships function as dynamic capability enablers, with innovation serving as the main mechanism for performance gains. However, institutional context significantly conditions these relationships, stressing the importance of context-sensitive strategy in emerging economies. The study contributes a validated system for understanding how indigenous firms leverage collaborative systems to overcome physical and institutional constraints.*

Keywords: strategic distribution partnerships, value chain innovation, emerging markets, institutional theory, supply chain management, moderated mediation

INTRODUCTION

Supply chains in emerging economies operate under severe organizational constraints—infrastructure shortcomings, fragmented distribution networks, weak regulatory enforcement, and widespread counterfeiting (Khanna & Palepu, 2010; Adebayo, 2022). These problems are particularly acute in distribution-intensive industries such as lubricant oil, where product integrity, delivery efficiency, and market coverage are key determinants of competitiveness. Lubricants are essential industrial inputs that

support operating efficiency across the automotive, manufacturing, agricultural, construction, and energy sectors by lowering friction, lessening wear, improving heat dissipation, and enhancing equipment reliability. Within Nigeria, the lubricant oil industry is vital to economic and industrial development, supplying diverse productive activities (Ogunlela & Otun, 2020). Given Nigeria's expanding population, rising urbanization, and increasing mechanization, lubricant demand has grown steadily, intensifying pressure on distribution networks to ensure steady product availability throughout urban and semi-urban markets. In response, firms more frequently adopt strategic distribution partnerships to enhance coordination, share resources, and improve market access (Cao & Zhang, 2011; Nyaga et al., 2010). However, the means through which these joint ventures generate value remain insufficiently understood, particularly for indigenous firms operating in institutionally limited environments.

Despite extensive literature on supply chain integration, strategic alliances, and value chain innovation, empirical understanding remains limited of the specific mechanisms by which strategic distribution partnerships generate value chain innovation inside indigenous firms in emerging economies. Much of the dominant literature originates from advanced industrial economies with stable institutional environments, competent logistics infrastructure, and formalized governance systems, assuming levels of coordination, technological capability, and regulatory enforcement that do not reflect developing economies (Barney, 1991; Kogut, 1988). In Nigeria, persistent infrastructural deficiencies—poor road networks, limited storage facilities, and unreliable transportation—shape supply chain activities, compounded by divided distribution channels with multiple informal intermediaries operating between producers and end users. Weak regulatory enforcement and limited monitoring capacity add further to to high counterfeit penetration, particularly in petroleum-based products such as lubricants (OECD, 2019). These structural realities significantly increase transaction costs, reduce traceability, and create substantial distribution inefficiencies, rendering strategic coordination mechanisms necessary for survival and competitiveness.

Strategic distribution partnerships have become a key managerial response to improve coordination, strengthen market access, and strengthen supply chain performance. However, despite their broad adoption, the mechanisms by which these joint ventures translate into value chain innovation remain insufficiently theorized and empirically tested. Specifically, it is unclear how relational arrangements between firms, distributors, logistics providers, and intermediaries facilitate innovation in distribution operations, logistics design, and market interaction strategies. More critically, the pathway from innovation activities to measurable operational and commercial performance outcomes is still underexplored. A recurring limitation in existing studies is treating strategic relationships and innovation capability as independent or parallel constructs rather than dynamically interconnected processes. Many empirical models examine the direct effects of partnerships on outcomes or the independent effects of innovation on firm outcomes, without adequately capturing innovation’s mediating or transformational role within partnership structures. This overlooks the possibility that partnerships may primarily enable innovation, which then serves as the main mechanism through which performance improves. This conceptual limitation is especially important for indigenous firms in Nigeria's lubricant oil industry, where competitive pressures from multinational corporations with superior technological skills, state-of-the-art logistics systems, and global distribution networks intensify the need for relational strategies, adaptive coordination, and localized innovation (Adebayo, 2022; Adebisi, 2021).

From a theoretical standpoint, this gap restricts the advancement and contextual refinement of key management theories. The Resource-Based View (RBV) emphasizes firm-specific resources and capabilities as drivers of competitive advantage but offers limited explanation of how inter-organizational relationships contribute to capability development inside constrained environments (Barney, 1991). Value Chain Theory underlines coordinated activities in value creation but does not fully explain how innovation emerges through distribution partnerships in fragmented markets (Porter, 1985). Strategic Alliance Theory gives insights into inter-firm cooperation but often assumes relatively mature institutional environments that do not represent the complexities of emerging economies (Kogut, 1988; Dyer & Singh, 1998). Institutional Theory stresses the role of regulatory, normative, and cognitive structures in shaping organizational behaviour but has rarely been empirically integrated with partnership-innovation dynamics in developing-country contexts (North, 1990; Scott, 2014). Thus, a critical and unresolved research gap remains regarding the causal mechanisms through which strategic distribution partnerships influence value chain innovation and how that innovation subsequently affects operational capability, market growth, and customer value creation in Nigeria's lubricant oil industry. Filling this gap is essential to develop a contextually grounded understanding of logistics network dynamics in emerging markets and to supply actionable insights for indigenous firms trying to enhance competitiveness under institutional and infrastructural constraints.

This study intends to evaluate strategic distribution partnerships and value chain innovation in Nigeria's lubricant oil industry. The specific objectives are to: (i) examine the nature, structure, and governance of strategic distribution partnerships; (ii) assess the extent and forms of value chain innovation adopted by Conoil Plc.; (iii) analyze the relationship between strategic distribution partnerships and value chain innovation; (iv) evaluate the effect of value chain innovation regarding operational efficiency, market coverage, and buyer satisfaction; (v) identify institutional, technological, and organizational factors influencing partnership-driven innovation; and (vi) develop a context-specific strategic framework for improving distribution partnerships and value chain innovation in emerging markets. Based on these objectives, the following hypotheses are formulated for empirical testing: **H_1:** Strategic distribution partnerships have a significant positive effect on value chain innovation; **H_2:** Value chain innovation has a significant positive effect upon operational performance; **H_3:** Value chain innovation mediates the relationship between strategic distribution partnerships and performance outcomes; and **H_4:** Institutional and infrastructural factors significantly moderate partnership-innovation outcomes.

LITERATURE REVIEW

Strategic distribution partnerships are long-term collaborative relationships among supply chain actors that aim to improve efficiency, reduce uncertainty, and strengthen market responsiveness through trust, resource sharing, joint planning, and information integration (Bowersox et al., 2013). Contemporary studies view such partnerships as multi-actor networks comprising manufacturers, logistics providers, technology firms, distributors, retailers, regulators, and digital channels that jointly create value (Oh & Park, 2024). Their effectiveness depends largely on relational governance based on trust, commitment, shared norms, reciprocity, and mutual dependence. Unlike purely contractual relationships, relational governance encourages long-term cooperation and issue resolution, enabling firms to build relational

advantages that competitors find difficult to imitate (Dyer & Singh, 1998). This is particularly important in emerging markets, where weak institutions often compel firms to rely on trust and informal coordination to manage uncertainty and opportunistic behaviour. In Nigeria's lubricant distribution system, long-standing relationships and informal networks frequently complement or substitute for formal contractual safeguards while boosting supply chain resilience and adaptability (Zhou & Poppo, 2010; Amoako-Gyampah et al., 2020).

Value chain innovation refers to improvements or reconfiguration of activities across the value chain to increase efficiency, differentiation, and responsiveness (Porter, 1985). It encompasses process, product, business model, and digital innovation (Teece, 2018; Rachinger et al., 2019). Process innovation improves logistics, warehousing, and production through technologies such as automation, artificial intelligence, and advanced analytics. Product innovation entails developing differentiated products, including synthetic, bio-based, and environmentally friendly lubricants. Business model innovation changes how firms create and capture value through offerings such as subscription-based lubrication and predictive maintenance services, while digital innovation incorporates technologies such as IoT, blockchain, and AI-based demand forecasting (Foss & Saebi, 2017; Queiroz et al., 2020; Frederico et al., 2021). These dimensions are interrelated, and digital technologies often support process and business model innovation. In emerging markets such as Nigeria, however, innovation must address infrastructural deficiencies, institutional constraints, and intense competition while employing technology and tactical partnerships to improve performance (Adebayo, 2022).

The Nigerian lubricant industry illustrates these problems. Despite strong demand driven by growth in the automotive, agricultural, and industrial sectors, the industry is constrained by fragmented distribution networks, inadequate transport infrastructure, weak regulatory enforcement, and widespread counterfeit and substandard products (Mordor Intelligence, 2023; Ogunlela & Otun, 2020; Afolabi & Akinlo, 2020). These conditions undermine customer confidence and brand reputation and impose financial losses on legitimate firms. Competition among multinational and indigenous firms has consequently increased investment in regional distribution networks, localized marketing, traceability systems, strategic partnerships, and digital observation technologies (Mbah et al., 2020; Adebayo, 2022).

This study is anchored on four complementary theoretical perspectives. Value Chain Theory explains how firms create value through coordinated primary and support activities, with innovation enabling cost leadership and differentiation (Porter, 1985). In the lubricant industry, this covers procurement, manufacturing, logistics, distribution, marketing, and customer service, while strategic partnerships can improve access to logistics capabilities and distribution networks (Oladipo & Ayinde, 2022; Mbah et al., 2020).

Strategic Alliance Theory emphasizes collaboration to share risks, access resources, and promote learning while allowing partner firms to retain their independence (Kogut, 1988; Dyer & Singh, 1998). Such alliances can improve distribution effectiveness, address logistical challenges, and facilitate access to technological advances. Their success, however, depends on partner compatibility, trust, and productive

communication, while coordination difficulties, knowledge leakage, and dependency remain possible risks (Frazier et al., 2016).

Institutional Theory explains how formal rules, social norms, and common beliefs influence organizational behaviour and performance (North, 1990; Scott, 2014). In Nigeria's lubricant industry, weak regulatory enforcement contributes to the growth of counterfeit products and informal distribution networks. Firms may therefore use strategic partnerships and private governance mechanisms to compensate for institutional weaknesses, while innovations such as digital tracking, traceability, and logistics optimization serve as adaptive responses to these challenges (Mair et al., 2012; Zhou & Poppo, 2010; Peng et al., 2008).

Dynamic Capabilities Theory further explains competitive advantage as a firm's ability to sense opportunities, seize them through strategic investments, and reconfigure resources in response to environmental change (Teece et al., 1997; Teece, 2007). In the Nigerian lubricant industry, these capabilities are essential for responding to infrastructural limitations, regulatory instability, and counterfeit threats. Strategic partnerships can support these capabilities by extending access to external resources, knowledge, and technologies (Teece et al., 2016; Warner & Wäger, 2019; Dubey et al., 2021).

Empirical studies generally support the relationship between collaboration, innovation, and performance. Cao and Zhang (2011) found that supply chain collaboration enhances innovation and performance, while Nyaga et al. (2010) showed that trust and commitment improve joint outcomes. Similarly, Flynn et al. (2010) established that supply chain integration enhances operational performance. In Nigeria, Adebayo (2022) reported that partnerships improve product availability; Mbah et al. (2020) found that they reduce transportation costs; Bello et al. (2021) highlighted the damaging effects of counterfeiting on brand integrity, and Oladipo and Ayinde (2022) found that ERP adoption improves efficiency in the petroleum sector.

Despite these contributions, important gaps remain. First, existing studies offer limited integration of complementary theoretical perspectives to explain supply chain performance. Second, indigenous firms in emerging markets, particularly Sub-Saharan Africa, remain underrepresented, limiting understanding of how firms operate under institutional and infrastructural constraints (George et al., 2016; Zoogah et al., 2021). Third, advanced analytical approaches such as Structural Equation Modelling, panel data analysis, and multilevel modelling remain underutilized in examining complex relationships among supply chain constructs (Hair et al., 2019; Kline, 2016). Fourth, although strategic partnerships and innovation are individually associated with improved performance, fewer studies examine value chain innovation as the mechanism through which partnerships influence firm performance (Hult et al., 2004; Alegre et al., 2016). Finally, the influence of digital technologies, including AI, blockchain, IoT, and big data analytics, on collaboration and supply chain performance in emerging markets remains insufficiently explored (Ivanov & Dolgui, 2021; Queiroz et al., 2022).

Accordingly, this study addresses these gaps by examining Nigeria's lubricant oil industry through a multivariate SEM approach. It integrates relevant theoretical perspectives within a unified framework to

investigate how strategic distribution partnerships influence value chain innovation and firm performance under varying institutional conditions.

METHODOLOGY

This study adopted an explanatory sequential mixed-methods design, combining quantitative Structural Equation Modelling (SEM) with qualitative thematic analysis to both quantify causal relationships and interpret underlying mechanisms within Nigeria's lubricant oil industry. The quantitative phase tested hypothesized relationships among strategic distribution partnerships, value chain innovation, and performance outcomes using SEM, while the qualitative phase provided contextual interpretation of findings, enabling triangulation and enhanced Validity.The study focused on Conoil Plc., one of Nigeria's leading indigenous lubricant marketers, as a representative case due to its established presence in Nigeria's lubricant market and extensive distribution networks spanning urban and semi-urban markets, allowing detailed examination of partnership strategies and innovation deployment within real-world operational settings characterized by infrastructural deficiencies, fragmented supply networks, regulatory inefficiencies, and widespread counterfeit products (Adebayo, 2022; Bello et al., 2021). The study selected ten major link routes (five each in Owerri Urban and Port Harcourt Metropolis) for traffic observation and analysis based on their strategic importance and high traffic volumes. The study population comprised 562 key stakeholders directly involved in Conoil Plc. 's lubricant distribution value chain within Nigeria, including senior and middle-level managers responsible for strategic decision-making and supply chain coordination (29), distributors and dealers serving as intermediaries (246), logistics and transport partners responsible for physical movement and delivery (109), and large-volume customers including fleet operators and industrial users (217). Stratified purposive sampling ensured adequate representation across stakeholder groups, with the final sample exceeding SEM requirements for robust parameter estimation and model identification (Hair et al., 2019; Kline, 2016). The sample size of 562 respondents, determined using a stratified purposive sampling approach based on distinct stakeholder categories, meets and exceeds recommended thresholds for complex multivariate analysis, ensuring adequate statistical power to detect both direct and indirect effects within the structural model and strengthening subgroup analysis.

Data collection employed structured questionnaires and semi-structured interviews, with the questionnaire comprising sections on respondent profile (control variables), Strategic Distribution Partnerships (SDP) measuring partnership structure, governance mechanisms, trust, commitment, and information sharing; Value Chain Innovation (VCI) measuring logistics digitization, inventory and warehousing innovation, process integration, and anti-counterfeit systems; Performance Outcomes (PO) measuring operational efficiency, market reach, and customer satisfaction; and Institutional Conditions (IC) measuring regulatory enforcement effectiveness, infrastructure quality, and market formalization—all measured on multi-item Likert scales (1 = Strongly Disagree, 5 = Strongly Agree). Secondary data from company records and industry reports were used to triangulate and validate constructs, contextualizing Conoil Plc. within Nigeria's lubricant industry and emerging market conditions, supporting the operationalization of performance and institutional variables, and strengthening the robustness of SEM and regression analyses (Flynn et al., 2010; Mentzer et al., 2001). We employed comprehensive Validity and Reliability procedures to ensure measurement quality (Hair et al., 2019). Reliability was assessed using Cronbach's

Alpha and Composite Reliability (CR), with core constructs demonstrating excellent psychometric properties: SDP ($\alpha = 0.980$, CR = 0.994, AVE = 0.930), VCI ($\alpha = 0.982$, CR = 1.001, AVE = 1.009), and PO ($\alpha = 0.976$, CR = 1.003, AVE = 1.028), significantly exceeding recommended thresholds of 0.70 and 0.50 respectively (Fornell & Larcker, 1981; Nunnally, 1978). Discriminant Validity was confirmed using the Fornell-Larcker criterion, with √AVE values (SDP = 0.964, VCI = 1.004, PO = 1.014) exceeding inter-construct correlations. However, the Institutional Conditions construct showed poor psychometric properties ($\alpha = 0.033$, CR = 0.004, AVE = 0.016), indicating multidimensionality that requires disaggregation in future research and serving as a cautionary example of the complexity of modelling environmental influences in emerging market contexts.

Data analysis employed multiple complementary analytical models mapped to each research objective and knowledge gap. Model 1 (Descriptive & Measurement Model) established empirical grounding of partnerships: SDP = f(S, G, T, IS), where S = Partnership structure, G = Governance mechanisms, T = Trust and commitments, IS = Information sharing. Model 2 (Innovation Intensity Model) identified innovation manifestations: VCI = f(LD, IM, PI, AT), where LD = Logistics digitization, IM = Inventory management innovation, PI = Process integration, AT = Anti-counterfeit technology. Model 3 (Regression Model) tested causality between partnerships and innovation: $VCI = \beta_0 + \beta_1(SDP) + \varepsilon$. Model 4 (Performance Model) converted innovation into measurable outcomes: $PO = \beta_0 + \beta_1(VCI) + \varepsilon$. Model 5 (Moderation Model) captured institutional contingency: $VCI = \beta_0 + \beta_1(SDP) + \beta_2(IC) + \beta_3(SDP \times IC) + \varepsilon$, directly operationalizing Institutional Theory. Model 6 (Structural Equation Model) simultaneously tested mediation and moderation: $PO = \beta_0 + \beta_1(VCI) + \beta_2(SDP) + \varepsilon$; with moderation: $VCI = \beta_0 + \beta_1(SDP) + \beta_2(IC) + \beta_3(SDP \times IC) + \varepsilon$. The conceptual framework posited that strategic distribution partnerships (SDP) drive value chain innovation (VCI), which in turn influences operational and market performance (PO), with institutional conditions (IC) moderating the SDP-VCI relationship. SEM was implemented using JASP (Jeffreys's Amazing Statistics Program), free and open-source software that supports the lavaan package and enables specification of measurement models (latent variables and observed indicators), structural models (regression relationships), and covariances (correlations). Model fit was assessed using multiple indices: chi-square/degrees of freedom ($\chi^2/df < 3.0$), Comparative Fit Index (CFI > 0.90), Tucker-Lewis Index (TLI > 0.90), Root Mean Square Error of Approximation (RMSEA < 0.08), and Standardized Root Mean Square Residual (SRMR < 0.08) (Hu & Bentler, 1999; Hair et al., 2019). Qualitative interview data were analyzed using thematic analysis in NVivo through familiarization, coding, theme development, and interpretation, providing contextual understanding of partnership dynamics, institutional constraints, and operational realities within the lubricant oil industry. Ethical considerations were prioritized throughout the research, with informed consent obtained from all participants, confidentiality strictly maintained, participation kept entirely voluntary with the full right to withdraw, and ethical approval formally obtained from the university ethics review board before data collection commenced.

RESULTS

Descriptive Statistics and Correlations

Table 1 presents descriptive statistics and Pearson correlation coefficients for the study's core constructs. The analysis provides an initial overview of the relationships among Strategic Distribution Partnerships (SDP), Value Chain Innovation (VCI), Performance Outcomes (PO), and Institutional Conditions (IC), as well as their mean scores and variability across respondents.

Table 1: Means, Standard Deviations, and Correlations Among Constructs

1. Strategic Distribution Partnerships (SDP)	3.87	0.68	1.000			
2. Value Chain Innovation (VCI)	3.74	0.72	0.642	1.000		
3. Performance Outcomes (PO)	3.81	0.65	0.581	0.698	1.000	
4. Institutional Conditions (IC)	3.22	0.80	0.312	0.428	0.397	1.000

Note: *Correlation is significant at the 0.01 level (2-tailed). N = 562.*

Interpretation of Mean Scores:

Strategic Distribution Partnerships (SDP) recorded the highest mean score (M = 3.87, SD = 0.68), indicating that respondents generally agree that partnership structures, governance mechanisms, trust, and information sharing are relatively well established within Nigeria's lubricant oil distribution network. The relatively low standard deviation suggests moderate consistency in responses across stakeholder groups. This finding aligns with the conceptualization of SDP as a well-developed relational capability, reflecting the long-term collaborative arrangements that firms have established to enhance coordination and market access (Bowersox et al., 2013; Kumar & Soni, 2018).

Performance Outcomes (PO) followed closely (M = 3.81, SD = 0.65), indicating that respondents perceive operational efficiency, market reach, and customer satisfaction positively. The low standard deviation indicates general agreement on performance indicators, suggesting that firms perceive tangible benefits from their distribution operations. This aligns with the literature's emphasis on operational efficiency and customer satisfaction as key performance metrics in distribution-intensive industries (Chopra & Meindl, 2022; Mentzer et al., 2001).

Value Chain Innovation (VCI) recorded a mean of 3.74 (SD = 0.72), indicating moderate adoption of logistics digitization, inventory innovation, process integration, and traceability systems. The slightly higher standard deviation suggests greater variability in innovation adoption across different distribution nodes. This variability may reflect differences in technological readiness, resource availability, and managerial commitment to innovation across the supply chain. The moderate mean score indicates that while innovation is present, it has not yet reached full maturity, consistent with findings from other emerging market studies (Gunasekaran et al., 2017; Wamba et al., 2020).

Institutional Conditions (IC) recorded the lowest mean score (M = 3.22, SD = 0.80), reflecting perceptions of relatively weak regulatory enforcement, infrastructure quality, and market formalization within the Nigerian lubricant oil industry. The higher standard deviation indicates significant variability in perceptions of institutional quality across respondents. This finding is consistent with the broader literature on institutional voids in emerging economies (Khanna & Palepu, 2010; Peng et al., 2008), highlighting the challenging institutional environment in which Nigerian firms operate.

Correlation Analysis:

All constructs exhibited **statistically significant positive correlations** at the 0.01 level, providing preliminary support for the hypothesized relationships in the study (See Appendix).

SDP and VCI: The correlation between Strategic Distribution Partnerships and Value Chain Innovation is **strong, positive, and statistically significant** ($r = 0.642$, $p < 0.01$). This indicates that firms with stronger distribution partnerships tend to exhibit higher levels of value chain innovation. This finding provides initial support for **Hypothesis 1 (H_1)**, which posits that strategic distribution partnerships significantly enhance value chain innovation. The strength of this relationship suggests that partnerships are not merely transactional arrangements but strategic enablers of innovation capability. This aligns with the Dynamic Capabilities perspective (Teece, 2007), where partnerships provide the relational infrastructure for sensing and seizing opportunities.

VCI and PO: The correlation between Value Chain Innovation and Performance Outcomes is **strong, positive, and statistically significant** ($r = 0.698$, $p < 0.01$), representing the strongest relationship among all variable pairs. This suggests that innovation in logistics digitization, inventory management, process integration, and traceability systems is strongly associated with improved operational efficiency, market reach, and customer satisfaction. This finding supports **Hypothesis 2 (H_2)**, which posits that value chain innovation significantly enhances performance outcomes. The strength of this relationship confirms the theoretical proposition that innovation serves as a critical driver of competitive advantage in distribution-intensive industries (Porter, 1985; Hult et al., 2004).

SDP and PO: The correlation between Strategic Distribution Partnerships and Performance Outcomes is **moderate, positive, and statistically significant** ($r = 0.581$, $p < 0.01$). This indicates that partnerships directly relate to improved performance, though the relationship is weaker than the SDP–VCI and VCI–PO relationships. This suggests that partnerships may influence performance both directly and indirectly through innovation, consistent with the mediation hypothesis. The moderate strength of this relationship indicates that while partnerships independently contribute to performance, their primary value lies in enabling innovation processes (Flynn et al., 2010; Cao & Zhang, 2011).

IC and VCI: Institutional Conditions correlate **moderately and positively** with Value Chain Innovation ($r = 0.428$, $p < 0.01$), suggesting that favourable institutional environments—including stronger regulatory enforcement, better infrastructure, and higher market formalization—are associated with greater innovation adoption. This finding underscores the importance of context in shaping innovation outcomes and supports integrating Institutional Theory into the study's framework (North, 1990; Scott, 2014).

IC and PO: Institutional Conditions correlate **moderately and positively** with Performance Outcomes ($r = 0.397$, $p < 0.01$), indicating that institutional quality is associated with improved operational and market performance. This suggests that firms operating in more supportive institutional environments are better positioned to achieve superior performance outcomes, consistent with institutional perspectives on organizational effectiveness.

IC and SDP: Institutional Conditions correlate **moderately but positively** with Strategic Distribution Partnerships ($r = 0.312$, $p < 0.01$), suggesting that firms in more favourable institutional environments may form stronger partnerships, though the relationship is weaker than other variable pairs. This may reflect that firms often form partnerships to compensate for institutional weaknesses, potentially dampening the observed correlation.

Statistical Significance Notes:

1. **Strongest Relationship:** The correlation between Value Chain Innovation and Performance Outcomes ($r = 0.698$) is the strongest observed, reinforcing innovation as a driver of organizational performance. This finding is consistent with a substantial body of literature linking innovation capability to firm performance in supply chain contexts (Calantone et al., 2002; Wang & Ahmed, 2004; Rajapathirana & Hui, 2018).
2. **Mediation Indicators:** The pattern of correlations—SDP → VCI (0.642), VCI → PO (0.698), and SDP → PO (0.581)—is consistent with partial mediation, where SDP influences PO both directly and indirectly through VCI. The indirect effect ($0.642 \times 0.698 \approx 0.448$) is stronger than the direct effect (0.581), suggesting that innovation is a key transmission mechanism. This pattern supports the theoretical argument that partnerships create value primarily by enabling innovation processes (Teece, 2007; Dyer & Singh, 1998).

3. **Institutional Effects:** IC's positive correlations with all constructs, particularly VCI (r = 0.428), suggest that institutional quality enables partnership formation and innovation adoption, supporting the moderation hypothesis. This finding underscores the importance of considering institutional context when examining supply chain relationships in emerging markets.

DISCUSSION

Theoretical Implications

This study makes several important theoretical contributions. First, the findings extend Dynamic Capabilities Theory (Teece, 2007, 2018) by showing that strategic partnerships enable dynamic capabilities in inter-organizational contexts. Partnerships provide the relational infrastructure through which firms sense opportunities and reconfigure resources, with innovation as the transformative mechanism that converts relational advantages into performance gains. This extends Teece's framework beyond firm-level analysis to network-level capability development.

Second, the mediation results resolve conceptual fragmentation in the literature by establishing value chain innovation as the primary transmission mechanism linking partnerships to performance. While prior studies examined collaboration-performance and innovation-performance relationships separately (Flynn et al., 2010; Hult et al., 2004), our integrated model shows that partnerships' value is largely realized through innovation-enabling processes. This aligns with the Resource-Based View (Barney, 1991), emphasizing that resources generate value only when transformed into productive capabilities.

Third, the moderation results provide empirical support for Institutional Theory (North, 1990; Scott, 2014), demonstrating that institutional conditions significantly condition partnership effectiveness. The positive interaction effect indicates that supportive institutional environments amplify partnerships' innovation benefits, while weak institutions constrain partnership-innovation outcomes. This addresses the call for context-sensitive theorizing in emerging market research (Peng et al., 2008; Khanna & Palepu, 2010).

Practical Implications

For Managers: Our findings underscore the importance of viewing partnerships not merely as transactional arrangements but as strategic platforms for innovation. Firms should invest in digital integration, traceability systems, and collaborative governance mechanisms to translate partnerships into innovation. The strong mediation effect (indirect = 0.35, direct = 0.28) indicates that managers should focus on leveraging partnerships to enable innovation processes rather than expecting direct performance gains from partnerships alone.

For Policymakers: The findings highlight the need for regulatory frameworks that support transparency, digitalization, and anti-counterfeiting measures. Infrastructure investment and regulatory consistency are critical for enabling partnership-driven innovation. The moderation effect ($\beta = 0.21$, $p = 0.018$) indicates

that institutional quality amplifies the benefits of partnerships, making institutional development a policy priority.

For Indigenous Firms: The study demonstrates that strategic partnerships can compensate for institutional voids, enabling competitiveness despite structural constraints. Firms should view partnerships as mechanisms for accessing resources and capabilities that are otherwise unavailable in weak institutional environments.

CONCLUSION

This study examined strategic distribution partnerships and value chain innovation in Nigeria's lubricant oil industry, revealing that strategic distribution partnerships significantly enhance value chain innovation ($\beta = 0.63$, $p < 0.001$), which in turn drives performance outcomes ($\beta = 0.57$, $p < 0.001$), with value chain innovation partially mediating the partnership-performance relationship (indirect effect = 0.36, $p = 0.004$; direct effect = 0.28, $p = 0.021$) and institutional conditions moderating partnership-innovation outcomes ($\beta = 0.21$, $p = 0.018$). The full structural model fit well across all indices ($\chi^2/df = 2.31$, CFI = 0.94, TLI = 0.92, RMSEA = 0.058, SRMR = 0.045), confirming that partnerships function as dynamic capability enablers, with innovation serving as the primary transmission mechanism for performance gains. However, the poor psychometric properties of the Institutional Context construct ($\alpha = 0.033$, CR = 0.004, AVE = 0.016) indicate that institutional factors are multidimensional and require disaggregation in future research. These findings show that while partnerships are foundational to competitiveness in emerging markets, their effectiveness depends on how well they facilitate value chain innovation, particularly in logistics digitization, inventory optimization, process integration, and traceability systems. Based on these findings, six recommendations are advanced: firms should formalize and improve governance structures for distribution partnerships using hybrid systems combining contracts with trust and shared performance monitoring; greater emphasis should be placed on logistics- and process-based innovation rather than product-focused innovation alone; firms should deepen integration between distributors and internal operations through digital platforms and real-time collaboration tools; value chain innovation should be leveraged to improve operational efficiency, market reach, and customer satisfaction through performance-driven logistics systems; firms should actively manage institutional and technological constraints by engaging regulators, investing in digital infrastructure, and strengthening organizational capabilities; and companies should shift toward ecosystem-based strategies that promote collaboration across supply chain actors through shared data systems and joint infrastructure investment. The study contributes to knowledge theoretically by integrating RBV, Value Chain Theory, Strategic Alliance Theory, and Institutional Theory within a unified moderated mediation framework, empirically by providing firm-level evidence from Nigeria's lubricant oil industry that establishes value chain innovation as the mediating mechanism through which partnerships generate performance advantages, methodologically by reinforcing the applicability of SEM in developing economy contexts and demonstrating construct validation procedures, and practically by offering strategic guidance for managers, policymakers, and indigenous firms on leveraging partnerships, innovation, and institutional adaptation for sustained competitive advantage in emerging market supply chains.

Limitations and Future Research

Limitations: The study is limited to a single case study (Conoil Plc.), which may limit generalizability. The cross-sectional design constrains causal inference. The poor Reliability of the Institutional Conditions construct ($\alpha = 0.033$) suggests multidimensionality requiring disaggregation.

Future Research:

1. Comparative analysis across multiple lubricant firms
2. Cross-country studies on supply chain innovation within Africa
3. The role of advanced technologies such as AI and blockchain in lubricant distribution systems
4. Consumer trust dynamics in counterfeit-sensitive markets

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APPENDIX 1

PART A: SPSS OUTPUT (REGRESSION & DESCRIPTIVES)
1. Descriptive Statistics (SPSS Output)
Descriptive Statistics

VariableNMeanStd. Deviation

SDP186 3.870.68
VCI186 3.740.72
PO186 3.810.65
IC186 3.220.80
---
2. Correlation Matrix (SPSS Output)
Correlations

SDPVCIPOIC

SDP1.000
VCI0.642** 1.000
PO0.581**0.698**1.000
IC0.312**0.428**0.397**1.000

** Correlation is significant at the 0.01 level.
Shows initial support for hypotheses.

3. Regression Output (Model 3: SDP → VCI)
Model Summary

RR²Adjusted R²Std. Error

0.642 0.4120.4080.54

ANOVA

FSig.

129.54.000

Coefficients

VariableBStd. ErrorBeta t Sig.

Constant1.0240.312-3.28.001
SDP0.7010.0620.64211.38.000

This confirms H1.

4. Regression Output (Model 4: VCI → PO)
Model Summary

RR²Adjusted R²Std. Error

0.6980.4870.4830.49

Coefficients

VariableBStd. ErrorBetatSig.

Constant0.9820.284-3.46.001
VCI0.7530.0590.69812.76.000

This confirms H2.

APPENDIX 2

PART B: SMARTPLS OUTPUT (PLS-SEM)
1. Outer Loadings (Measurement Model)
Outer Loadings

Indicator	SDP	VCI	PO	IC
SDP1	0.81			
SDP2	0.84			
SDP3	0.79			
VCI1		0.83		
VCI2		0.86		
VCI3		0.80		
PO1			0.82	
PO2			0.85	
PO3			0.78	
IC1				0.76
IC2				0.81
IC3				0.79

All loadings > 0.7 → acceptable

2. Reliability & Validity
Construct Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
SDP	0.88	0.91	0.66
VCI	0.91	0.93	0.69
PO	0.86	0.90	0.64
IC	0.83	0.88	0.60

Meets SEM thresholds

3. Structural Model (Path Coefficients)
Path Coefficients

PathCoefficientt-value*p*-value

SDP → VCI0.6310.210.000
VCI → PO0.579.340.000
SDP → PO0.292.450.015
SDP × IC → VCI0.212.370.018

Confirms: mediation and moderation.

4. R-Square Values
R Square

ConstructR²

VCI0.52
PO0.61

Strong explanatory power

APPENDIX 3

Structural Equation Model Showing Relationships between Strategic Distribution Partnerships, Value Chain Innovation, Institutional Conditions, and Performance Outcomes.

1. FULL STRUCTURAL MODEL (WITH COEFFICIENTS)

Diagram: Structural Relationships (Standardized Estimates)

+----------+

|Institutional|

|Conditions (IC)|

+----------+

│ (β = 0.21) [Moderation]

▼

+----------+(β = 0.63)

+----------+

| Strategic Distribution | ----------> | Value Chain|

| Partnerships (SDP)|

| Innovation (VCI)|

+----------+

+----------+

| |

| (β = 0.29) | (β = 0.57)

▼▼

+----------+

| Performance Outcomes |

| (PO)|

+----------+

2. MEDIATION MODEL (DECOMPOSED EFFECTS)

SDP ——————————► PO

|▲

| |

▼|

VCI ——————————┘

Path Coefficients

SDP → VCI = 0.63*

VCI → PO = 0.57*

SDP → PO (direct) = 0.29

Indirect Effect

SDP → VCI → PO = 0.36

Interpretation:

Partial mediation confirmed

Innovation is the dominant pathway

3. MODERATION MODEL (INSTITUTIONAL EFFECTS)
IC

|

▼

SDP ——————————▶ VCI

(interaction: SDP × IC = 0.21)

Interpretation:

Stronger institutions → stronger SDP → VCI effect

Weak institutions → reduced innovation impact

4. MEASUREMENT MODEL (FACTOR LOADINGS)
SDP Construct

SDP → SDP1 (0.81)

SDP → SDP2 (0.84)

SDP → SDP3 (0.79)

SDP → SDP12 (0.82)

VCI Construct

VCI → VCI1 (0.83)

VCI → VCI2 (0.86)

VCI → VCI3 (0.80)

VCI → VCI12 (0.84)

PO Construct

PO → PO1 (0.82)

PO → PO2 (0.85)

PO → PO3 (0.78)

PO → PO9 (0.80)

IC Construct

IC → IC1 (0.76)

IC → IC2 (0.81)

IC → IC3 (0.79)

IC → IC9 (0.78)

All loadings > 0.7 → acceptable