International Journal of
Supply Chain and Logistics
(IJSCL)

Effects of Upstream Supply Chain Integration on Production Logistics: A Case Study of Dangote Cement Plc

CARI Journal

International Journal of Supply Chain and Logistics
ISSN 2520-3983 (Online)
Vol. 10, Issue No. 2, pp 56 – 69, 2026
www.carijournals.org

Effects of Upstream Supply Chain Integration on Production Logistics: A Case Study of Dangote Cement Plc

Dr. Emmanuel Andem

University of Buckingham, UK, 2024

General Manager (Logistics and Distribution), Dangote Industries Limited, Alfred Rewane Road, Ikoyi, Lagos State, Nigeria.

https://orcid.org/0009-0009-2624-5448

Accepted: 20thMarch, 2026, Received in Revised Form: 3rdApril, 2026, Published:19th April, 2026

ABSTRACT

Purpose: The study aimed to determine the effects of upstream supply chain integration on production logistics.

Methodology: The study utilized qualitative research method. Interviews were conducted with samples collected purposively based on their knowledge of the subject area. Reflexivity shaped the ethical and methodological rigour and aided the thematic analysis of data collected.

Findings: Findings from the study showed that upstream supply chain integration has positive effects on production logistics effectiveness. Effective planning, coordination and control by Central Procurement of Dangote are listed as the critical links between supply chain integration and production logistics effectiveness.

Unique Contribution to Theory, Practice, and Policy: The outcome of the study highlighted factors that manager need to aid supply chain integration and production logistics effectiveness. These factors include conducting due diligence on all suppliers to aid the use of only pre-qualified vendors, centralization and consolidation of strategic business units' requirements by centralizing procurement for effective coordination and control of supplies received into the central warehouse and storage facilities, as well as the timely payment of purchase orders and letters of credit to motivate supplier performance. Study results further showed that suppliers benefit immensely from supports extended to them in the areas of documentation and upfront payments.

Keywords: *Supply Chain, Production, Logistics, Integration, Effectiveness, Dangote Cement.*

International Journal of Supply Chain and Logistics
ISSN 2520-3983 (Online)
Vol. 10, Issue No. 2, pp 56 – 69, 2026
www.carijournals.org

INTRODUCTION

Supply chains are central to economic growth and business competitiveness. They consist of interconnected entities involved in the flow of materials, services, and information from origin to end users (Mentzer et al., 2001). As complex adaptive systems, supply chains are increasingly information-driven and must respond to rapid changes in markets and consumer behaviour. Consequently, effective supply chain management (SCM) is essential and broadly defined as the integration and coordination of activities across supply chain partners (Stock and Boyer, 2009). SCM encompasses planning, sourcing, production, and logistics functions to meet market demands.

Supply chain integration (SCI) has been widely examined as a mechanism for improving performance. It involves the coordinated flow of materials and information within and across organizations, where internal integration strengthens cross-functional coordination and external integration enhances collaboration with suppliers and customers (Sundram et al., 2016). SCI is driven by cost reduction, quality improvement, and responsiveness, while improved visibility and information sharing strengthen coordination and competitive advantage (Dubey et al., 2020).

Logistics is a key component of SCM, focused on the efficient planning and control of material flows. Production logistics has gained importance due to its role in improving manufacturing efficiency and firm performance. Its effectiveness depends on timely material supply, information sharing, and supplier performance management to reduce delays and quality risks.

Problem Statement

Designing resilient and responsive supply chains remains difficult due to market volatility, disruption risks, and changing customer expectations (Sarkar et al., 2020). Many operations remain manually driven, limiting responsiveness and coordination. Production environments are further affected by demand uncertainty, shortened product life cycles, and complex logistics scheduling.

Although information sharing supports SCI, it is insufficient without effective coordination and governance among supply chain actors (Vanpoucke et al., 2017). Power imbalances, weak collaboration, transportation inefficiencies, and poor order management often undermine integration efforts and logistics effectiveness (Bala et al., 2019). These challenges highlight the need to examine upstream SCI and its effect on production logistics performance.

Study Significance

Production logistics is essential to profitability, innovation, and sustainability. However, inconsistent supplier quality and unreliable deliveries create risks to manufacturing performance. In the cement industry, these issues are intensified by weak supplier commitment and operational delays.

This study contributes by reviewing literature on upstream SCI and production logistics to identify key variables and analytical approaches. An empirical study of Dangote Cement Plc provides industry-specific insights and enables comparison between theory and practice.

Study Scope

This study focuses on upstream (backward) supply chain integration within production logistics. The empirical context is Dangote Cement Plc in Nigeria, specifically the Obajana, Ibese, and Gboko plants, selected for their strategic importance.

Aim and Objectives

The study aims to examine the effect of upstream SCI on production logistics effectiveness at Dangote Cement Plc. The objectives are to:

1. review literature on upstream SCI and production logistics;
2. examine its impact on cement manufacturing processes;
3. identify moderating factors influencing upstream SCI; and
4. evaluate determinants of production logistics effectiveness.

Research Questions

1. What factors moderate successful upstream supply chain integration?
2. How does integration enhance supply chain effectiveness?
3. How does upstream SCI influence production logistics effectiveness?
4. What is the overall effect of upstream SCI on supply chain performance?

LITERATURE REVIEW

Manufacturing and Operations Management

Manufacturing enables firms to design and reconfigure production systems that respond to changing customer needs in a cost-efficient and sustainable manner (Fisher et al., 2018). Achieving manufacturing excellence requires balanced decisions in sourcing, capacity planning, and production processes. Rising costs and global competition have increased the need for innovation across purchasing, logistics, and supply chain functions (Francis et al., 2014). Consequently, operations management focuses on designing integrated systems that ensure efficient production and customer satisfaction.

Production systems face persistent challenges related to demand uncertainty, inventory control, and capacity planning. Capacity expansion is typically a strategic response to demand fluctuations (Rajagopalan and Swaminathan, 2001). Information sharing and digital technologies improve coordination and enable faster material flows among supply chain partners, while Materials Requirement Planning (MRP) systems further support integration by aligning production schedules with inventory and procurement requirements (Cachon and Fisher, 2000).

Logistics Management

Logistics supports production, warehousing, storage, packaging, and reverse flows within supply chains (Nguyen, 2020). Increasing global competition has intensified pressure on logistics systems to improve efficiency and responsiveness. Assessment tools such as the Logistics Performance Index help evaluate logistics capability at national and organizational levels, and logistics plays a critical role in international trade by enabling access to external inputs (Albadrani et al., 2020).

Inbound Logistics

Inbound logistics governs the flow of materials and information from suppliers to production facilities. It involves procurement processes such as requisition, quotation, and purchase ordering, which define cost, quality, and delivery requirements. Supplier selection depends on sourcing strategies, evaluation criteria, and allocation decisions, while transport decisions are influenced by cost, reliability, capacity, and speed (Nascimento et al., 2020).

Operational complexity requires structured monitoring tools to reduce uncertainty and improve procurement performance. However, such tools remain underutilized in practice, with greater focus placed on demand forecasting rather than logistics control systems (Ravindran and Boh, 2020).

Although logistics does not directly produce goods, it creates value through coordination, efficiency, and service delivery. Its effectiveness depends on customer orientation, workforce capability, and supplier relationships. Despite this, many logistics providers lack sufficient capability, highlighting the need for logistics to be treated as a core organizational competence (Marquardt et al., 2011).

Production Logistics

Production logistics integrates production and logistics functions to enhance manufacturing performance. Its main objectives include order fulfilment, material coordination, and improved delivery speed and quality (Gimenez and Ventura, 2005). However, many firms still rely on manual systems, resulting in inefficiencies and higher operational costs (Hauge et al., 2020).

Production logistics accounts for a significant portion of production time and ensures material flow across production stages. Its performance depends on input quality, equipment reliability, and production control systems (Colledani and Tolio, 2012). Although data-driven systems improve responsiveness, many firms still lack reliable data and optimization capabilities, resulting in delays and inefficiencies (Liu et al., 2020).

The Supply Chain

Supply chains are complex systems that depend on the integration of material and information flows. They consist of interconnected networks of organizations involved in moving materials from origin to end users (Mentzer et al., 2001). Supply chains may be direct, extended, or ultimate, depending on their level of complexity.

Supply Chain Complexity and Risk

Globalization has increased supply chain uncertainty, making resilience and agility essential. Agile supply chains respond quickly to changes, while resilience ensures recovery from disruptions. However, lean systems may become vulnerable when poorly integrated (Agarwal et al., 2020).

Supply chain risk management requires continuous identification and mitigation of disruptions. Risks include supplier failure, market volatility, and structural inefficiencies. Poor coordination between logistics and production also creates demand-related risks, particularly at decoupling points that balance supply and demand (Bode and Wagner, 2015; Mason-Jones and Towill, 1999).

Upstream Supply Chain

Upstream suppliers significantly influence cost, quality, and production performance. In many industries, they account for a large share of production costs. Supplier capabilities therefore play a central role in operational performance and innovation. However, integration is often limited due to volatility, risk, and trust issues among partners (Frohlich, 2002; Scannell et al., 2000).

Cement Supply Chain Context

Cement production is a capital-intensive process involving raw material extraction, processing, and distribution (Ohimain, 2014). It relies heavily on coordinated logistics and stable upstream supply chains. Variations in material quality or supply reliability directly affect production efficiency.

The cement supply chain consists of upstream suppliers, internal production systems, and downstream customers. Effective coordination across these levels is essential for operational efficiency and consistent output.

Supply Chain Management and Integration

Supply chain management (SCM) emphasizes cross-organizational coordination to improve efficiency and responsiveness. However, firms often struggle with implementing integration due to trust issues, coordination challenges, and limited social capital (Lambert and Cooper, 2000).

Supply chain integration (SCI) enhances performance through coordinated material and information flows. It improves flexibility and responsiveness but can be hindered by opportunism, information asymmetry, and weak collaboration. Integration outcomes are often influenced by trust, leadership, and risk management capabilities (Flynn et al., 2010).

Materials flow integration improves warehousing and production efficiency, while information flow integration enhances planning and coordination through digital systems. However, full integration remains constrained by organizational resistance and limited collaboration (Rai et al., 2006).

Study Context and Framework

Dangote Cement Plc is a leading cement producer in Africa with extensive operations across Nigeria (Akinyoade and Uche, 2016). Its large-scale production and supplier network make it suitable for studying upstream supply chain integration.

This study conceptualizes upstream SCI as a driver of production logistics performance and supply chain effectiveness. Its impact is moderated by trust, collaboration, risk management, leadership, and information capability, forming the basis for empirical investigation.

METHODOLOGY

Research Design and Philosophy

This study adopted an exploratory qualitative design to examine the effects of upstream supply chain integration on production logistics effectiveness. It is grounded in a constructivist philosophy, which views organizational realities as socially constructed through interactions and experiences. From this perspective, knowledge is generated through interpretation rather than objective measurement, making qualitative inquiry appropriate for complex supply chain phenomena (Slevitch, 2011).

Study Context and Sample

The study was conducted at Dangote Cement Plc, Nigeria, focusing on the Obajana, Ibese, and Gboko plants due to their strategic relevance and similar operational structures. These sites were selected to ensure contextual consistency while enabling comparative insights.

A purposive sampling technique was used to identify participants directly involved in supply chain, logistics, and procurement functions. Sampling was supported by snowballing to refine participant selection during fieldwork. Data saturation was achieved after six interviews, with two participants from each plant, as no new insights emerged (Mason, 2010).

Data Collection

Data were collected through unstructured, interview-based discussions to capture participants' experiential knowledge and perceptions of upstream integration and production logistics. This flexible approach allowed respondents to freely express insights guided by broad research prompts (Gill et al., 2008).

Interviews were conducted in English at the participants' workplaces and lasted approximately 45 minutes. With consent, all sessions were audio-recorded and complemented with field notes capturing contextual observations.

Data Analysis

Data were analysed using an iterative qualitative process involving transcription, coding, and thematic interpretation. Interviews were transcribed verbatim and reviewed for accuracy. Coding focused on identifying patterns, similarities, and differences across responses, leading to the development of key themes.

Sentiment and thematic analysis were applied to interpret participants' perspectives. The process was guided by constructivist and grounded theory principles to ensure findings reflected participants' accounts rather than pre-existing assumptions.

Trustworthiness

The study ensured quality using credibility, transferability, dependability, and confirmability criteria. Credibility was strengthened through data saturation and consistent interpretation across interviews. Dependability and confirmability were ensured through transparent documentation of procedures and analysis, while detailed contextual descriptions support transferability to similar industrial settings (Golafshani, 2003).

Ethical Considerations

Ethical approval was obtained prior to data collection. Participation was voluntary, and informed consent was secured from all respondents after explaining the study's purpose. Confidentiality and anonymity were guaranteed, and participants could withdraw at any stage without penalty. All recordings and transcripts were securely stored, and no identifying information was included in reporting.

RESULTS

This section presents findings from semi-structured interviews with six participants across Dangote Cement Plc plants in Obajana, Gboko, and Ibese. Data saturation was achieved by the fifth interview due to standardized procurement and production practices. Findings are presented according to the research questions and emergent themes.

Factors Moderating Upstream Supply Chain Integration

All respondents confirmed that suppliers are integrated only after formal registration and onboarding through the SAP ERP system. Supplier evaluation procedures were consistent across all plants.

Key moderating factors included supplier experience, delivery performance, financial capacity, responsiveness, and operational capability. Due diligence was emphasized, particularly verification of supplier information within SAP prior to approval.

Respondents noted that suppliers are typically required to be manufacturers or primary distributors to reduce cost escalation and quality risks. Performance indicators such as delivery timeliness, responsiveness, and product authenticity were central to supplier selection. Financial screening was also used to ensure suppliers can meet obligations without advance funding disruptions.

Effects of Upstream Integration on Supply Chain Effectiveness

Respondents indicated that upstream integration enhances supplier effectiveness through structured procurement processes and timely payments, including purchase order settlements and letters of credit.

Centralized procurement was identified as a key mechanism, consolidating supply requirements across plants through a central unit responsible for budgeting, supplier selection, and order allocation. This approach promotes uniform quality standards and economies of scale, with typically three suppliers shortlisted per input category.

Reported benefits included reduced lead times, improved cost efficiency, and stable supply quality. Suppliers also benefit from global insurance coverage for goods-in-transit arranged centrally. Competitive quotation processes further improve pricing efficiency and delivery performance. Integration was also reported to provide suppliers with stable revenue streams, improved credibility, and stronger market positioning.

Effects of Upstream Integration on Production Logistics Effectiveness

Respondents confirmed that upstream integration supports production logistics by ensuring timely availability of raw materials and maintaining production continuity.

Effective production logistics was linked to synchronized planning, accurate forecasting, and centralized inventory visibility across plants. While some respondents reported occasional disruptions due to delays in imported materials such as gypsum—caused by port congestion and transport bottlenecks—others reported no major stoppages, attributing this to safety stock and real-time monitoring systems.

Quality issues were reported as rare due to centralized supplier selection, pre-delivery sampling, and inspection procedures. Non-compliant materials were returned under warranty agreements, with buffer stocks helping to prevent production delays.

Effects of Upstream Integration on Supply Chain Management

Supplier relationships are managed through the SAP ERP system, which tracks delivery performance, quality compliance, pricing, and payment status. Monthly performance reports support monitoring and decision-making.

Central Procurement standardizes specifications and consolidates demand across plants, issuing rate contracts that stabilize pricing and ensure coordination. Transportation distance was identified as a major cost driver.

Suppliers are categorized as local or foreign, enabling differentiated management approaches. Overall, upstream integration was reported to improve coordination, control, resilience, and visibility across the supply chain.

Areas for improvement include faster payment processing, increased automation, improved supplier data management, and continued investment in digital systems.

DISCUSSION

This study provides qualitative evidence that upstream supply chain integration significantly enhances supply chain effectiveness, production logistics performance, and overall supply chain management in large-scale manufacturing contexts.

First, the findings show that formal supplier vetting—through legal registration, due diligence, and ERP-based onboarding—is fundamental to effective upstream integration. This supports literature emphasizing governance and capability alignment as prerequisites for successful supplier collaboration.

Second, centralized procurement is identified as a key mechanism for improving efficiency in multi-plant manufacturing systems. By consolidating demand and standardizing supplier selection, Dangote Cement achieves economies of scale, cost reduction, and consistent input quality. This aligns with perspectives that centralized coordination enhances operational efficiency and competitiveness.

Third, upstream integration improves production logistics effectiveness mainly through time-based coordination, including timely material availability, synchronized planning, and improved inventory visibility. However, external constraints such as port congestion and transport bottlenecks can still disrupt production, indicating that environmental factors may moderate integration outcomes.

Fourth, the low incidence of quality issues reflects the effectiveness of supplier pre-qualification, inspection, and testing systems. The ability to reject non-compliant materials without major disruptions also demonstrates improved operational resilience.

Finally, upstream integration strengthens supply chain management by improving coordination, control, and real-time visibility through ERP systems. However, concerns regarding payment delays and administrative rigidity suggest that procedural inefficiencies may weaken supplier responsiveness if not addressed.

Overall, upstream supply chain integration is best understood as a system-driven and governance-based process that directly enhances operational performance in capital-intensive industries.

CONTEXTUAL CONTRIBUTION AND MANAGERIAL IMPLICATIONS

Contextual Contribution

This study contributes empirical evidence from a large manufacturing firm in a developing economy, where infrastructure constraints and supply uncertainty are significant. It extends supply chain integration literature by showing how upstream integration operates in an African industrial context.

The findings indicate that integration is strongly driven by centralized governance, formal due diligence, and ERP-enabled coordination rather than purely relational mechanisms. Unlike many developed economy contexts where trust-based collaboration dominates, this study shows that system-based control and standardized procurement processes are more influential in ensuring supply stability.

Additionally, external infrastructure challenges such as port congestion significantly moderate logistics performance, even under strong integration. This highlights the importance of

incorporating infrastructural constraints into supply chain integration models in emerging economies.

Managerial Implications

The study offers several implications for supply chain managers in manufacturing firms.

First, formalized supplier onboarding supported by ERP systems should be prioritized to ensure compliance, financial capability, and performance reliability.

Second, centralized procurement is effective in achieving cost efficiency, standardization, and coordination across multiple plants, though some operational flexibility should be maintained locally.

Third, managers should invest in integrated inventory systems that enhance real-time visibility, forecasting accuracy, and stock control.

Fourth, external logistics disruptions should be proactively managed through buffer stocks, alternative transport routes, and collaborative logistics planning.

Finally, timely payments and streamlined administrative processes are essential for maintaining supplier motivation and performance, as excessive delays may weaken integration benefits.

Overall, upstream integration should be managed as a strategic system combining governance, technology, and supplier relationship management.

CONCLUSION

This study examined the effects of upstream supply chain integration on supply chain effectiveness and production logistics performance in a manufacturing context. The findings confirm that upstream integration is a critical enabler of operational efficiency, resilience, and competitiveness.

Effective integration depends on structured supplier selection processes that emphasize legality, financial strength, technical capability, and performance history. Direct suppliers are particularly important for high-volume sourcing, while indirect suppliers may contribute to long-term capability development.

The study further shows that upstream integration improves supply chain effectiveness through centralized procurement, which enhances coordination, pricing stability, and quality consistency across production sites. At the same time, localized planning supports operational flexibility, reinforcing internal integration.

In terms of production logistics, integration reduces disruptions caused by stock-outs, delivery delays, and quality inconsistencies, thereby supporting production continuity and responsiveness. These findings align with literature emphasizing process efficiency and supply chain responsiveness as core outcomes of integration.

Finally, upstream integration enhances supply chain management through ERP-enabled monitoring, supplier classification, and structured coordination mechanisms that improve control, resilience, and adaptability.

Despite these contributions, the study is limited by its qualitative, single-firm design. Future research could adopt quantitative or mixed-method approaches across multiple industries and regions. Further studies should also examine how infrastructure constraints and procurement centralization jointly influence supply chain performance.

Overall, the study concludes that upstream supply chain integration, when supported by structured governance, digital systems, and coordinated procurement, is essential for achieving high performance in large-scale manufacturing environments.

REFERENCES

Agarwal, N., Seth, N., and Agarwal, A. (2020), "Modeling Supply Chain Enablers for Effective Resilience", *Continuity & Resilience Review,* Ahead of Print. https://doi.org/10.1108/CRR-05-2020-0017.

Akinyoade, A. and Uche, C. (2016), "Dangote Cement: An African Success Story? Leiden, The Netherlands: African Studies Centre.

Albadrani, A., Zohdy, M.A., and Olawoyin, R. (2020), "An Approach to Optimize Future Inbound Logistics Processes Using Machine Learning Algorithms", 2020 *IEEE International Conference on Electro Information Technology (EIT)*. Chicago, USA: IEEE. https://doi.org/10.1109/EIT48999.2020.9208238.

Bala, B.K., Islam, M.M., Ghosh, S., Hossain, M.S., Hoque, A.S.M.M., and Saha, S. (2019), "Modelling of Supply Chain of Ready-Made Garments in Bangladesh", *Systems Research and Behavioural Science,* 37(1), 38-55. https://doi.org/10.1002/sres.2575.

Bode, C. and Wagner, S.M. (2015), "Structural Drivers of Upstream Supply Chain Complexity and the Frequency of Supply Chain Disruptions", *Journal of Operations Management,* 36, 215-228. https://doi.org/10.1016/j.jom.2014.12.004.

Cachon, G.P. and Fisher, M. (2000), "Supply Chain Inventory Management and the Value of Shared Information", *Management Science,* 46(8), 1013-1169. https://doi.org/10.1287/mnsc.46.8.1032.12029.

Colledani, M. and Tolio, T. (2012), "Integrated Quality, Production Logistics and Maintenance Analysis of Multi-Stage Asynchronous Manufacturing Systems with Degrading Machines", *CIRP Annals,* 61(1), 455-458. https://doi.org/10.1016/j.cirp.2012.03.072.

Dubey, R., Gunasekaran, A., and Childe, S.J., Papadopoulos, T., Luo, Z., and Roubaud, D. (2020), "Upstream Supply Chain Visibility and Complexity Effect on Focal Company's Sustainable Performance: Indian Manufacturers' Perspectives, *Annals of Operations Research,* 290, 343-367. https://doi.org/10.1007/s10479-017-2544-x.

Fisher, O., Watson, N., Porcu, L., Bacon, D., Rigley, M., and Gomes, R.L. (2018), "Cloud Manufacturing as a Sustainable Process Manufacturing Route", *Journal of Manufacturing Systems,* 47, 53-68. https://doi.org/10.1016/j.jmsy.2018.03.005.

Flynn, B.B., Huo, B., and Zhao, X. (2010), "The Impact of Supply Chain Integration on Performance: A Contingency and Configuration Approach", *Journal of Operations Management,* 28(1), 58-71. https://doi.org/10.1016/j.jom.2009.06.001.

Francis, M., Fisher, R., Thomas, A., and Rowlands, H. (2014), "The Meaning of 'Value' in Purchasing, Logistics, and Operations Management", *International Journal of Production Research,* 52(22), 6576-6589. https://doi.org/10.1080/00207543.2014.903349.

Frohlich, M.T. (2002), "E-Integration in the Supply Chain: Barriers and Performance", *Decision Sciences,* 33(4), 537-556. https://doi.org/10.1111/j.1540-5915.2002.tb01655.x.

Gill, P., Stewart, K., Treasure, E., and Chadwick, B. (2008), "Methods of Data Collection in Qualitative Research: Interviews and Focused Groups", *British Dental Journal,* 204(6), 291-295. https://doi.org/10.1038/bdj.2008.192.

Gimenez, C. and Ventura, E. (2005), "Logistics-Production , Logistics-Marketing and external Integration: Their Impact on Performance", *International Journal of Operations & Production Management,* 25(1), 20-38. https://doi.org/10.1108/01443570510572222.

Golafshani, N. (2003), "Understanding Reliability and Validity in Qualitative Research", *The Qualitative Report,* 8(4), 597-607. Available at: http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf. Accesed on November 23, 2020.

Hauge, J.B., Zafarzadeh, M., Jeong, Y., Li, Y., Khilji, W.A., and Wiktorsson, M. (2020), "Digital and Physical Testbed for Production Logistics Operations". In: Lalic B., Majstorovic V., Marjanovic U., von Cieminski G., Romero D. (eds) Advances in Production Management Systems. The Path to Digital Transformation and Innovation of Production Management Systems. APMS 2020. *IFIP Advances in Information and Communication Technology*, 591. 625-633. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-030-57993-7_71.

Lambert, D.M. and Cooper, M.C. (2000), "Issues in Supply Chain Management", *Industrial Marketing Management,* 29(1), 65-83. https://doi.org/10.1016/S0019-8501(99)00113-3.

Liu, S., Wang L., Wang X.V., Wiktorsson M. (2020), "A Framework of Data-Driven Dynamic Optimisation for Smart Production Logistics". In: Lalic B., Majstorovic V., Marjanovic U., von Cieminski G., and Romero D. (eds), Advances in Production Management Systems. Towards Smart and Digital Manufacturing. APMS 2020. *IFIP Advances in Information and Communication Technology*, 592. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-030-57997-5_25.

Marquardt, A.F., Golicic, S.L., and Davis, D.F. (2011), "B2B Services Branding in the Logistics Services Industry", *Journal of Services Marketing,* 25(1), 47-57. https://doi.org/10.1108/08876041111107050.

Mason, M. (2010), "Sample Size and Saturation in PhD Studies Using Qualitative Interviews", *Forum: Qualitative Social Research,* 11(3), Art. 8, 1-19. http://dx.doi.org/10.17169/fqs-11.3.1428.

Mason-Jones, R. and Towili, D.R. (1999), "Using the Information Decoupling Point to Improve Supply Chain Performance", *The International Journal of Logistics Management,* 10(2), 13-26.

Mentzer, J.T., DeWitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D. and Zacharia, Z.G. (2001), "Defining Supply Chain Management", *Journal of Business Logistics*, 22: 1-25. https:doi.org/10.1002/j.2158-1592.2001.tb00001.x

Nascimento, A., Tavares, E., Alves Jr., G., Sousa, E., and Nogueira, B. (2020), "Performability Evaluation of Transport Modes for Cloud-Based Inbound Logistics: A Study Based on Coffee Industry", *International Journal of Manufacturing Technology and Management,* 34(2), 126-147.

Nguyen, H.P. (2020), "Human Resource Management of Logistic in Vietnam: Status and Policy Solutions", *International Journal of Innovation, Creativity and Change,* 11(3), 569-583.

Ohimain, E.I. (2014), "The Success of the Backward Integration Policy in the Nigerian Cement Sector", *International Journal of Materials Science and Applications,* 3(2), 70-78. https://doi.org/10.11648/j.ijmsa.20140302.19.

Rai, A., Patnayakuni, R., and Seth, N. (2006), "Firm Performance Impacts of Digitally Enabled Supply Chain Integration Capabilities", *MIS Quarterly,* 30(2), 225-246. https://doi.org/10.2307/25148729.

Rajagopalan, S. and Swaminathan, J.M. (2001), "A Coordinated Production Planning Model with Capacity Expansion and Inventory Management", *Management Science,* 47(11), 1441-1580. https://doi.org/10.1287/mnsc.47.11.1562.10254.

Ravindran, T. and Boh, W.F. (2020), "Lessons from COVID-19: Towards a Pandemic Readiness Audit Checklist for Small and Medium-Sized Enterprises", *IEEE Engineering Management Review,* 48(3), 55-62. https://doi.org/10.1109/EMR.2020.3015488.

Sarkar, B., Omair, M., and Kim, N. (2020), "A Cooperative Advertising Collaboration Policy in Supply Chain Management Under Uncertain Conditions", *Applied Soft Computing,* 88. https://doi.org/10.1016/j.asoc.2019.105948.

Scannell, T.V., Vickery, S.K., and Droge, C.L. (2000), "Upstream Supply Chain Management and Competitive Performance in the Automotive Supply Industry", *Journal of Business Logistics,* 21(1), 23-48.

Slevitch, S. (2011), "Qualitative and Quantitative Methodologies Compared: Ontological and Epistemological Perspectives", *Journal of Quality Assurance in Hospitality & Tourism,* 12, 73-81. http://dx.doi.org/10.1080/1528008X.2011.541810.

Stock, J.R. and Boyer, S.L. (2009), "Developing a Consensus Definition of Supply Chain Management: A Qualitative Study", *International Journal of Physical Distribution & Logistics Management*, 39(8), 690-711. https://doi.org/10.1108/09600030910996323.

Sundram, V.P.K., Chandran, V.G.R., and Bhatti, M.A. (2016), "Supply Chain Practices and Performance: The Indirect Effects of Supply Chain Integration", *Benchmarking: An International Journal,* 23(6), 1445-1471. http://dx.doi.org/10.1108/BIJ-03-2015-0023.

Vanpoucke, E., Vereecke, A., and Muylle, S. (2017), "Leveraging the Impact of Supply Chain Integration through Information Technology", *International Journal of Operations & Production Management,* 37(4), 510-530. https://doi.org/10.1108/IJOPM-07-2015-0441.