

## **SUPPLY CHAIN COLLABORATION AND PROCUREMENT PERFORMANCE OF FOOD AND BEVERAGES MANUFACTURING COMPANIES IN RIVERS STATE**

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### **Abstract**

This study investigated the connection between supply chain collaboration and procurement performance of food and beverages manufacturing companies in Rivers State. A correlational research model was framed to handle 2 hypotheses formulated for the study. The population of the study comprised 14 food and beverages manufacturing companies in Rivers State. The Marketing, Production, Procurement/Purchasing, Customer service, Accounts and Quality assurance managers of these firms provided data for the study. A 5-point likert-scale questionnaire was used to collect data. Each of these informants were given a copy of structured questionnaire to respond to. The Pearson Product Moment Correlation statistic was employed to test the relationship between supply chain collaboration and measures of procurement performance (on-time delivery and delivery speed). The results showed that supply chain collaboration has positive and statistically significant relationship with procurement performance. Therefore, the study concludes that supply chain collaboration has significant relationship with procurement performance of food and beverages manufacturing companies in Rivers State, and recommends that management of food and beverages manufacturing companies in Rivers State should enter into collaborative relationship with members of their supply chains, if they seek procurement performance.

**Keywords:** Delivery speed, on-time delivery time, procurement performance, Supply chain collaboration

### **Introduction**

Effective procurement practice is the surest way of boosting procurement performance (Forsgren & Rahkonen, 2019). A procurement activity's effectiveness depends on its foundation. A thorough procurement procedure that ensures that all parts of the procurement process are outlined will ensure the success of the next contract. Thus, it is believed that effective procurement practice enhances procurement performance.

Businesses operate in an increasingly unstable milieu. This is exacerbated by customers' demand for high-quality products that put a lot of pressure on businesses all over the world (Findlay, 2021). It is argued that effective procurement is a cornerstone of survival of public institutions, client satisfaction, public interest, fair play, and honesty (Carr & Smeltzer, 1997). However, procurement performance is affected by sundry factors, including defective procurement activities; and improper procurement activities can result to poor performance which can lead to collapse of the organization (Kiage, 2013). Thus, it is imperative that firms institute structures that allow for proper procurement activities. One of such structures that is becoming common-placed, is supply chain collaboration.

It is predicted supply chain collaboration anchored on information sharing is an important requirement for procurement performance. Most commentators are of the view that supply chain collaboration is the basis for procurement performance. This is because escalating competition have challenged firms to look beyond their frontiers, and cultivate collaborative interactions with others (Soosay et al., 2008).

Interestingly, extant literature shows that studies have examined the relevance of supply chain collaboration to different business, marketing, and procurement outcomes (Wang et al., 2023). For example, Lee and Kim (2023), Nooman and Naslund (2019) and Mazikana (2019) examined the impact of information sharing, which is an important aspect of supply chain collaboration on supply chain resilience and achievement of organizational goals.

However, literature is silent on empirical studies focusing on supply chain collaboration and procurement performance. With a view to contributing to the stock of knowledge on supply chain collaboration therefore, this study sought to probe its relationship with procurement performance of food and beverages manufacturing companies in Rivers State. The study was guided by the following hypotheses

**H<sub>01</sub>:** Supply chain collaboration does not significantly relate with on time delivery of food and beverages manufacturing companies in Rivers State.

**H<sub>02</sub>:** Supply chain collaboration does not significantly relate with delivery speed of food and beverages manufacturing companies in Rivers State.

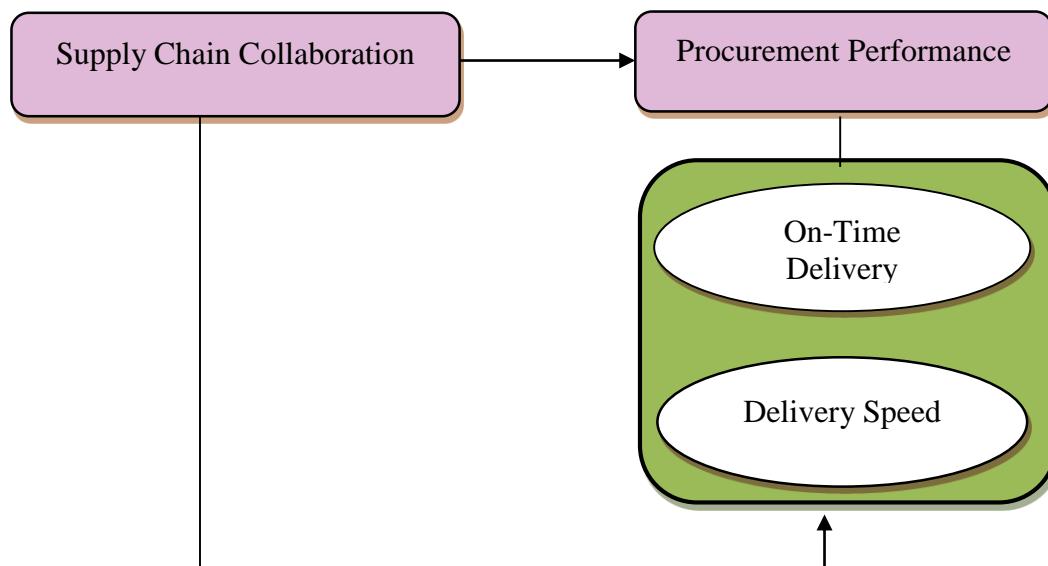


Fig. 1: Conceptual framework of supply chain collaboration and procurement performance of food and beverages manufacturing companies in Rivers State

**Source:** Adapted Syman (2020) for the Measures.

### Theoretical Framework: Resource Based View (RBV)

RBV (Barney, 1986) analyzes firm's behaviour and competitive strategy. RBV contends that a firm's resources and capabilities are key to competitive advantage (Lynch et al., 2000). RBV has been widely applied in management research. RBV is generally used to explain the factors affecting resource utilization of firms to improve their competitive advantage and performance (Barney, 2001). RBV is also a popular theory in SCM research (Cao & Zhang, 2011). The main argument of RBV is that a firms' resources and capabilities are strategic assets that can be leveraged for economic rents and sustained competitive advantage.

### **Concept Supply Chain Collaboration**

Supply chain collaboration is defined as long-term relationship where participants generally cooperate, share information, and work together to plan and even modify their business practices to improve joint performance (Whipple et al., 2010). Analyzing supply chain collaboration provides researchers further understanding of the concept as we seek to move the body of knowledge related to supply chain collaboration forward. Investigating supply chain collaboration delivers practical value to managers by seeking methods to increase supply chain collaboration success, identifying what factors lead to, or are generated from, successful collaboration, and determining firm performance benefits of supply chain collaboration.

The subject of collaboration in logistic has been meticulously investigated and extensively talked about from both, scholars and practitioners (Caputo & Minnino, 1996; Schmoltzi & Wallenburg, 2012). Besides, it has been referred to as a decisive dynamic (Naesens et al., 2009) for firms' competitiveness. Lambert et al. (1999) defined collaboration as "a tailored business relationship based on mutual trust, openness, shared risk and shared reward that yields a competitive advantage resulting in business performance greater than would be achieved by the firms individually. Collaboration is defined as two or more firms sharing the task of exchanging common planning, management, execution and performance measurement information (Anthony, 2000).

Supply chain collaboration has developed into a fundamental concern in supply chain management as it smoothens the progress of close collaborations amid supply chain affiliates (Spekman et al., 1998). Bowersox et al. (2000) accentuated that the concept of integrated supply chain management is a collaborative-based approach to hook up traverse-venture commerce functions to realize a mutual idea of market opportunity. Ballou et al. (2000) dispute that supply chain management embraces inter firm collaboration that harmonize product flows crosswise the legal precincts of sovereign companies. Stank et al. (2001) also underline the actuality that supply chain management absorbs some echelons of harmonization of activities and procedures both intra- and inter-firm.

Spekman et al. (1998) advocates that supply chain collaboration transpires when involved affiliates share information generously, work collectively to resolve frequent difficulties, invent multiparty planning, and make their accomplishments mutually dependent. Supply chain collaboration involves two or more companies functioning mutually to generate a competitive advantage and superior profits than can be accomplished by acting single-handedly (Simatupang & Sridharan, 2002; Olorunniwo & Li, 2010).

Collaboration is a progression that uphold inter-firm cooperation, information sharing, and knowledge, that involves two or more sovereign firms functioning mutually to bring into line the processes of the supply chain; and in attendance the distinctiveness of communication (Simatupang & Ramaswami, 2005), commitment (Barrat, 2004), flexibility (Zhang et al., 2011), harmonization in decision making (Danese, 2007), and coordination (Cadilhon et al., 2005).

Collaboration allows firms to partner by combining core competencies and expertise without the additional investment of intensive vertical integration (Cao and Zhang, 2011). In collaboration, resources and capabilities of supply chain partners are leveraged to create new capabilities to respond to dynamic market needs (Fawcett et al., 2012). In general, firms should derive more benefits from working together (efficiency, knowledge gain, cost reduction, performance improvement) than individual firms can gain on their own (Daugherty et al.,

2006). Additionally, supply chain collaboration may be one way for firms to cope with uncertainty (Davis, 1993).

Collaboration can lead to activities being completed in a cooperative and coordinated manner (Heide & John, 1990; Richey et al., 2012). This coordination can lead to operational efficiencies and enhancement (Bowersox et al., 1999). Better on-time delivery, improved inventory management, greater responsiveness, and enhanced quality may all be effects of supply chain collaboration (Flynn et al., 2010; Grawe et al., 2011; Richey et al., 2012).

### **Procurement Performance**

Procurement is the acquisition of quality commodities, or services at a cost-efficient rate (Cole, 2007). In more simple terms, Cole (2007), explains that procurement may be referred to as the process whereby products are assessed at low prices. The dictionary of Business defines the term procurement as the all-encompassing task of the procedures necessary to obtain goods and services (Business Dictionary, 2011).

Procurement performance is referred to as the “process by which procurement establishes criteria, based on strategic planning goals, for determining the results and quality of its activities. It involves creating a simple, effective system for determining whether procurement is meeting its objectives”. Procurement in principle is different from purchasing, in that, the former deals with undertakings involved in creating essential requirements, in sourcing activities like researching into the market, performing an evaluation on vendors as well as contract and negotiations.

Procurement performance refers to a metric used to gauge how effectively the procurement function achieves goals and objectives at the lowest possible cost (Nasra, 2014). Procurement performance is defined in the on literature as the purchase of materials competitively from the suppliers as well as to enjoy the benefits of bulk buying (Frodell, 2014). Procurement performance as the supplier management practice of activities up to and including the making of the central/framework agreement for the whole organization to use as well as the management of that contract during the contract period (Frodell, 2014). These tasks are the responsibilities of a procuring unit in an organization (Frodell, 2014).

Even though the purchasing model is supply chain some aspects involved in procuring are to the individual departments. These aspects involve tasks like order processing, invoice approval and approving payments (Patterson, 2015). In line with Syman (2020), this study adopts on time delivery and delivery speed as the measures of procurement performance.

### **On-time delivery**

Stewart (1995) sees on time delivery evaluation as an increase in delivery performance that is possible through a reduction in lead-time characteristics. On-time delivery mirrors whether just right delivery has occurred or if not and is also a measure of customer service level. On time delivery is a calculation that is determined by the percentage of sales orders that delivered on time. Various factors that can influence delivery speed include vehicle speed, driver reliability, frequency of delivery, and location of depots (Patterson, 2015).

According to Gunasekaran et al. (2001), on time delivery consists number of completed deliveries in a month. It may be the number of deliveries within a quarter or week also. You can also consider the average number of deliveries. Also, The number of on-time deliveries: deliveries carried out on time to the customer. It is a significant key performance indicator to check the quality of the delivery performance. Accuracy in order fulfillment can be measured

by calculating the order accuracy rate. That is a comparison of total orders and orders with errors.

One of the essential key performance indicators to measure delivery is on-time delivery. On time delivery is an organization's ability to supply goods and services per the standards expected by its customers. It is a critical aspect of supply chain management as it reflects the potential of the firm to meet customer expectations concerning time and cost. Once an order is placed, it is equally essential that the vendors provide the required items as promised without any changes in the quantity. That will ensure a smooth production process. To improve on-time delivery, the organization must boost the operation of all the departments by improving planning, monitoring, and working efficiency. Generally, on-time delivery is measured as the number of products divided by the number of total products shipped monthly.

### **Delivery speed**

Measures for delivery speed evaluation according to Stewart (1995), is an increase in delivery performance is possible through a reduction in lead-time attributes. Another important aspect of procurement performance is delivery performance. Delivery speed reflects whether perfect delivery has taken place or otherwise and is also a measure of customer service level. A similar concept was used by Christopher (1992), describing it as a combination of delivery reliability and order completeness. Delivery speed reflects whether perfect delivery has taken place or otherwise and is also a measure of customer service level.

### **Supply Chain Collaboration and Procurement Performance**

Hinrichs et al. (2024) show that data-driven decision-making support maintenance, asset, production and material planning to coordinate cross-functional responsibilities. While solutions for maintenance planning and scheduling have been explored for various operational conditions, collaborative solutions for maintenance, production and logistics offer the potential for further development. Enablers for data-driven collaboration are the internal synchronization and central definition of goals, harmonization of information systems and information visualization for decision-making.

Wang et al. (2023) reviewed the literature in the past decade on collaborative supply chain from the perspective of decision-making in four stages with a causal framework. This paper reveals a general retrospect of the main subjects developed and investigated with related applications of cases, which includes both theoretical assumptions and practical data. The findings indicate that most articles in this field are based on a direct relationship between collaboration and performance improvement. Additionally, dynamic collaboration with members in the whole supply chain both horizontally and vertically has not been conducted by previous studies. This paper provides a new conceptual framework and future research directions for further study in supply chain collaboration.

Berut et al. (2018) analyzed the influence of decision synchronization on performance of New Kenya Cooperative Creameries Limited. Milk processing firm performance was measured by market share, profitability, client satisfaction and competitive advantage. The study was guided by the Resource Based View and Transaction Cost Economies. The findings of the study revealed that there is significant effect between Decision Synchronization and Performance of NKCC with regards customer. Future studies may be conducted on the influence of decision synchronization on performance of other firms but under different social, economic and political conditions.

### Methodology

This study examined supply chain collaboration and procurement performance of food and beverages manufacturing firms in Rivers State. The study adopted a correlational research. Its population comprised 14 food and beverages manufacturing companies in Rivers State, whose authentic list was derived from (Finlib, 2025). The study adopted the census method and distributed copies of structured questionnaire to 1 management levels staff in 6 departments (marketing, production, procurement/purchasing, customer service, account and quality assurance) of the firms. These are departments were preferred because they are more relevant to the topic of the study. A total of 84 management staff provided data for the study. The instrument used in this study was supply Chain Collaboration Questionnaire (SCCQ). To determine the reliability of the instrument, the Cronbach Alpha test Coefficient was computed for the composite scale and each of the subscales, and the results are reported in Table 1. As can be observed, the Cronbach Alpha value for the composite scale and the subscales are all above the threshold ( $\alpha \geq 0.70$ ); hence, they are all reliable. It indicates how the items for each factor were internally related in the manner expected. The Pearson Product Moment Correlation (PPMC) analysis was used as to test the hypotheses.

**Table 3.2 Test of Reliability**

Scale	Dimension	Items	Reliability
SCC	Supply Chain Collaboration	3	0.776
PP	Procurement Performance	3	0.888
OD	Ontime Delivery	3	0.831
DS	Delivery Speed	3	0.754
SCCPPQ	Composite	18	0.931

Source: SPSS output (2025).

### Data Analysis and Results

**Table 2: Relationship between Supply Chain Collaboration and On-time Delivery**

		Supply Chain Collaboration	On-time Delivery
Supply Chain Collaboration	Pearson Correlation	1	.855**
	Sig. (2-tailed)		.000
	N	67	67
On-time Delivery	Pearson Correlation	.855**	1
	Sig. (2-tailed)	.000	
	N	67	67

\*\*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS output (2025).

Table 2 shows that the correlation coefficient between supply chain collaboration and on-time delivery is 0.855 implying there is a very strong positive correlation. This implies that an increase in supply chain collaboration by food and beverages manufacturing companies in their operations has significant relationship with on time delivery.

**Table 3: Relationship between Supply Chain Collaboration and Delivery Speed**

		Supply Chain Collaboration	Delivery Speed
Supply Chain Collaboration	Pearson Correlation	1	.843**
	Sig. (2-tailed)		.000
	N	67	67
Delivery Speed	Pearson Correlation	.843**	1
	Sig. (2-tailed)	.000	
	N	67	67

\*\*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS output (2025).

Table 3 shows that the correlation coefficient between supply chain collaboration and delivery speed is 0.843 implying that there is a very strong positive correlation. This implies that increase in supply chain collaboration by food and beverages manufacturing companies in their operations has significant relationship with delivery speed.

### Conclusion and Recommendations

This study assessed the interplay between supply chain collaboration and procurement performance of food and beverages companies in Rivers State. The results of the statistical analyses shows a positive significant relationship with procurement performance through on-time delivery and delivery speed. Consistent with our a-prior expectation, these finding suggests that supply chain collaboration positively relate with procurement performance.

There is evidence that supply chain collaboration relates to procurement performance of food and beverages companies in Rivers State. Based on our findings, the main conclusions drawn is that supply chain collaboration has a direct relationship with on time delivery and delivery speed. Thus, we recommend that management of food and beverages manufacturing companies should inter alia, initiate and implement effective supply chain collaboration, if they seek to enhance the performance of their procurement function.

### References

Al-Door, J. A. (2019). The impact of supply chain collaboration on performance in automotive industry: Empirical evidence. *Journal of Industrial Engineering and Management*, 12(2), 241-253.

Ali, M. M., Babai, M. Z., Boylan, J. E. & Syntetos, A. A. (2017). Supply chain forecasting when information is not shared. *European Journal of Operational Research*, 260(3), 984-994.

Anbanandam, R., Banwet, D. K. & Shankar, R. (2011). Evaluation of supply chain collaboration: A case of apparel retail industry in India. *International Journal of Productivity and Performance Management*, 60(2), 82-98.

Ba, S., Stallaert, J. & Whinston, A. (2001). Introducing the third dimension in information systems design: The case for incentive alignment. *Information Systems Research*, 12, 225-239.

Barratt, M. 2004. Understanding the meaning of collaboration in the supply chain. *Supply Chain Management: An International Journal*, 9, 30-42.

Barney, J. B. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *Academy of management review*, 11(3), 656-665

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view, *Journal of Management* 27(6), 643– 650.

Bowersox, D. J., Closs, D. J. & Stank, T. P. (1999). 21st century logistics: Making supply chain integration a reality. Oak Brook, IL: *Council of Logistics Management*.

Cadilhon, J. J., Fearne, A. P., Tam, P. T. G., Moustier, P., & Poole, N. D. (2005). Collaborative commerce or just common sense? Insights from vegetable chains. Retrieved from [www.google.com](http://www.google.com)

Cao, M., & Zhang, Q. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. *Journal of Operations Management* 29(3), 163-180.

Chong, E., Staropoli, C., & Yvrande-Billon, A. (2014). Auction versus negotiation in public.

Christopher, M. (1988). *Logistics and Supply chain management: Strategies for reducing cost and improving service (2nd edition)*. Pitman.

Cole A. (2007). Procurement definition, EzineArticles.com/?expert=Alison Cole community, Corruption and Anti-Corruption in Southern Africa, United Nations Office on Drugs and Crime, Regional Office for Southern Africa.

Daugherty, P. J., Richey, R. G., Roath, A. S., Min, S., Chen, H., Arndt, A. D., & Genchev, S. E. (2006). Is collaboration paying off for firms. *Business horizons*, 49(1), 61-70.

Davis, T. (1993). Effective supply chain management. *Sloan Management Review* 34(4), 35-45.

Fawcett, S. E., & Magnan, G. M. (2002). The rhetoric and reality of supply chain integration. *International Journal of Physical Distribution & Logistics Management* 32(5):339-361.

Flynn, B. B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management* 28(1), 58-71.

Gunasekaran, A. (2001). Performance measures and metrics in a supply chain environment, *International Journal of Operations & Production Management*, 21(1-2), 71-87.

Heide, J. B., & John, G. (1990). Alliances in industrial purchasing: The determinants of joint action in buyer-supplier relationships. *Journal of Marketing Research* 27(1), 24-36.

Hyun-Hoon, L. Cyn-Young, P., & Ju, H. P. (2022). International business cycle synchronization: A synthetic assessment. ADB Economics Working Paper Series, No. 668, Asian Development Bank (ADB), Manila, <https://doi.org/10.22617/WPS220355-2> industry in Kenya (Doctoral dissertation, University of Nairobi).

Lee, H. L., Padmanabhan, V., and Whang, S. (1997). Information distortion in a supply chain: The bullwhip effect. *Management Sci.* 43 (4), 546–558.

Li, Q., Lee, C.Y., Jin, H., & Chong, H.Y. (2022). Effects between Information Sharing and Knowledge Formation and Their Impact on Complex Infrastructure Projects' Performance. *Buildings*, 12(8), 1-18.

Monzcka, R., Trent R. & Handfield R. (2003). *Purchasing and supply chain management (2nd edition)*. South-Western College Publishing.

Naesens, K., Gelders, L. & Pintelon, L. (2009). A swift response framework for measuring the strategic fit for a horizontal collaborative initiative. *International Journal of Production Economics*, 121, 550-561.

Nasra, B. H. (2014). *Procurement performance and operational efficiency in telecommunication industry in Kenya* (Doctoral dissertation, University of Nairobi).

Nooman, A., & Naslund, D. (2019). Supply chain incentive alignment: The gap between perceived importance and actual practice. *Operations and Supply Chain Management*, 12(3), 129-142.

Richey, R. G., Adams, F. G., & Dalela, V. (2012). Technology and flexibility: Enablers of collaboration and time-based logistics quality. *Journal of Business Logistics*, 33(1), 34-49.

Simatupang, T. M., & Sridharan, R. (2005). The collaboration index: A measure for supply chain negotiations. *Industrial Marketing Management*, 64, 91-106.

Whipple, J. M., Lynch, D. F., & Nyaga, G. N. (2010). A buyer's perspective on collaborative versus transactional relationships. *Industrial Marketing Management*, 39(3), 507-518.