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### **SUPPLY CHAIN MANAGEMENT AND PERFORMANCE: EVIDENCE FROM MANUFACTURING ORGANISATIONS IN NIGERIA**

<sup>1</sup>Samuel Obehi Omigie & <sup>2</sup>Gabriel Tuoyo Kubeyinje

<sup>1</sup>*Department of Business Administration, Faculty of Management Sciences, University of Benin, Benin City, Nigeria*

<sup>2</sup>*Department of Marketing, Faculty of Management Sciences, University of Benin, Benin City, Nigeria*

*Corresponding Email:* [samuel.omigie@uniben.edu](mailto:samuel.omigie@uniben.edu)

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#### **ABSTRACT**

This study examined how supply chain management (SCM) impacts the performance of manufacturing organizations in Nigeria. Specifically, the study examined the impact of procurement outsourcing, information flow management, and order process management on the performance of manufacturing organizations in Nigeria. Survey research was used through questionnaire administration to the staff of production, procurement, warehouse, logistics, and marketing departments of two manufacturing organizations operating in Edo state, Nigeria. Statistical tools used in analyzing the data obtained include mean, standard deviation, correlation, and regression analyses. The study found that a positive and statistically significant relationship exists between supply chain management variables such as procurement outsourcing, information flow management, and order process management, and the performance of manufacturing organizations in Nigeria. The study, therefore, recommends that the management of manufacturing organizations conduct a benchmarking exercise for the top players in the industry as a means to enhance their procurement outsourcing procedures and attain unmatched performance of their supply chains; manufacturing organizations should concentrate on the production and services they have the expertise on and outsource those functions other firms or individual can do better for them.

**Keywords:** Information, Manufacturing, Order, Performance, Procurement, Supply chain.

## INTRODUCTION

Continuous improvement in organizational operations is fundamental in guaranteeing business sustainability and optimal performance of the organization, especially in a competitive environment. However, achieving optimal performance is challenging especially in manufacturing organizations in a developing economy such as Nigeria (Oyewo *et al.*, 2019). Studies have shown that effective supply chain management which requires a total understanding of the day-to-day transactions and collaboration with relevant stakeholders greatly determines organizational performance (Memia, 2018; Puska *et al.*, 2020). Manufacturing organizations in Nigeria and other developing nations in Africa have not yet adopted SCM principles as a crucial business integration strategy that gives the company a competitive edge (Oyewo *et al.*, 2019; Thoo *et al.*, 2011). Some of the supply chain management-related challenges manufacturing organizations in Nigeria are confronted with include a lack of effective suppliers relationship management, inadequate information flow management, poor customers relationship management, inadequate order process management, low level of procurement outsourcing and regulations awareness, inadequate manufacturing flow management, poor implementation of health and safety measures. Other challenges include the use of poor material disposal procedures, ineffective communication system, application of poor goods and storage/handling procedures, lack of effective risk control measures, low level of employees' competency, production of substandard goods/low-quality products, and inappropriate production and distribution practices.

Aside from these challenges, most previous studies on supply chain management focused more on developed economies (Davis-Sramek, Germain, & Stank, 2010; Fugate, Mentzer, & Stank, 2010; Green, Zelbst, Meacham, & Bhadauria, 2012). The relationship between supply chain management and performance is determined by the cultural, social, economic, and environmental factors of each country (Kaufmann & Carter, 2006; Miguel & Brito, 2011). For instance, Keebler and Plank (2009) claimed that it was impossible to generalize US business findings to other nations or the entire universe of companies. The developed economies such as Europe, America, and some portions of Asia, also had more advanced business structures than emerging nations, which made the introduction of supply chain management ideas much easier. It was necessary to do empirical research in numerous environments, notably developing economies like Nigeria, to generalize the causal relationship between supply chain management and the performance of manufacturing organizations.

Although, in Africa and other developing countries, related research has been done in the area of supply chain management and performance; their findings are mixed and inconsistent. For example, the empirical finding of Mutimos (2014) regarding the reuse products effect (reverse logistics practices) on performance is inconsistent with the result of Kabergey and Richu (2015). So also, the empirical finding

of Smith and Chang (2010) concerning customer relationship management impact on performance contradicts the outcomes of Thoo *et al.* (2011), Iriqat and Abu-Daqar (2017), and Prabusankar (2017) respectively. It is against such backdrop that the study thus strives to validate the existing findings and to bridge the gap between supply chain management and the performance of manufacturing organizations by evaluating the relationship between the supply chain Management variables (procurement outsourcing, information flow management, and order process management) and performance of manufacturing organizations in Nigeria.

## **LITERATURE REVIEW**

### ***Conceptualizing Performance***

Voss *et al.* (1997) defined performance as “the measurable outcomes of a firm’s processes such as productivity, reliability and production cycle turn which affect the overall business performance measures such as customer satisfaction and market share”. As opined by Richard *et al.* (2009), the concept of performance is used in management research to evaluate the effectiveness of all organizational functions, including procurement, human resources, marketing, operations, finance, and strategy. Richard *et al.* (2009) further argued that every process used in an organization's functions is evaluated to establish its value. Performance for service businesses refers to actions made by service providers which are measured by productivity, efficiency, responsiveness, and reliability (Stank, *et al.*, 1999).

Performance metrics for manufacturing organizations include dependability, responsiveness, agility, cost, and asset management (Sillanpaa & Kess, 2012). More reliable indications are provided by Slack *et al.* (2004) and include cost, quality, speed, flexibility, dependability, and increased customer satisfaction. Both the internal and external procedures of the company are impacted by these, as well as the customers. Making decisions economically to increase production and efficiency is what cost is all about (Batista, 2009). Quality represents conformity to clients' specifications regularly (Slack *et al.*, 2004). Speed refers to moving quickly through a process, such as the time it takes a company to go from a customer's requirements to the delivery of a product. The ability to adjust to a changing environment or new requirements is referred to as flexibility (Slack *et al.* 2004). Dependability means completing tasks on schedule and in accordance with promises (Batista, 2009).

As posited by Zhang *et al.* (2005), increasing logistical flexibility enabled quick replenishment of incoming materials, supply of high-quality components, quick delivery of finished goods, and dependable services to customers, along with a decrease in customer complaints, an increase in customer compliments of the business, and a rise in value-added productivity (Tracey & Tan, 2001). This study primarily focused on the performance dimension of dependability. According to Batista

(2009), being dependable means completing tasks on schedule and as promised. According to Nowakowski (2004), the availability of the supply chain system characterizes its reliability.

Over time, dependability develops and ultimately triumphs over all other considerations. No matter how fast, inexpensive, or inventive a product or service is, if the consumer does not believe that it will be delivered on time and with the desired quality, the customer will go elsewhere. Dependability within an organization is also crucial since it eliminates the wasteful use of time and resources, saving time and money. This is in line with Paiva *et al.* (2008) submission that dependability promotes stability inside the organization.

### ***Supply Chain Management***

A consultant in logistics coined the concept of a supply chain in the early 1980s (Oliver & Webber, 1992). According to Lummus and Vokurka (1999:11), SCM refers to “all the activities involved in delivering a product from raw material through to the customer, including sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, delivery to the customer, and the information systems necessary to monitor all of these activities.” The focus of the supply chain is to facilitate the rapid identification of requirements, and improve the tendering process, payment, and contract management. Oisamoje and Areloegbe (2014) outlined its benefits to include effective workflows, lower prices, lower information and transactional costs, increase in compliance, and speedy processing and delivery of orders. The following supply chain management variables (procurement outsourcing, information flow management, and order process management) are discussed, and how they impact the performance of manufacturing organizations in Nigeria.

### ***Procurement Outsourcing***

Tasks that are typically undertaken by internal workers are handled strategically through outsourcing (Sayed *et al.*, 2021). To reduce expenses for the firm, outsourcing comprises contracting out important non-core operations to knowledgeable and effective service providers. The primary objective of this approach in many businesses is that the company will progressively concentrate on the operations that are in the value chain or those where it has a distinctive advantage. This trend has been particularly noticeable in financial institutions, where the supply chain services of transportation, inventory management, and storage have been increasingly outsourced to specialists and experts in those fields.

In order to obtain goods and provide services, procurement functions are outsourced to a third party. It entails utilizing a third party to complete specific tasks that would cost more to be completed by a company. Outsourced procurement may result in lower costs, better compliance, increased productivity, and greater performance. The factors that support procurement outsourcing include the desire to increase profits by having vendors purchase goods at a lower cost, the rise in confidence as a result of

the apparent benefits of procurement outsourcing, limitations caused by insufficient resources and out-of-date skill sets in the firms, and revenues and profits resulting from procurement outsourcing (Skipworth *et al.*, 2020; Sayed *et al.*, 2021; Van-Thai *et al.*, 2021).

### ***Information Flow Management***

Since client tastes and preferences are constantly changing, prompt and effective reactions are essential to fostering successful corporate operations (Han & Trienekens, 2009). Information flow is described as "the flow of data in diverse directions with variable contents across various databases (departments) within an organization" (Harisson & van Hoell, 2002). Supply chain partners must be willing to explicitly communicate information with one another to maintain supply chain competitiveness. Establishing an impeccable supply chain requires access to precise and current marketing data (Huo *et al.*, 2021; Tai *et al.*, 2022). Information flow management is one of the essential characteristics of a robust supply chain relationship (La Londe, 1998). In their study, Wardaya *et al.* (2013) found that information flow management had grown to be a key indicator of teamwork within supply chain management and organizational success. In line with Wardaya *et al.* (2013) submission, all businesses must have access to current information on the quantity and location of inventory, sales information, order status, production schedules, delivery capacity, and organizational performance.

### ***Order Process Management***

According to Stevenson and Spring (2009), "order process management involves identifying the collective tasks associated with fulfilling an order for goods or services placed by a customer including all activities necessary to define customer requirements, design a network, and enable the organization to meet customer requests while minimizing the total delivered cost". Three primary tasks—creating a flow of information prior to, during, and following the delivery of the goods—define order process management (Christopher, 2005).

### ***Theoretical Underpinning***

The stakeholder theory is the foundation of this work. Any individual or group that has an interest in or is impacted by the organization is considered a stakeholder (Freeman, 1984). According to the "stakeholder hypothesis," a company has relationships with both internal and external stakeholders, and its actions may have a positive or bad impact on those relationships. Each stakeholder's proportional importance depends on specific problems the company is facing and is subject to change over time (Buysse & Verbeke, 2003). A stakeholder's influence over a firm grows as they gain urgency, authority, and legitimacy (Buysse & Verbeke, 2003).

Competitors, suppliers, customers, academicians, shareholders, the government, non-profit organizations, and the general public are a few examples of stakeholders. Rogers and Tibben-Lembke

(1999) opine that fierce competition has caused many businesses to relax their return policies. Therefore, it is obvious that stakeholders such as competitors do have an impact on a firm's operations. However, by streamlining procedures to increase efficiency and reduce time wastage, reverse logistics can help businesses enhance performance. Reverse logistics may be implemented by a company out of concern about potential harsh penalties and fines for breaking environmental laws. They may as well use reverse logistics to gain financial advantages, such as in second-hand markets, given that shareholders desire bigger profits (De Brito & Dekker, 2004). Because consumers or customers want better quality and faster delivery, businesses may use the information obtained through reverse logistics to improve the quality of their products and the speed of their delivery services.

## **METHODOLOGY**

This study employed the survey research design through the use of questionnaires to establish the relationship between supply chain management variables (procurement outsourcing, information flow management, and order process management) and the performance of selected manufacturing organizations in Benin City, Nigeria. The population of the study consists of all employees of the Production Department, Procurement Department, Warehouse Department, Logistics Department, and Marketing Department distributed across two randomly selected manufacturing organizations amongst quoted manufacturing organizations operating in Edo state of Nigeria namely Seven-Up Bottling Company Plc, Benin City, and Presco Plc, Benin City. However, these two manufacturing organizations with different product lines were selected to observe their outcomes. A sample of two hundred employees from the two companies was taken. However, 186 copies of the questionnaire administered were validly filled and used for the study.

A Pilot test was conducted. Cronbach's Alpha reliability test was conducted to determine the internal consistency of the instrument items. The results of Cronbach's Alpha for each variable are- procurement outsourcing [POS = 0.876], information flow management [IFM =0.799], and order process management [OPM =0.894]. The results showed that the instrument is reliable. Data collected were analyzed using a multiple regression model via SPSS version 24 at a 5% level of significance.

## **RESULTS**

### ***Demographic profile of respondents***

The demographics presented here include gender, marital status, age, educational qualification, and department of the respondents. The results are presented in Table 1 below:

Table 1.

### ***Demographic information of respondents***

Variable	Category	Frequency	Percent	Cumulative Percent
Gender	Male	113	60.8	60.8
	Female	73	39.2	100.0
	Total	186	100.0	
Marital Status	Single	76	40.9	40.9
	Married	109	58.6	99.5
	Divorced	1	0.5	100.0
	Total	186	100.0	
Age	1-20years	10	5.4	5.4
	21-40years	87	46.8	52.2
	41-60years	89	47.8	100.0
	Total	186	100.0	
Educational Qualification	SSCE/GCE	40	21.5	21.5
	ND/NCE	71	38.2	59.7
	HND/First Degree	74	39.8	99.5
	Masters	1	0.5	100.0
	Total	186	100.0	
Department	Production	100	53.8	53.8
	Procurement	31	16.7	70.4
	Warehouse	30	16.1	86.6
	Marketing	2	1.1	87.6
	Logistics	23	12.4	100.0
	Total	186	100.0	

Table 1 shows that, male respondents are 113 which accounted for 60.8% of the respondents. The female respondents consist of 73 and account for 39.2% of the total respondents. The marital status shows that 76 (40.9%) of the respondents were single, while 109 (58.6%) were married. Only 1 respondent representing 0.5% is divorced. The age distribution shows that 89 (47.8%) of the respondents were between 41 to 60 years old. This is followed by 21-40 years old (87, 46.8%) and 1-20 years (10, 5.4%). Only 40 employees have SSCE/GCE. This category accounts for 21.5%. 71 (38.2%) of the respondents have ND/NCE while 74 (39.8%) of the respondents have a first degree (HND/B.Sc Degree). Respondents with postgraduate qualification (Masters) account for 0.5%. The respondents were grouped into five departments. The majority of the respondents are from the production department. This category accounts for 53.8%. Respondents from the procurement department account for 16.7% while respondents from the warehouse department account for 16.1%. Respondents from the Logistics and Marketing departments account for 12.4% and 1.1% respectively.

### ***Descriptive statistics and correlation analyses***

The results are shown in Table 2:



Table 2

*Mean, standard deviation, and Pearson correlation coefficients*

Variables	PERF	POS	IFM	OPM
Performance (PERF)	1			
Procurement Outsourcing (POS)	0.425**	1		
Information Flow Management (IFM)	0.323**	-0.110	1	
Order Process Management (OPM)	0.343**	0.121	0.108	1
Mean	4.24	3.69	4.30	4.40
Standard Deviation	0.263	0.327	0.314	0.232

*Note:* N = 186; \* = P<1%.

The mean and the standard deviation for the variables are performance ( $\bar{X} = 4.24$ ; SD = 0.263); procurement outsourcing ( $\bar{X} = 3.69$ ; SD = 0.327); information flow management ( $\bar{X} = 4.30$ ; SD = 0.314); and order process management ( $\bar{X} = 4.40$ ; SD = 0.232). The results in Table 2 revealed that performance is positively and significantly related to procurement outsourcing ( $r = 0.425$ ,  $p < 0.05$ ), information flow management ( $r = 0.323$ ,  $p < 0.05$ ), and order process management ( $r = 0.343$ ,  $p < 0.05$ ).

### ***Regression Analysis Results***

The relationship between performance and supply chain Management variables which are procurement outsourcing, information flow management, and order process management are shown in Table 3:

Table 3

*Supply chain Management variables and performance*

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-1.762	0.598	-	-2.949	0.004	-	-
POS	0.549	0.075	0.432	7.297	0.000	0.970	1.031
IFM	0.454	0.078	0.343	5.801	0.000	0.973	1.028
OPM	0.454	0.106	0.254	4.291	0.000	0.971	1.030

$R^2 = .381$ ; Adj  $R^2 = .371$ ; F-Statistic = 37.40; F-Statistic (Prob) = 0.000;

Durbin-Watson = 2.066; Number of Observation = 186

Dependent Variable: Performance

POS = Procurement outsourcing; IFM = Information flow management; and OPM = order process management.



Table 3 reveals that performance is positively and significantly related to all the supply chain management variables (procurement outsourcing, information flow management, and order process management). The details of the relationship between the dependent variable and independent variables are shown as follows: performance and procurement outsourcing ( $\beta= 0.549$ ;  $p<0.05$ ); performance and information flow management ( $\beta= 0.454$ ;  $p<0.05$ ); performance and order process management ( $\beta= 0.454$ ;  $p<0.05$ ). The regression result shows that when the independent variables were regressed on performance, a coefficient of determination ( $R^2$ ) value of 0.381 was obtained. Given the value of Adjusted  $R^2$  of 0.371 indicates that the independent variables jointly explain 37.1% of the variation in the dependent variable. The F-statistic of 37.40 is significant at  $p<0.05$ . This means that there is a statistically significant relationship between the dependent variable and the independent variables as a group.

Hair *et al.* (2010) opine that to conclude that multi-collinearity is absent in any data set, the tolerance value must be considered beyond 0.10 while the variance inflation factor (VIF) ought to be below 5. The results in Table 3 show that the tolerance values ranged from 0.970 to 0.973, evidence of substantial scores above the minimum threshold. Additionally, the variance inflation factors (VIFs) ranging from 1.028 to 1.031 were above the maximum limit of acceptability. Finally, the Durbin-Watson statistic of 2.066 in consonance with the collinearity statistics (tolerance and variance inflation factor) rules out multicollinearity in the model.

## **DISCUSSION OF FINDINGS**

First, the study revealed a positive and statistically significant association between performance and procurement outsourcing. The result of Kinyanjui's (2014) investigation into the connection between procurement outsourcing and the performance of manufacturing companies in Nairobi supports this finding. According to the study, performance and procurement outsourcing are positively correlated. It also accords with the conclusions of Kogoh (2015), who looked into how outsourcing affected the performance of the Kenyan logistics sector. It was discovered that the performance of Kenya's logistics industry was statistically improved by outsourcing order processing, transportation logistics, and warehousing. However, the finding of this study is inconsistent with Kogoh's (2015) investigation in the area where packaging logistics outsourcing does not significantly impact the performance of the logistics industry in Kenya. Secondly, information flow management has a positive and statistically significant relationship with performance. Wachira's (2013) results support our research outcome as the empirical results show communication has a positive correlation with performance. Here, communication has to do with information flow/sharing and technology interchanges. The model shows that communication among other independent variables studied is a suitable predictor of supply chain performance. Effective and timely responses to ever-changing customer tastes and preferences have

become a vital mechanism for successful business performance in a dynamic and highly competitive business environment, hence the significant nature of information flow management on performance.

Finally, order process management was also found to have a positive and statistically significant relationship with performance. This finding validates the study of Perry (2012), Kogoh (2015), and Mwangangi (2016) respectively. According to Perry's (2012) investigation, order fulfillment positively correlated to organizational performance and competitive advantage. The study of Mwangangi (2016) established that order process management positively and significantly influences the performance of firms. However, Kogoh (2015) revealed that order processing outsourcing has a statistically positive effect on the performance of the logistics industry in Kenya.

### **CONCLUSION AND RECOMMENDATIONS**

This study examined how supply chain management variables impact the performance of manufacturing organizations in Nigeria. These variables include procurement outsourcing, information flow management and order process management. Data were collected from the employees of two selected manufacturing organizations operating in the Edo state of Nigeria and working in different departments namely: production, procurement, warehouse, logistics, and marketing. The study found that a positive and statistically significant relationship exists between supply chain management variables (procurement outsourcing, information flow management, and order process management) and the performance of manufacturing organizations in Nigeria. The study, therefore, concluded that supply chain management variables (i.e. procurement outsourcing, information flow management, and order process management) have a positive and significant impact on the performance of manufacturing organizations in Nigeria. Based on these findings, the study recommends that the management of manufacturing organizations conduct a benchmarking exercise for the top players in the industry as a means to enhance their procurement outsourcing procedures and attain unmatched performance of their supply chains. Also, manufacturing organizations should concentrate on the production and services they have the expertise on and outsource those functions other firms or individual can do better for them.

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### **REFERENCES**

- Batista, L. (2009). *Key operations performance factors on trade and transport facilitation*. Proceedings of the 14th Annual Logistics Research Network Conference, Cardiff, UK, September.
- Buysee, K., & Verbeke A. (2003). Proactive environmental strategies: a stakeholder management perspective. *Strategic Management Journal*, 24(5), 453-470.
- Christopher, M. (2005). *Logistics and supply chain management: Creating value-adding networks*. London, UK: Prentice Hall.
- Christopher, M. (2000). The agile supply chain: Competing in volatile markets. *Industrial Marketing Management*, 29(1), 37-44.
- Davis-Sramek, B., Germain, R., & Stank, T. P. (2010). The impact of order fulfillment service on retailer merchandising decisions in the consumer durables industry. *Journal of Business Logistics*, 31(2), 215-230.
- De Brito, M., & Dekker, R. (2004). A framework for reverse logistics. In *reverse logistics; Quantitative models for closed-loop supply chains*, pp.3–27. (Springer-Verlag, Germany).
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston, MA: Pitman.
- Fugate, B. S., Mentzer, J. T., & Stank, T. P. (2010). Logistics performance: Efficiency, effectiveness, and differentiation. *Journal of Business Logistics*, 31(1), 43-62.
- Green, K. W, Jr., Zelbst, P. J., Meacham, J., & Bhaduria, V. S. (2012). Green supply chain management practices: Impact on performance. *Supply Chain Management: An International Journal*, 17(3), 290-305.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate data analysis*. Upper saddle River.
- Han, J., & Trienekens, J. H. (2009). Integrated information and logistics management, quality management and firm performance of pork processing industry in China. *British Food Journal*, 111 (1), 9-25.
- Harisson, A., & van Hoell, R. (2002). *Logistics management and strategy* (6th Ed). London: Pearson Education Limited.
- Huo, B., Haq, M. Z. U., & Gu, M. (2021). The impact of information sharing on supply chain learning and flexibility performance. *International Journal of Production Research*, 59(5), 1411-1434.
- Iriqat, R. A. M., & Abu-Daqqar, M. A. M. (2017). The role of customer relationship management in enhancing the customers' satisfaction in the banks in Palestine. *Modern Applied Science*, 11(12), 84-91.
- Kaberger, M., & Richu, S. (2015). Effect of reverse logistics on operational performance of Sisal processing firms in Nakuru county, Kenya. *International Journal of Economics, Finance and Management Sciences*, 3(5), 556-565.
- Kaufmann, L., & Carter, C. (2006). International supply relationships and non-financial performance - A comparison of US and German practices. *Journal of Operations Management*, 24(5), 653–675.
- Keebler, J. S., & Plank, R. E. (2009). Logistics performance measurement in the supply chain: A benchmark. *An International Journal*, 16(6), 785-798.
- Kinyanjui, M. B. (2014). *Procurement outsourcing and supply chain performance of manufacturing firms in Nairobi, Kenya* (Unpublished MBA Thesis). School of Business, University of Nairobi, Kenya.
- Kogoh, Z. B. K. (2015). *Effect of outsourcing on performance of logistics industry in Kenya* (Thesis). Strathmore University. Retrieved from <http://su-plus.strathmore.edu/handle/11071/4730>
- La Londe, B. J. (1998). Building a supply chain relationship. *Supply Chain Management Review*, 2(2), 7-8.

- Lummus, R. R., & Vokurka, R. J. (1999). Defining supply chain management: A historical perspective and practical guidelines. *Industrial Management and Data Systems*, 99(1), 11- 17.
- Memia, F. K. (2018). *Influence of contemporary supply chain practices on performance of large manufacturing firms in Kenya* (Doctoral dissertation, JKUAT-COHRED).
- Miguel, P. L. S., & Brito, L. A. L. (2011). Supply chain management measurement and its influence on operational performance. *Journal of Operations and Supply Chain Management*, 4(2), 56 – 70.
- Mutimos, A. (2014). *Relationship between reverse logistics practices and organizational performance of manufacturing firms in Kenya* (Unpublished MBA Project). University of Nairobi, Kenya.
- Mwangangi, P. W. (2016). *Influence of logistics management on performance of manufacturing firms in Kenya* (Unpublished Ph.D. Thesis). Jomo Kenyatta University of Agriculture and Technology, Kenya.
- Nowakowski, T. (2004). Reliability model of combined transportation system. *Probabilistic Safety Assessment and Management*. Spitzer, C., Schmocker, U. and Dang, V. N. (ed.). London: Springer
- Oisamoje, M. D., & Areloegbe, H. A. (2014). Supply chain management and completion of petroleum projects in Nigeria. *European Journal of Logistics Purchasing and Supply Chain Management*, 2(1), 42-61.
- Oliver, R. K., & Webber, M. D. (1992). Supply chain management: Logistics catches up with strategy. In Christopher, M. (Ed.), *Logistics: The Strategic Issues* (pp. 63-75). London: Chapman and Hall, London.
- Oyewo, B. M., Oyedokun, G. E., & Azuh, A. E. (2019). The use of multi-perspective strategic performance measures by manufacturing firms: Benefits, determinants and challenges. *DLSU Business and Economics Review*, 29(1), 115-130.
- Paiva, E. L., Phonlor, P., & D’Avila, L. C. (2008). Buyers-supplier relationship and service performance: An operations perspective analyses. *Journal of Operations and Supply Chain Management*, 1(2), 77 – 88.
- Perry, J. F. (2012). *The impact of supply chain management business processes on competitive advantage and organizational performance* (M.Sc. Thesis). Department of Operational Sciences, Air University, Ohio.
- Prabusankar, R. (2017). Impact of supply chain management practices on competitive advantage of small manufacturing firms in Coimbatore district. *International Journal of Mechanical Engineering and Technology*, 8(10), 836–843.
- Puska, A., Kozarevic, S., & Okicic, J. (2020). Investigating and analyzing the supply chain practices and performance in agro-food industry. *International Journal of Management Science and Engineering Management*, 15(1), 9-16.
- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance as a dependent variable: Towards methodological best practice. *Journal of Management*, 35(3), 718-804.
- Rogers, D., & Tibben-Lembke, R. (1999). *Going backwards: Reverse logistics trends and practices*. Reverse Logistics Executive Council Press, Pittsburgh.
- Sayed, M., Hendry, L. C., & Zorzini Bell, M. (2021). Sustainable procurement: Comparing in-house and outsourcing implementation modes. *Production Planning & Control*, 32(2), 145-168.
- Sillanpaa, I., & Kess, P. (2012). The literature review of supply chain performance measurement in the manufacturing industry. *Management and Production Engineering Review*, 3(2), 79-88.

- Skipworth, H., Delbufalo, E., & Mena, C. (2020). Logistics and procurement outsourcing in the healthcare sector: A comparative analysis. *European Management Journal*, 38(3), 518-532.
- Slack, N., Chambers, S., & Johnston, R. (2004). *Operations management* (4th Edition). Harlow, England; New York: Financial Times Prentice Hall
- Smith, M., & Chang, C. (2010). Improving customer outcomes through the implementation of customer relationship management: Evidence from Taiwan. *Asian Review of Accounting*, 18(3), 260–285.
- Stank, T., Goldsby, T., & Vickery, S. (1999). Effect of service supplier performance on satisfaction and loyalty of store managers in the fast food industry. *Journal of Operations Management*, 17, 429 – 447.
- Stevenson, M., & Spring, M. (2009). Supply chain flexibility: An inter-firm empirical study. *International Journal of Operations and Production Management*, 2(9), 946-971.
- Tai, P. D., Duc, T. T. H., & Buddhakulsomsiri, J. (2022). Value of information sharing in supply chain under promotional competition. *International Transactions in Operational Research*, 29(4), 2649-2681.
- Thoo, A.C., Huam, H.T., Yusoff, R.M., Rasli, A. M., & Hamid, A.B. A. (2011). Supply chain management: Success factors from Malaysian manufacturer’s perspective. *African Journal of Business Management*, 5(17), 7240-7247.
- Tracey, M., & Tan, C. L. (2001). Empirical analysis of supplier selection and involvement, customer satisfaction and firm performance. *Supply chain management: An International Journal* 6 (4), 174-188.
- Van Thai, V., Rahman, S., & Tran, D. M. (2021). Revisiting critical factors of logistics outsourcing relationship: a multiple-case study approach. *The International Journal of Logistics Management*, 33(1), 165-189.
- Voss, C. A, Ahlstrom, P., & Blackmon, K. (1997). Benchmarking and operational performance: Some empirical results. *International Journal of Operations and Production Management*, 17(10), 1046 – 1058.
- Wachira, R. W. (2013). *Supplier relationship management and supply chain performance in alcoholic beverage industry in Kenya* (Unpublished MBA Thesis). University Of Nairobi, Kenya.
- Wardaya, Idrus, M. S., Hadiwidjoyo, D., & Surachman. (2013). Improving competitiveness of the national industry of logistics service providers through collaboration from the perspective of consumer goods manufacturing companies in east Jav. *International Journal of Business and Management Invention* 2(5), 27-38.
- Zhang, Q., Vonderembse, M. A., & Lim, J. S. (2005). Logistics flexibility and its impact on customer satisfaction. *The International Journal of Logistics Management*, 16(1), 71-95.