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SUPPLY CHAIN MANAGEMENT PRACTICES AND MANUFACTURING FIRMS PERFORMANCE: PROFESSIONALS' EXPERIENCE IN NIGERIA

Sulaimon Olanrewaju Adebiyi[1], Adeyemi Sulaiman Adediran[2], Abideen Olayinka Shodiya[3], Taiwo Olusola[4]

[1]Department of Business Administration, University of Lagos, Akoka, Lagos, Nigeria, soadebiyi@unilag.edu.ng

[2]Department of Business Administration, University of Lagos, Akoka, Lagos, Nigeria, adediran.yemi@yahoo.com

[3]Department of Business & Finance, Crescent University, Abeokuta, Nigeria, olayinkashodiya@crescent-university.edu.ng

[4]Department of Business Administration, Federal University of Agriculture, Abeokuta, Nigeria, olusolataiwo9@gmail.com

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Abstract

Research purpose. The study aims at establishing how supply chain management (SCM) activities of manufacturing firms influence their performance optimally.

Design/Methodology/Approach. The research design adopted for the study is the survey research design; this is because we were interested in gathering information from a selected strategic fraction of a target population as it is not possible to meet them all. A structured questionnaire was used to collect data from two hundred and twenty-seven (227) professionals from the five selected manufacturing firms in Lagos. The data were analyzed by the structural equation modelling (SEM) technique to ascertain the causal effect of the latent exogenous variables on the latent endogenous variables in the study.

Findings. Based on the results of the SEM adopted in testing the research hypotheses, strategic partnership has a statistically significant positive effect on customer satisfaction of manufacturing firms. Customer relationship management was revealed to have a positive effect on firm performance from the path analysis. This is substantiated by the path coefficient (0.35) of customer relationship management on performance proxied by customer satisfaction. However, information sharing has a weak positive effect on performance proxied by manufacturing efficiency. This is substantiated by the path coefficient (0.11) of information sharing on performance though the effect is not significant as $p>0.05$ and $CR<1.96$. Material flow management has a positive effect on performance proxied by manufacturing efficiency. This is substantiated by the path coefficient (0.30) of material flow management on firm performance. There is a positive effect of lean production on performance proxied by innovation performance. This is substantiated by the path coefficient (0.25) of lean production on performance. Finally, participative design/engineering was revealed to have a positive effect on performance proxied by innovation performance. This is substantiated by the path coefficient (0.23) of participative design/engineering on performance.

Originality/Value/Practical implications. This paper demonstrates that a higher degree of acceptance, application, and enhancement in SCM methods would directly increase the performance of manufacturing firms, especially in third world countries.

Keywords: supply chain management; manufacturing firms; performance; SEM.

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Introduction

The sustainability of any business depends on its ability to continuously improve its performance metrics and stay profitable and competitive. A supply chain is a network of functions or organizations connected through the products and services that they offer in order to deliver them to the end consumer. Crandall, Crandall, & Chen (2015) highlights that a simple supply chain consists of participants in a certain order from upstream to downstream. The practices and activities of managing supply chains are known as supply chain management (SCM). They are the set of events and activities that happen in an organization to ensure the effective management of the value chain (Truong et al., 2017). The Association of Supply Chain Management (2019) defines SCM as "the design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally". The practice of SCM refers to all sets of activities that are done in organizations to improve efficiency in the internal supply chain. This will help the organization to achieve sustained good performance and excellent customer service (Omoruyi & Mafini, 2016).

Manufacturing firms are faced with competition and other tough external factors that shape their operating environment and impacts performance. Local manufacturing firms have to compete with globally sourced goods. Moreover, government policies regulate the operations of firms and can impact manufacturing costs and general performance. This means that firms must improve their performance by developing and implementing agile and responsive practices in supply chain management. Hence, the study adopts the RBV theory, which states that an organization can focus on the potential of its internal resources to deliver some competitive edge. The concept of supply chain management has gained the attention of professionals and scholars alike (Chaghooshi et al., 2015) as manufacturing firms all over the world are faced with lots of challenges that impact their performance; challenges like market instability, high cost of raw material and energy abound in the sector. However, few studies have been conducted to unravel the impact of SCM practices on organizational performance in a volatile business environment. The study of Sharma and Modgil (2020) used total quality management as the independent variable and SCM to mediate its influence on the operational performance of the pharmaceutical industry in India. A similar kaleidoscopic business environment like Nigeria is the focus of this study where the contribution of the manufacturing sector has been on a downward trend despite the strategic importance of this sector to the economy; there is an urgent research attention. Hence, a study of how their activities under SCM influence their performance is required and will help those organizations to focus and repurpose their resources to ensure optimal performance. This paper set out to evaluate supply chain management practices in manufacturing firms from the perspectives of professionals with the aid of structural equation modelling (SEM).

Literature Review

Supply chain management is a set of methods used for the efficient integration of supply chain partners-suppliers, manufacturers, warehouses, and retailers so that a correct number of goods can be manufactured and distributed at the best place and time at an optimal cost. (Shafiei & Tarmost, 2014). To be effective, supply chain management (SCM) integrates the internal cross-function within a firm with the exterior operations of external partners in a close and effective manner. SCM's goal is to share market information, develop new products, improve the number of suppliers for manufacturers, and activate and release management resources to build long-term relationships based on the members' initial trust needs (Nilipour--Tabatabaei et al., 2012). According to Phan et al. (2019), in 2010, many manufacturing companies in Vietnam became more focused on supply chain management (SCM) practices to find the way to respond rapidly, correctly, and profitably to market demands which any focused manufacturing firms must ensure. Thus, Managers must pay more attention to building long-term partnerships with suppliers, selecting the suppliers based on quality issues rather than cost, sharing information with suppliers and customers,

involving customers and suppliers in problem-solving and quality improvement activities (Zeng, Phan, & Matsui, 2013) which are essential practices in supply chain management.

For a partnership to be strategic, it focuses on smooth, lasting association and boosts common planning and solution proffering efforts (Zhao & Lee, 2009). This makes working together mutually beneficial among the parties and brings about continuous involvement in core areas such as technology, portfolio, and markets. An effective partnership with a supplier can be a critical component of a leading-edge supply chain (Kroes & Ghosh, 2010). Moreover, a strategic supplier relationship is an important criterion in achieving a long-term association for both the buyer and the supplier of any organization (Theodorakioglou et al., 2006). As information is important for maintaining supplier relationships in the long term, various tools and techniques are used (Teller et al., 2017).

H_{01}: Strategic supplier partnership has no impact on customer satisfaction of manufacturing firms in Nigeria.

The practice of attending to consumers to manage their complaints, establish long-term relationships with customers, and improve customer satisfaction is known as customer relationship management (Li et al., 2006). This encompasses all procedures aimed at resolving market grievances, establishing lasting partnerships, and increasing customer happiness. According to Jharkharia & Shankar (2006), a vital part of SCM practices is the managing of relationships with customers. Relevant to the successful implementation of SCM programs is the partnership with customers (Jie et al., 2013). Closing the gaps with customers makes it easy for an organization to deliver differentiated services. This will make customers loyal and significantly improve value offerings.

H_{02}: Customer relationship management has no impact on customer satisfaction of manufacturing firms in Nigeria.

The level of information sharing is the extent of the availability of critical and proprietary information among supply chain partners (Li et al., 2005). Part of this timely information, accurate information, as well as the authenticity of information disseminated to SCM partners. Both quantity and reliability of information sharing are vital to SCM and are usually regarded as separate constructs in previous research (Chau, 1997). The level is measured by the extent to which relevant and occupational information is available for partners to use. (Tan, 2002). Exchanged information is either strategic or tactical in nature. It also varies from information about logistics activities to general market and customer information (Slater & Narver, 2000). By readily making data available for other parties within the supply chain, information can be used as a source of competitive advantage (Liere et al., 2010).

H_{03}: Information sharing has no impact on the manufacturing excellence of manufacturing firms in Nigeria.

Lean practice is the process that is used to eliminate waste in a manufacturing cycle. It is a philosophy, a work environment, a method, an administrative idea. It is considered valuable, methodic, and ethical. Today, lean has metamorphosed, and it can improve aspects of an organization. (Mark, Wilson & Ram, 2009). Lean practices have numerous benefits, including helping to eliminate waste in all procurement cycles, prevent shortfalls, reduce inventory cost, reduce procurement lead time and cost, increase inventory turnover, and ensure customer satisfaction. (Lewis, 2000). With regards to Lean practices and Supply Chain Performance, Zaman and Ahsan (2014) state that Lean practices can be applied in many supply chains,

particularly those seeking to boost performance by eliminating waste. If a supply chain is cost-competitive, utilization of lean to remove waste and reduce costs will be required. The lean tools and techniques can help to achieve the linkage between supply chain practices and performance.

H_{04}: Material flow management has no impact on the manufacturing excellence of manufacturing firms in Nigeria.

Banjoko (2000) explained the basic aim of materials management, and that is to make certain that material is procured and delivered at an optimal time, cost, location with the best price in mind. Barker (1989) identified five key functional areas that materials management cuts across, which include purchasing, production and inventory control, quality control, storage and warehousing and physical distribution. Materials are the backbone of any production system and even service system; no organization can operate without them. Coordination and scheduling of production activity require that materials must be and delivered at an optimal time, cost, location with the best price. Chase, Jacobs, Aquilano and Agarwal (2009) discussed the elements of materials management and mentioned the comprehensive systems framework for understanding the full flow of information, materials, and services from business suppliers to the market through the internal processes of the company.

H_{05}: Lean production has no impact on the innovation performance of manufacturing firms in Nigeria.

There are numerous methods for evaluating a company's performance; nonetheless, many firms' ultimate purpose is to achieve financial and accounting results (Macinati, 2008). In research involving just about any aspect of management, the ultimate desire has always been to understand overall organizational performance. This construct is critical for researchers and managers to compare and analyze the operations of companies throughout time (Richard, Devinney, Yip & Johnson, 2009). Organizational performance is a metric that assesses how well a company achieves its objectives (Ho, 2008). There is no universal agreement on what constitutes organizational performance or its means of measurement. Several previous studies used several dimensions to assess organizational success. Financial indicators, on the other hand, have long been used as a tool for comparing firms and evaluating their performance (Karimi & Rafiee, 2014). Several studies have identified various elements of assessing organizational success, with a bulk of them relying on indicators that have financial leaning as primary indicators, for example, market volume, ROI, growth parameters, the profit margin on sales, and the position of the firm within the industry. Review of organizational performance is separated into two aspects based on the results of performed research: performance in terms of operations and profitability (Radu-Ioan, 2014).

H_{06}: Participative design/engineering has no impact on the innovation performance of manufacturing firms in Nigeria

Methodology

The research design adopted for the study is the survey research design, where the cross-sectional research design, which involves a one-time sampling of respondent's opinions relevant to answer the research questions and to allow data to be collected from a large sample at the same time period was employed. The target population in the study was composed of SCM professionals within selected manufacturing companies in Lagos State, Nigeria. A proportionate sampling method was used due to the stratified nature of the population. Based on the nature of the observed variables and the objectives to be achieved in this

study, primary data was employed, and a self-administered questionnaire was designed to assess the study population with respect to the described dimensions and generate the data for the study. A pilot study was carried out, and first-order confirmatory factor analysis (CFA) was conducted to assess the validity and reliability of the measurement model in structural equation modelling (SEM). SEM path analysis was deployed for the test of the hypothesis with the aid of Analysis of Moments Structures (AMOS) Graphics to ascertain the strength of the relationship between the latent constructs of SCM and the performance's constructs in the study.

The target population in the study composes of SCM professionals within five selected manufacturing companies in Lagos State, Nigeria. The target population was obtained to be five hundred and twenty-three (523) professionals across the five companies, as seen in Table 1.

Table 1. Study Population

Functions	Crown Flour Mill Ltd	BUA Sugar Refinery	Dangote Flour Mill	Kimberly Clark	Perfetti Van Melle	Total
Procurement/Purchasing	12	6	11	5	9	43
Stores/Inventory/Material Handling	33	14	22	12	14	95
Operations/Production	44	46	56	24	33	203
Logistics/Fleet/Evacuation	24	36	38	13	12	123
Warehousing/Distribution	6	8	7	18	20	59
						0
	119	110	134	72	88	523

A proportionate sampling method was used due to the stratified nature of the population. To be included in the sample study, individuals had to meet some criteria; the individual had to be currently occupying a position in which they perform supply chain management functions in a manufacturing firm. These functions are sourcing, material management, production planning, distribution, and sales planning. It is also required to have accrued a minimum of one year of experience performing these functions to be included. The sample selection of targeted firms was based on the years of their existence in the business, market presence of products, location, and the prompt retrieval of relevant data.

The sample size was determined from a population of 523 professionals using the formula from Yamane (1967), $n=N/(1+Ne^2)$ where n is the sample size, N is population size 523, e is margin of error at 5%, using this, the sample size came out as 227, considering the proportion of the various functions in the population the required breakdown of sample is as Table 2.

Table 2. Sample size proportion

Functions	Crown Flour Mill Ltd	BUA Sugar Refinery	Dangote Flour Mill	Kimberly Clark	Perfetti Van Melle	Total	sample size
Procurement/Purchasing	12	6	11	5	9	43	19
Stores/Inventory/Material Handling	33	14	22	12	14	95	41
Operations/Production	44	46	56	24	33	203	88
Logistics/Fleet/Evacuation	24	36	38	13	12	123	53
Warehousing/Distribution	6	8	7	18	20	59	26
						523	227

The data used for the study were generated through questionnaires' responses taken from the respondents. The questionnaire was structured into two sections. Section A addresses the social-demographic characteristics of the respondents such as gender, age, marital status, qualification, years of experience in supply chain businesses, while Section B to G comprise some questions related to SCM practices. Section H includes all questions related to performance measures.

The data extracted from the questionnaire administered were analyzed using descriptive statistics on SPSS to determine the mean and frequency distribution of the data. Analysis of Moments Structures (AMOS) for the structural equation model was used to test the hypothesis. A structural equation model combines a structural model and measurement model and is useful for the analysis of latent variables, which are the types of variables used to represent SCM practices.

The regression model for the study is hereby specified as follows:

$$DY = f(CRM, SSP, LOI, LP, MM, PE) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (i)$$

Written in mathematical form,

$$DY = \beta 0 + \beta 1CRM + \beta 2SSP + \beta 3LOI + \beta 4LP + \beta 5MM + \beta 6PE + \epsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (ii)$$

Where:

DY = Dependent Variable (organizational performance)

CRM = Customer Relationship Management

SSP = Strategic Supplier Partnership

LOI = Level of Information Sharing

LP = Lean Production

MM = Material Management

PE = Participative Design/Engineering

E = Error terms

B0, β1, β2…. = parameters

Results

Demographic Data

The study established the relationship between supply chain management practices and manufacturing firms' performance. Two hundred and twenty-seven (227) respondents were selected as the sample size, and the same copies of the questionnaire were distributed out, of which two hundred and three (203) were duly filled, returned, and were found fit for data analysis. This gives an approximate response rate of 89.4%. The data collected revealed that 71.4% of the total respondents were male; 28.6% of the respondents were female. It shows that most of the respondents were male. Notwithstanding, the study is not gender-bias; it cuts across all gender. 28.1% of the respondents fall within the age bracket of 18-24years; 39.4% were between 25-30years; 24.6% were within 31-49yrs; while 7.9% fall within the age bracket of 50years and above. On educational qualification, 15.8% of the respondents were ND/Equivalent holders; 62.1% were HND/BSc holders, and 22.2% were MSc degree holders. It revealed that most of the respondents were

learned and quite educated to know the relevance and implication of the study. In terms of work experience, 27.6% of the respondents had 1-3years experience, 52.2% had 4-9years experience, and 20.2% had ten years and above. It indicates that the majority of the respondents are well-experienced in their respective fields and can provide data relevant to the context of this study.

From the data collected, the overall mean score (4.07) revealed that the firm had adopted strategic supplier relationships to a larger extent. From the data collected, the overall mean score (3.92) revealed that the firm had adopted customer relationship management to a greater extent. From the data collected, the overall mean score (3.94) revealed that there is a high level of information sharing in the studied firms. From the data collected, the overall mean score (3.88) revealed that material flow management is highly practiced in the studied firms. From the data collected, the overall mean score (3.88) revealed that lean production is highly practiced in the studied firms. Furthermore, the overall mean score (3.85) revealed that there is high participative design/engineering in the studied firms.

Analysis of Research Objectives

This sub-section deals with the analysis of the study's objectives, which were analyzed using structural equation modelling (path analysis) with the aid of Analysis of Moments Structures (AMOS) Graphics. Figure 1 below displays the path diagram resulting from the structural modelling analysis using AMOS Graphics. The model's explanatory power is determined by two values: squared multiple correlations (R^2) and path coefficient. The path coefficients demonstrate the strength of links between constructs, whereas R^2 reveals the proportion of variance an endogenous represents in the model. Endogenous R^2 is defined as strong = 0.26, moderate = 0.13, and weak = 0.02 (Chin, 1998). The structural model's R^2 score in this study is 0.41, indicating that it has a great deal of power in describing the influence of all factors on firm performance. The results also demonstrate that all of the measurements have substantial loadings on the constructs they correspond to.

Table 3 presents the fitness of the structural model. The indices adopted for achieving the fitness of the structural model show satisfactory fit with their corresponding values greater than the recommended values. Therefore, the structural model can be considered a good representation of the data.

Table 3. The fitness of the Structural Model

Goodness of fit Statistic	Structural Model Values	Recommended* values for good fit
$\chi 2$ /df	2.752	< 3.00
NFI	0.901	> 0.9
TLI	0.911	> 0.9
CFI	0.921	> 0.90
RMSEA	0.071	< 0.08

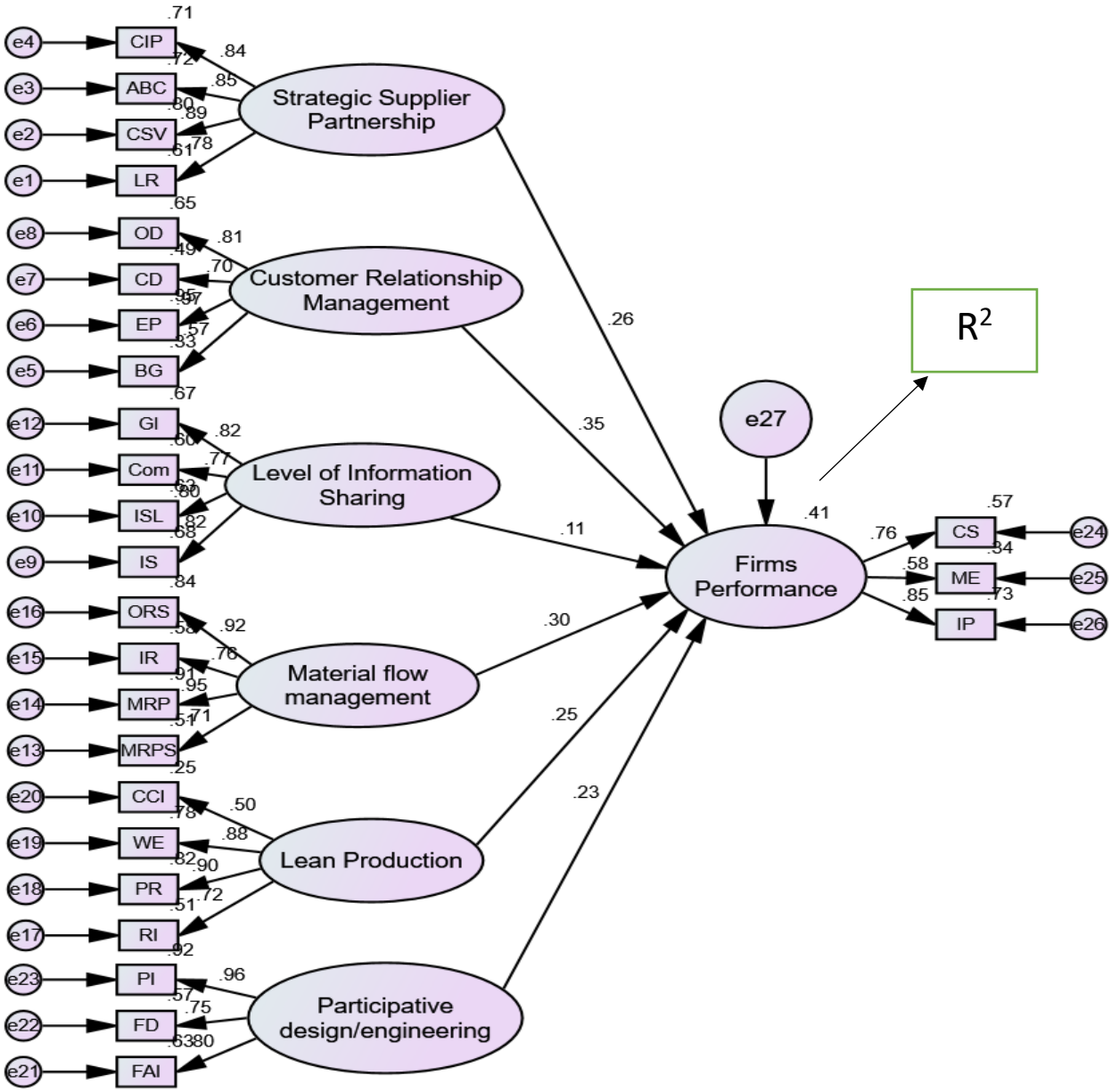

Fig.1. Structural Model for Supply Chain Management Practices and Manufacturing Firms' Performance

Table 4 shows the summary of path coefficients of the latent independent constructs (strategic supply partnership, customer relationship management, level of information sharing, material flow management, lean production, and participative design/engineering) to latent dependent construct (firm performance) extracted from the structural model in Figure 1. The finding revealed that Hypotheses 1, 2, 4, 5, and 6 were accepted, which indicated that strategic supply partnership (SSP), customer relationship management (CRM), material flow management (MFM), lean production (LP), and participative design/engineering

have a significant and positive effect on firm performance. However, Hypothesis 3 was rejected, which indicated that the level of information sharing (LIS) has no insignificant effect on firm performance.

Table 4. Construct Structural Model (SCM Practices and Performance)

Link in the model	Hypothesis	Path Coefficient	Critical Ratio (CA)	p-value	Result
P <-- SSP	H1	0.26	2.169	0.050	Alternate hypothesis Accepted
P <-- CRM	H2	0.35	2.614	0.009	Alternate hypothesis Accepted
P <-- LIS	H3	0.11	0.921	0.357	Alternate hypothesis Rejected
P <-- MFM	H4	0.30	2.428	0.015	Alternate hypothesis Accepted
P <-- LP	H5	0.25	2.034	0.042	Alternate hypothesis Accepted
P <-- PD/G	H6	0.23	1.986	0.049	Alternate hypothesis Accepted

Test of Hypotheses

The result of the path analysis in Figure 1 reveals a positive effect of strategic supplier partnership on firm performance proxied by customer satisfaction. This is substantiated by the path coefficient (0. 26) of strategic supplier partnership on performance. This implies that a 1% increase in strategic supplier partnership accounted for a 26% increase in customer satisfaction. Furthermore, the effect of strategic supplier partnership on firm performance was found significant at $p < 0.05$ and $CR > 1.96$. This, therefore, led the study to reject the null hypothesis and concluded that strategic supplier partnership has a significant positive effect on firm performance.

Customer relationship management was revealed to have a positive effect on firm performance from the path analysis. This is substantiated by the path coefficient (0.35) of customer relationship management on performance proxied by customer satisfaction. This implied that a 1% increase in customer relationship management accounted for a 35% increase in customer satisfaction. Furthermore, the effect of customer relationship management on firm performance was found significant at $p < 0.05$ and $CR > 1.96$. This, therefore, led the study to reject the null hypothesis and concluded that customer relationship management had a significant positive effect on firm performance.

As revealed in the path analysis, information sharing has a weak positive effect on performance proxied by manufacturing efficiency. This is substantiated by the path coefficient (0.11) of Information sharing on performance. This implies that a 1% increase in information sharing accounted for an 11% increase in performance. However, the effect of information sharing on firm performance was found to be insignificant as $p > 0.05$ and $CR < 1.96$. This, therefore, led the study to accept the null hypothesis and concluded that information sharing has no significant effect on firm performance.

It was further revealed that material flow management has a positive effect on performance proxied by manufacturing efficiency. This is substantiated by the path coefficient (0.30) of material flow management on firm performance. This implied that a 1% increase in material flow management accounted for a 30% increase in firm performance. Furthermore, the effect of quality focus on firm performance was found to

be significant at $p < 0.05$ and $CR > 1.96$. This, therefore, led the study to reject the null hypothesis and concluded that material flow management has a significant positive effect on firm performance.

The path analysis revealed a positive effect of lean production on performance proxied by innovation performance. This is substantiated by the path coefficient (0.25) of lean production on performance. This implied that a 1% increase in lean production accounted for a 25% increase in firm performance. Furthermore, the effect of lean production on performance was found significant at $p < 0.05$ and $CR > 1.96$. This, therefore, led the study to reject the null hypothesis and concluded that lean production has a significant positive effect on firm performance

Finally, participative design/engineering was revealed to have a positive effect on performance proxied by innovation performance. This is substantiated by the path coefficient (0.23) of participative design/engineering on performance. This implied that a 1% increase in lean production accounted for a 23% increase in firm performance. Furthermore, the effect of participative design/engineering on performance was found significant at $p<0.05$ and $CR>1.96$. This, therefore, led the study to reject the null hypothesis and concluded that participative design/engineering has a significant positive effect on firm performance.

Discussion

The study established the relationship between supply chain management practices and manufacturing firms' performance. The study deployed structural equation modelling (Path Analysis) for data analysis and test of hypotheses in a bid to achieve the objectives of the study. The findings were in line with most previous studies.

In hypothesis one, we conclude that there is a significant causal effect of strategic supply partnership on firm performance proxied by customer satisfaction. This result is consistent with the work of Mohammad et al. (2019), which found that supplier relationships had a beneficial impact on long-term performance. It also supports the findings of Richard et al. (2020). According to them, strategic supplier alliances are positively connected with operational success and are a crucial component of supply chain management in enhancing firm success.

In hypothesis two, the findings revealed that customer relationship management has a significant causal effect on firm performance proxied by customer satisfaction. This result backs up the findings of Sofi, Bashir, Parry, and Dar (2020) study, which demonstrated a high and positive link between CRM and customer satisfaction. Rodriguez & Boyer (2020) also suggested that when collaboration is utilized to mediate the conversation, CRM has an impact on customer relationship performance.

In hypothesis three, information sharing was found to have a weak positive effect and insignificant effect on firm performance. Information system integrated across functions in the studied firms does not impact manufacturing efficiency as revealed in the study. This finding is incompatible with the study of Makena and Mike (2014) on the impact of supply chain management practices on organizational performance and reported that information sharing had a stronger effect on firm performance. Furthermore, this result from this study is consistent through the study of Phan, Nguyen, Trieu, Nguyen and Matsui, (2019) that demonstrate the significant linkage between supply chain quality management practices and operational performance empirical evidence from manufacturing companies in Vietnam.

Considering hypothesis four, material flow management has a positive effect on performance proxied by manufacturing efficiency. It is evident that the studied firms have a robust material requirement planning system in place to facilitate manufacturing efficiency. Achieving production efficiency in a manufacturing outfit requires proper management and control of inventory by ensuring the accuracy of inventory records, which invariably impact the overall performance of firms.

The stated hypothesis, H_{05}, was rejected as the findings further show that lean production has a positive effect on performance proxied by innovation performance. The components of lean products were

extensively practiced by the studied firms. There is a culture of continuous improvement in the studied firms, and firms' production rate is synchronized with customer demand to sustain their competitiveness. Firms need to employ lean manufacturing strategies to be efficient and successful. In order to sustain such behaviors, it is necessary to employ a variety of approaches as well as appropriate strategies to help mitigate their effects and therefore improve organizational performance. Prior research has shown that using such strategies may result in significant cost reductions, including reduced manufacturing costs, lower supervision costs, shorter cycle times, enhanced customer responsiveness, increased investment, increased sales, and larger profitability. This finding is in line with the findings of Lokpriya and Vivek (2020) and Mohamad (2020), that state that lean production has a significant effect on performance. Consequently, it has been suggested that we examine the allocation of resources that really should be undertaken over time since prolonging this phase may impede more work on the previous phase from being completed.

Finally, H_{06} was rejected as findings revealed an existing positive effect of participative design and engineering on innovation performance. It is evident that all the functional areas in the studied firms are involved in product design. By adopting modern technology in the production, new product development and product design can be facilitated at a minimum cost and at the same time maximizing customer satisfaction thus, enhancing firms' profitability (Omoruyi & Mafini, 2016).

Conclusions

The study established the relationship between supply chain management practices and manufacturing firms' performance. The study establishes the need for supply chain managers to align suppliers with the organization's values and strategies, as well as maintain bi-directional communication with them. Manufacturing firms that want to improve their customer satisfaction must ensure clear goals have been defined that relate to customer development and retention coupled with the inclusion of customer satisfaction in the employee performance measurement. The findings show that a higher degree of acceptance, application, and enhancement in SCM methods would directly increase the performance of manufacturing companies. Hence, the study recommends that manufacturing firms endeavor to maintain long term relationships with suppliers by way of maintaining open and bi-directional communications with the suppliers to ensure quick delivery of quality materials or components par for production, which enhances production flow and quick delivery of finished products to the consumers. Future studies can appraise the performance of manufacturing firms with other quantitative techniques such as regression and correlation analysis or a combination of both the quantitative approach and the qualitative approach. Future studies may consider other predictors other than strategic supply partnership, customer relationship management, level of information sharing, material flow management, lean production, and participative design/engineering in the design of SCM parameters.

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