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EXPLORING THE EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON MANUFACTURING FIRMS' PERFORMANCE IN DELTA STATE, NIGERIA

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ABSTRACT

This study considered supply chain management (SCM) practices and manufacturing firms' performance in Delta State, Nigeria. Specifically, it investigated the relationship between strategic purchasing practices, strategic supplier partnership, customer relationship, and Just-In-Time capability as dimensions of SCM on non-financial performance of manufacturing firms. The descriptive survey research design was employed. Data were elicited from the employees of the thirty (30) manufacturing firms registered under the Manufacturing Association of Nigeria (M.A.N.), Delta State Chapter as at 30th June 2021 and are also registered with the Corporate Affairs Commission (CAC). The population of the study is 150 employees comprising only the managers, heads of: production department, logistics department, customer service department, and accounting department and the total enumeration sampling technique were used. The instrument for data collection is the questionnaire. It was designed to elicit information concerning the subject matter. The data retrieved from the respondents were analyzed using descriptive statistics while Pearson Product Moment Correlation was used to test the hypotheses in order to determine the extent to which the independent variables were related to the dependent variable at an alpha level of 0.05. Results showed that there exists a significant relationship between strategic purchasing practices and manufacturing firms' performance; a statistically significant relationship exists between strategic supplier partnership and manufacturing firms' non-financial performance; there is a significant positive relationship between customer relationship and

manufacturing firms' performance; and a statistically significant relationship exists between Just-In-Time (JIT) capability of a manufacturing firm and its non-financial performance. The study concluded that a significant relationship exists between all the studied dimensions of SCM (strategic purchasing practices, strategic supplier partnership, customer relationship, and Just-In-Time capability) and the non-financial performance of manufacturing firms in Delta State, Nigeria, which implies that an increase in the practice of these SCM dimensions would lead to a corresponding increase in their non-financial performance. Based on the findings, the researcher recommended that manufacturing firms in Delta State no doubt, recognize the essence of valuable SCM practices in their operations. Based on this, the Manufacturing Association of Nigeria should continually encourage these firms to uphold these practices by using them as benchmark for raising the standard of manufacturing firms across Nigeria.

Keywords: Supply Chain, Management Practices, JIT, Strategic Supplier Partnership, Customer Relationship.

INTRODUCTION

In recent years, company competition has evolved from lowest-priced, highest-quality, or best-performing products to the capacity to respond rapidly to market needs and deliver a finished product on time. This desire for speed has companies competing with their whole supply chain (Karimi&Rafiee, 2014). To compete and increase supply chain excess in the global arena, SCM must be understood and practised. Today's enterprises realise that to thrive in this global competitive arena, they must embrace radical change, be creative, and engage more in SCM.

SCM has evolved from a competitive edge to a "ticket to ride" (Annan, Otchere & Amoako, 2013). It's a baseline assumption for any corporation intending to compete in the 21st century, hence SCM professions and jobs are now required business executives. Supply Chain Management involves businesses with higher and lower links presenting products and services to ultimate customers to produce value (Kumar & Kushwaha, 2018). Thus, marketing organisations can't ignore this concept.

Scholars have defined SCM and its practises. Obi, and Ehiedu, (2020); Onuorah, Ehiedu Victor, and Okoh, (2021); Odita and Ehiedu and Kifordu (2020); Odita, and Ehiedu, (2015); Mentzer, Flint, and Hult (as cited in Mutuerandu, 2014) defined SCM as "a group of three or more entities (organisational or individuals) directly involved in the upstream or downstream flow of products, SCM is the design, planning, execution, control, and monitoring of supply chain activities to create net value, construct a competitive infrastructure, leverage worldwide logistics, synchronise supply with demand, and measure global performance. These definitions imply that SCM practises are what a company does to operate its supply chain. A good SCM programme integrates manufacturing, purchasing, transportation, and distribution.

An efficient SCM approach is crucial for a firm's products and services to compete. According to Gunaseken and Ngai (quoted in Mwale, 2014), controlling and integrating essential information into SCM affects supply chain performance. For efficient supply chain integration, the firm must apply IT (Odita, 2020), which will give them a competitive advantage in quality, cost, flexibility, delivery, and profit. (Hussain&Nassar, 2010; Otchere, Annan &Anin, 2013) Still praising its essence, researchers (Hussain&Nassar, 2010; Otchere, Annan &Anin, 2013) asserted that SCM'

SCM has many parts. Lori and Heiser (2011) listed strategic supplier partnership, customer relationship, information sharing, and training as SCM aspects. Deshpande (2012) characterised these factors as long-term connections (business relationships maintained for mutual economic

gains), synchronised engineering (suppliers and customers involved in product creation), and strategic purchasing (art of tactically selecting a firm's suppliers). SCM methods include customer service, strategic supply and materials management, technological and operational challenges, according to Kutsikos and Sakas (2014). Banerjee and Mishra (2017) highlighted that SCM has nine dimensions or elements, including supply chain characteristics, strategic decision making, Just-In-Time (JIT) capabilities, customer relationship, supply chain integration, information value, product quality and development, and joint credibility.

All the above dimensions are interrelated and affect a firm's performance. Some scholars, including Kumar &Kushwaha (2018), have stated that SCM adoption and practise are all geared toward enhancing business performance. They also confirmed that SCM methods can boost competitive advantage and performance. The objective of SCM at a firm is to promote trust and collaboration among supply chain partners, hence enhancing inventory visibility and the velocity of inventory movement. Effective SCM practises are vital for building and sustaining product and service competition (Odita, Kifordu&Nwankwo, 2022; Wikipedia, 2018).

The manufacturing industry contributes greatly to Nigeria's economic development. It can boost exports and diversify the economy. This sector's GDP and employment have expanded over time. Despite Nigeria's importance and size, this sector is minor compared to industrialised nations (United Nations Industrial Development Organization [UNIDO], 2017).

Globalization and supply chain competition have encouraged manufacturers to find better manufacturing processes. Inflation, rising energy costs, and cheap imports have hindered industry productivity. SCM strategies will help manufacturing organisations obtain a competitive advantage, leading to total organisational performance, rather than competing with cheaper pricing. This study studied SCM methods and manufacturing firm performance in Delta State.

Statement of the Problem

SCM has proven popular in management and logistics since its introduction (Baharanchi, 2009). SCM interests academics, consultants, and business managers. Several companies think SCM drives competitive advantage. Despite increased attention, SCM literature offers little assistance (Cigolini, Cozzi&Perona, 2004). Much of the current theoretical/empirical research in SCM focuses on the downstream or upstream supply chain or certain SCM characteristics (For instance, Clark & Lee, 2000; Tan, 2002). These studies examine various SCM practises.

Few studies have been done in Nigeria on SCM strategy and corporate performance (i.e. from perspectives of strategic purchasing, strategic supplier partnership, customer relationship, and Just-In-Time [JIT] capabilities). This indicates a dearth of local research on SCM methods and how they might improve a company's performance. This study attempted to answer issues such as: what SCM methods manufacturing firms in Delta State utilise, and how do they affect firm performance?

Objectives of the Study

The broad objective of this study was to examine supply chain management practices and manufacturing firms' performance in Delta State, Nigeria. The specific objectives are to:

(i) find out the relationship between strategic purchasing practices as a dimension of supply chain management and manufacturing firms' performance;

(ii) examine the relationship between strategic supplier partnership as a dimension of supply chain management and manufacturing firms' performance;

(iii) determine the relationship between customer relationship as a dimension of supply chain management and manufacturing firms' performance; and to
(iv) determine the relationship between Just-In-Time (JIT) capability as a dimension of supply chain management and manufacturing firms' performance.

Hypotheses of the Study

To permit empirical investigation of the subject matter, the following null hypotheses have been raised:

Ho_1: There is no statistically significant relationship between strategic purchasing practices and manufacturing firms' performance.

Ho_2: There is no statistically significant relationship between strategic supplier partnership and manufacturing firms' performance.

Ho_3: There is no statistically significant relationship between customer relationship and manufacturing firms' performance.

Ho_4: There is no statistically significant relationship between Just-In-Time (JIT) capability and manufacturing firms' performance.

LITERATURE REVIEW

Supply Chain Management (SCM) and Dimensions of SCM Practices

The concept of supply chain management was introduced in the 1980s and it was developed into traditional logistics management according to Ehiedu Onuorah, and Owonye, (2022); Ehiedu and Okorie, (2022); Ehiedu, (2021); Ehiedu, (2020); Meteke, Ehiedu, Ndah, and Onuorah, (2022); Obaro, Onuorah, Evesi and Ehiedu, (2022). Earlier companies were considered as single entities with little connection with other companies that were considered as competitors. Therefore, the company focuses their decision making on internal processes and flows. This processes and flows were optimized without taking the other parts of the company into consideration. As a result of this, the cost of optimization was either pushed upstream or downstream therefore not affecting the total cost of production. SCM is focusing on both internal and external flow of processes and flows and like mentioned earlier, competition today is between supply chains rather than individual organizations (Mwale, 2014).

The Council of Supply Chain Management Professionals [CSCMP] (as cited by Salazar, 2012) defined SCM as "all the series of processes that involves planning and managing procurement sources, materials conversion, and all logistics management actions, including alliance with suppliers, middlemen, third-party service providers, and customers". SC Misthe design, planning, execution, control, and monitoring of supply chain activities with the goal of creating net value, constructing a competitive infrastructure, utilising worldwide logistics, coordinating supply with demand, and assessing global performance.

SCM practises are an organization's initiatives to promote supply chain management (Li, Ragu-Nathan, Ragu-Nathan & Rao, 2016). Best supply chain procedures affect the full chain, its parts, or critical processes (Cuthbertson & Piotrowicz, 2018). SCM improves competitive performance by integrating internal cross-functions and extending them to external partners (Kim, 2016). Type of industry, business size, supply chain position, type and length influence SCM methods (Li, Ragu-Nathan, Ragu-Nathan & Rao, 2016).

Latest evolution of SCM practises includes supplier partnership, outsourcing, continuous process flow, information technology sharing and purchasing, quality, and customer relations. SCM practises focus on core competencies, use inter-organizational systems such as electronic

data interchange (EDI), and elimination of excess inventory by postponing customization to the end of the supply chain (Zhao & Lee, 2019). Zhao & Lee (2019) employ supplier base reduction, long-term partnerships, communication, cross-functional teams, and supplier involvement to measure buyer–supplier interactions.

Firm Performance

Performance is a distinct most significant factor for measuring the success of a firm's operations (Almatrooshi, Kumar & Farouk, 2016). This is reflected in the firm's capability to effectually craft and enact tactics that actualize laid down goals and objectives of the firm. Tomal and Jones (2015) also viewed firm performance as a firm's actual outcome matched against the firms expected outcome. These definitions imply that performance measures how well a firm is doing in terms of achieving target objectives, satisfying customers, sales turnover, and so on. Because of the complex nature of measuring a firm's performance, several scholars such as Green, Zelbst, Meacham and Bhadauria (2012); Ehiedu, Onuorah, and Owonye, (2022); Ehiedu, Onuorah, and Mbagwu (2022), Ehiedu and Olannye, (2014); Ehiedu and Brume-Ezewu, (2022); Ehiedu, Odita, and Kifordu, (2020); Laban and Deya (2012) have postulated different phases of assessing performance. For instance, Green, *et al*., (2012) outlined two distinct aspects to include evaluating the operational performance and the business performance. While operational performance evaluates a firm's capacity to produce and distribute goods to customers, the business performance is concerned with the firms marketing activities and finance (Green *et al.,* 2012). In another development, Laban and Deya (2019) opined that some other scholars have come up with two other ways for measuring a firm's performance, which are the qualitative/subjective and the quantitative/objective methods.

THEORETICAL REVIEW

Resource-Based View (RBV)

The resource-based vision (RBV) identifies strategic resources that might give a company a competitive advantage. These resources might give the company a competitive advantage. The RBV focuses management on the firm's internal resources to identify those with competitive advantage potential (Wikipedia, 2018).

The resource-based perspective hypothesis sees the firm as a cognitive system with distinctive and context-dependent competencies. Hierarchical capabilities or routines involved in managing the firm's fundamental business operations assist create value (Owino, 2015). Competencies include developing specific skill, and organisations may become trapped into a trajectory that is difficult to shift in the short to medium term (Tushman & Anderson, 2006). Successful organisations generate idiosyncratic or unique talents on which to base their future competitiveness, which may be inferred and intangible.

To boost performance, a business must create a unique skill, according to this approach. Having an integrated supply chain can help.

Empirical Review

Many studies have been done on SCM in international business. Marhamati, Azizi, and Marhamati (2017) studied the impact of SCM on company performance using JIT at Iran's Shiraz Industrial Estate. A model using JIT as the focal component was outlined and data were collected from 110 experts (executives and operation managers) utilising a questionnaire. Armed with structural equation modelling and correlation, the study concluded that JIT strategy, which incorporates production, acquisition, sale, and information in JIT, is a successful

and sustainable strategy for directly strengthening supply chain capabilities and improving organisational performance.

Recently, Lee (2021) evaluated SCM strategy's effect on Korean SMEs' operational and financial performance. 300 Korean manufacturing SMEs that used SCM were sampled for the study. The variable relationships were examined using SEM. These revealed SCM techniques and organisational capabilities affected business performance. The SCM strategies impacted SME organisational competencies. Also, the mediating effect of organisational skills on the effect of SCM strategy on overall business performance was investigated. Organizational competence mediated the effect of SCM strategy on operational performance but not on financial performance. The study also found that using SCM techniques increases business performance and is linked to competences including R&D, technology commercialization, production, and marketing. Combining SCM methodologies and organisational competencies can boost SMEs' overall performance.

Alahmad (2021) Ehiedu, (2022), Ehiedu and Imoagwu (2022) studied SCM methods and supply chain performance in Saudi Arabian industry. A study was undertaken on 196 enterprises in the Kingdom of Saudi Arabia to gather information from supply chain managers and top management. In addition to interviews with supply chain managers, a theoretical model illustrating the relationship between SCM practises and supply chain performance was produced. This model was tested with multiple regression. The research found that SCM methods, such as supply chain planning, information exchange, customer relationship management, and supplier relationship management, improve supply chain performance. Also, supply chain performance is linked to financial performance (Ehiedu, 2022).

On the relationship between CRM as a dimension of SCM practise and a firm's performance, Vicente, Oltra-Badenes, Bayem, Ehiedu, Agbogun, and Onuorah, (2022), Agbogun, and Ehiedu, (2022), Ehiedu, and Obi, (2022), Ehiedu and Imoagwu (2022), Ehiedu V.C. (2022), Gil-Gomez, and 2,575 Spanish enterprises registered in the National Statistics Institute (NE) with the code CNAE-1102 and with a 2 million Euro annual invoice were sampled for the study. To determine the conditions for a result, fuzzy set qualitative comparative analysis was utilised. Study conditions included CRM culture (information sharing, long-term partnerships, and shared problem-solving), CRM technology use, process innovation, and product innovation. For the study, a 5-part questionnaire with a series of questions was used. The study found that a good CRM culture is vital to a firm's performance. CRM technology-based solutions and integral innovation initiatives were also proven to improve organisational effectiveness.

RESEARCH METHODS

This study employed the descriptive survey research design. The population of the study is all the employees of the thirty (30) manufacturing firms registered under the Manufacturing Association of Nigeria (M.A.N.), Delta State Chapter as at 30th June 2021 and are registered with the Corporate Affairs Commission (CAC) (see Appendix IV). These manufacturing firms are located in the major business locations in Delta State. These areas are: Warri, Ughelli, Ozoro, Sapele, Oghara, Agbor, Abraka, and Asaba since they are regions in Delta State where major manufacturing firms are sited. Due to the nature of the study, only the managers, heads of: production department, logistics department, customer service department, and accounting department were used for this study resulting in a population of 150 employees.

The research instrument used for this study was the questionnaire. Meanwhile, the response scales to the items in the sections of the questionnaire were structured according to the following: Items in Sections B, C, D and E were structured on a 5-point Likert scale: Strongly Agree – 5point, Agree - 4point, Neutral– 3point,Disagree – 2point, and Disagree - 1point.

The data collected from the respondents were analyzed using the descriptive and inferential statistics. T This was because of the descriptive nature of the data. However, the Pearson Product Moment Correlation was employed to test all the formulated hypotheses because it helped to determine the extent to which one independent variable was related to a dependent variable. The alpha level of significance for testing the hypotheses was set at $\alpha < 0.05$.

This study will apply the rule of thumb credited to ParvezAhammad (2016) as follows:

Size of Correlation	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (0.00 to -.30)	Negligible correlation

RESULTS AND DISCUSSIONS

A total of 150 copies of the questionnaire were distributed and 127 (85%) copies were returned without errors and found useful. The response rate of 85% is considered adequate for the study because the standard and acceptable response rate for most studies is 60%.

Table 1

Descriptive Statistics on Strategic Purchasing Practices of Manufacturing Firms

No.	Items on Strategic Purchasing Practices	SA	A	N	D	SD	$\bar{X}$	S.D.	Remarks
1	Strategic purchasing goals are well understood and visible through all the firms' departments.	13	34	25	36	19	2.89	1.2487	**Not Significant**
2	Purchasing strategies for common products are coordinated across all departments and executed jointly.	8	17	29	61	12	2.59	1.0416	**Not Significant**
3	Strategic purchasing activities are reported by all departments to top management.	14	40	22	38	13	3.03	1.2146	**Significant**
4	This firm's purchasing strategy is always based upon and supports overall corporate strategy.	26	11	35	24	31	2.82	1.4333	**Not Significant**
5	This firm employs risk assessment when sourcing for strategic sources of supply.	0	27	18	60	22	2.39	1.0091	**Not Significant**
6	Strategic purchasing objectives of this firm are based on total cost of ownership.	15	37	46	10	19	3.15	1.1958	**Significant**
7	This firm considers supplier ethics management in strategic purchasing operations.	28	28	31	17	23	3.17	1.3959	**Significant**
8	Reducing the supplier base is essential when this firm is making strategic purchasing decisions.	19	7	14	77	10	2.59	1.1909	**Not Significant**
9	Quality is very crucial during strategic purchases.	45	61	10	11	0	4.10	.8804	**Significant**
10	Supplier reliability is always considered when making decisions regarding strategic purchases.	53	36	22	0	16	3.87	1.3115	**Significant**

Key: Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD)
NB: The criterion mean for accepting an item as significant is 3.00

Table 1 reveals information concerning the strategic purchasing practices of the manufacturing firms. Out of the 10 items, only five items (3, 6, 7, 9, and 10) are considered significant since the mean scores of the respondents' responses on the statements raised on strategic purchasing practices are above 3.00 (the criterion mean). The respondents were negative towards the other five items (1, 2, 4, 5, and 8) since the mean scores did not exceed the criterion mean. This analysis therefore means that the manufacturing firms under study practice strategic purchasing at a moderate level.

Table 2
Descriptive Statistics on Strategic Supplier Partnership of Manufacturing Firms

No.	Items on Strategic Supplier Partnership	SA	A	N	D	SD	$\bar{X}$	S.D.	Remarks
1	When partnering with key suppliers, this firm considers trust completely.	33	18	24	25	27	3.04	1.4982	**Significant**
2	This firm has learnt that its key suppliers will not sacrifice its interest to profit.	15	20	48	8	36	2.76	1.3361	**Not Significant**
3	The relationship this firm has with its key suppliers is essentially evergreen.	24	31	19	32	21	3.04	1.3882	**Significant**
4	This firm expects its relationship with its key suppliers to last for a long time.	29	35	10	20	33	3.06	1.5497	**Significant**
5	The relationship that this firm has with its key suppliers is something it is very committed to.	41	56	17	1	12	3.89	1.1563	**Significant**
6	The relationship that this firm has with its key suppliers deserves maximum effort to maintain.	16	24	52	29	6	3.12	1.0512	**Significant**
7	This firm conducts environmental audits on its key suppliers before partnership.	11	0	73	15	28	2.61	1.0987	**Not Significant**
8	This firm's key suppliers must possess international standard certification (e.g. ISO) before partnering.	44	25	21	37	0	3.60	1.2361	**Significant**

Information contained in Table 2 shows the mean scores of the respondents' opinions on the strategic supplier partnership of their firms. Out of the 8 items asked on the subject matter, six items (1, 3, 4, 5, 6, and 8) are considered significant since the mean scores of the respondents' responses on the statements raised are above 3.00 (the criterion mean). However, the mean scores of items 2 and 7 indicates that the respondents did not consider the statements as true since the mean scores did not exceed the criterion mean. This analysis therefore proves that the manufacturing firms have a good standing with regards to their strategic supplier partnership.

Table 3
Descriptive Statistics on Customer Relationship Practices of Manufacturing Firms

No.	Statements on Customer Relationship Practices	SA	A	N	D	SD	$\bar{X}$	S.D.	Remarks
1	This firm treats all its customers with respect.	29	83	0	41	1	3.98	0.8636	**Significant**
2	Customers' experiences with this firm always turns out better than the firm's expectations.	40	13	18	35	21	3.09	1.4877	**Significant**
3	This firm does not treat any customer less importantly.	52	46	9	7	13	3.92	1.2762	**Significant**
4	The relationship this firm builds with its clients always turn out long-lasting.	20	32	4	46	25	2.81	1.4183	**Not Significant**

5	The good relationship that exists between this firm and its customers make it get recommendations.	34	61	9	23	0	3.83	1.0217	**Significant**
6	This firm-client relationship is strengthened when clients' problems are solved efficiently.	25	36	27	0	39	3.06	1.5210	**Significant**
7	This firm provides good after-purchase services to its customers and this sustains its relationship.	21	59	16	27	4	3.52	1.0973	**Significant**
8	This firm rewards all customers' loyalty.	43	0	44	12	28	3.14	1.5261	**Significant**
9	This firm always tries to get to know customers' preferences, questions and suggestions.	67	30	11	10	9	4.07	1.2547	**Significant**
10	This firm offers personalized customer service.	17	39	34	15	22	3.11	1.2862	**Significant**

From the remarks of all the statements raised on customer relationship practices of the sampled manufacturing firms as displayed in Table 3, almost all items (1, 2, 3, 5, 6, 7, 8, 9, and 10) are significant except for item 4, which the respondents did not consider a valid statement as its mean score is less than the criterion mean of 3.00. This analysis is clear proof that the extent to which the firms practice good customer relationship is to a high extent.

Table 4

Descriptive Statistics on Just-In-Time Capability of Manufacturing Firms

No.	StatementsonJust-In-Time Capability	SA	A	N	D	SD	$\bar{X}$	S.D.	Remarks
1	This firm adopts integrated product design where people at all levels are involved with the design process.	5	20	23	46	33	2.35	1.1445	**Not Significant**
2	Integrated supplier network is part of this firm's JIT capability.	0	27	19	58	23	2.39	1.0170	**Not Significant**
3	This firm makes use of level schedules during production process to ensure all materials are even distributed.	41	35	8	13	30	3.35	1.5855	**Significant**
4	This firm employs market-paced final assembly at a very fast rate.	28	32	13	37	17	3.13	1.3993	**Significant**
5	This firm adopts line balancing, where work is redesigned to make work cycle times in all stations equal.	15	18	39	24	31	2.70	1.3052	**Not Significant**
6	This firm uses the Kanban system of production control where a card system is used to signal the need to deliver, or to produce.	0	0	6	79	42	1.72	.5477	**Not Significant**
7	This firm uses action procedures to reduce setup times during production processes.	16	34	12	40	25	2.81	1.3612	**Not Significant**
8	As part of its JIT capability, this firm carries out preventive maintenance programs.	27	50	10	17	23	3.32	1.4192	**Significant**
9	Fast inventory transportation systems are used in this firm to reduce lead times.	31	25	10	21	40	2.89	1.6146	**Not Significant**
10	To make labour more able to float from one station to another, this firm makes workers' skills flexible.	49	0	19	28	31	3.06	1.6607	**Significant**

Table 4 shows the descriptive statistical results on the information retrieved from the respondents on the Just-In-Time capability of their firm. As depicted in the table, only 4 items (3, 4, 8, and 10) are considered significant, while majority of the statements (1, 2, 5, 6, 7, and

9) are not significant because their mean scores are lesser than the criterion mean. This goes to show that the Just-In-Time capability of the manufacturing firms under study is poor, as revealed by the analysis.

Table 5
Descriptive Statistics on Manufacturing Firms' Non-Financial Performance

S/N	NON-FINANCIAL PERFORMANCE MEASURES	VH	H	M	L	VL	$\bar{X}$	S.D.	Remarks
	Quality Control-based Measures								
QC1	Percent of scrap	10	14	22	45	36	2.35	1.2240	**Low**
QC2	Percent of defects rate	4	29	18	25	51	2.29	1.2917	**Low**
QC3	Percent of returned orders	0	35	9	77	6	2.57	.9472	**Low**
QC4	Rework	0	0	36	48	43	1.94	.7899	**Low**
	Employee-Based Measures								
EB1	Absenteeism	32	27	15	53	0	3.30	1.2492	**High**
EB2	Employee wastage	0	20	28	39	40	2.20	1.0415	**Low**
EB3	Lateness	6	64	19	24	14	3.19	1.1390	**High**
	Internal-Efficiency Measures								
IE1	Inventory expenses	16	57	23	0	31	3.21	1.3780	**High**
IE2	Production time	0	25	74	0	28	2.76	1.0135	**Low**
IE3	Manufacturing cycle inefficiency	42	0	14	11	60	2.63	1.7853	**Low**
IE4	Product development time	0	18	60	27	22	2.58	.9381	**Low**
	Customer-Based Measures								
CB1	No. of warranty claims	0	13	10	35	69	1.74	.9857	**Low**
CB2	No of complaints from customers	26	17	38	0	46	2.82	1.5452	**Low**
CB3	Customer dissatisfaction	0	0	19	83	25	1.95	.5890	**Low**
CB4	Customers' delivery time	0	0	40	22	65	1.80	.8912	**Low**

Table 5 contains information regarding the performance rating of the sampled manufacturing firms. From the mean scores, it is obvious that the firms has good non-financial performance rating for the various measures highlighted, except for employee-based measures where they had high absenteeism and lateness for the six-month period.

Testing of the Hypotheses

Table 6
Strategic Purchasing Practices and Manufacturing Firms' Performance

		Strategic Purchasing Practices	Non-Financial Performance
Strategic Purchasing Practices	Pearson Correlation (r)	1	.781**
	Sig. (2-tailed)		.000
	N	127	127
Non-Financial Performance	Pearson Correlation	.781**	1
	Sig. (2-tailed)	.000	
	N	127	127

*. Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 1% level (2- tailed).

Table 6 reveals the correlation between strategic purchasing practices and manufacturing firms' non-financial performance. The result shows that the correlation coefficient, *r*, is .781 while the significant level (α) is .000 which is lesser than the alpha level (α) of.05. This is an indication that a high positive correlation exist between strategic purchasing practices and non-financial performance of manufacturing firms in Delta State.Therefore, the null hypothesis stating that

there is no significant relationship between strategic purchasing practices and manufacturing firms' performanceis rejected. This implies that, an increase or decrease in the strategic purchasing practices of manufacturing firms may lead to a corresponding increase or decrease in their non-financial performance.

Table 7

Strategic Supplier Partnership and Manufacturing Firms' Performance

		Strategic Supplier Partnership	Non-Financial Performance
Strategic Supplier Partnership	Pearson Correlation (r)	1	.688**
	Sig. (2-tailed)		.000
	N	127	127
Non-Financial Performance	Pearson Correlation	.688**	1
	Sig. (2-tailed)	.000	
	N	127	127

*. Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 1% level (2 –tailed)

Table 7 displays the correlation result between strategic supplier partnership and manufacturing firms' non-financial performance. The result indicates that the correlation coefficient, *r*, is .688 while the significant level (α) is .000 which is lesser than the alpha level (α) of.05. Therefore, the null hypothesis stating that there is no significant relationship between strategic supplier partnership and manufacturing firms' performance is rejected. This implies that, an increase or decrease in the strategic supplier partnership of manufacturing firms may lead to a corresponding increase or decrease in their non-financial performance.

Table 8

Customer Relationship and Manufacturing Firms' Performance

		Customer Relationship	Non-Financial Performance
Customer Relationship	Pearson Correlation (r)	1	.965**
	Sig. (2-tailed)		.000
	N	127	127
Non-Financial Performance	Pearson Correlation	.965**	1
	Sig. (2-tailed)	.000	
	N	127	127

*. Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 1% level (2-tailed)

Table 8 shows the correlation analysis between customer relationship and manufacturing firms' non-financial performance. The result indicates that the correlation coefficient, *r*, is .965 while the significant level (α) is .000 which is lesser than the alpha level (α) of.05. Therefore, the null hypothesis stating that there is no significant relationship between customer relationship and manufacturing firms' performance is rejected. This implies that, an increase or decrease in customer relationship may lead to a corresponding increase or decrease in the non-financial performance of manufacturing firms.

Table 9

Just-In-Time (JIT) Capability and Manufacturing Firms' Performance

		Just-In-Time Capability	(JIT) Non-Financial Performance
Just-In-Time (JIT) Capability	Pearson Correlation (r)	1	.893**
	Sig. (2-tailed)		.000
	N	127	127
Non-Financial Performance	Pearson Correlation	.893**	1
	Sig. (2-tailed)	.000	

N	127	127

*. Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 1% level (2-tailed)

Table 9 reveals the correlation between Just-In-Time capability of manufacturing firms and their non-financial performance. The result shows that the correlation coefficient, *r*, is .893 while the significant level (α) is .000 which is lesser than the alpha level (α) of.05. Therefore, the null hypothesis stating that there is no statistically significant relationship between Just-In-Time (JIT) capability and manufacturing firms' performance is rejected. This implies that, an increase or decrease in Just-In-Time capability of manufacturing firms may lead to a corresponding increase or decrease in their non-financial performance.

Discussion of the Findings

This section discusses the findings of the study. The findings are been discussed drawing inferences from authors' views in the review of related literature and relating them to the researcher's findings from the study.

Strategic Purchasing Practices and Manufacturing Firms' Performance

This study found a substantial association between strategic purchasing methods and manufacturing businesses' performance. An increase or reduction in strategic purchasing practises may lead to an increase or decrease in non-financial performance. This finding agrees with Tariganand Siagian's (2021) that a company's purchasing strategy affects its operational performance. It also confirms Fantazy and Mukerji's (2021) finding that strategic purchasing and supplychain capabilities have moderate effects on a company's non-financial performance.

Strategic Supplier Partnership and Manufacturing Firms' Performance

Strategic supplier alliance is statistically linked to manufacturing enterprises' non-financial performance. This means that strategic supplier partnerships will improve a manufacturing firm's non-financial performance. This study verifies that of Mutuerandu (2014), who discovered that a high level of strategic supply partnership among manufacturing firms lowers operational costs, reduces lead time, improves customer service levels, and causes fast market response. This finding is in line with Zhao and Lee's (2019) argument that strategic supplier alliances stress direct, long-term relationship and foster mutual planning and issue resolution, which boosts a company's non-financial success.

Customer Relationship and Manufacturing Firms' Performance

Testing hypothesis three found a substantial positive association between customer relationship and manufacturing firms' performance, meaning a firm's non-financial performance will be favourably benefited by a successful customer relationship approach. This research confirms Alahmad's (2021) conclusion that customer relationship management positively affects supply chain performance, which boosts company performance. This results aligns with Vicente, Oltra-Badenes, Gil-Gomez, and Fernandez (2021), who found that a good CRM culture is vital to firm performance.

Just-in-Time Capability and Manufacturing Firms' Performance

Testing hypothesis four indicated a statistically significant association between Just-In-Time (JIT) competence and manufacturing businesses' non-financial success, showing that JIT expertise boosts non-financial performance. This conclusion confirms Marhamati, Azizi, and Marhamati (2017) that JIT strategy, which involves production, acquisition, sale, and information in JIT, is an effective and sustainable technique for directly boosting supply chain

capabilities and organisational performance. Yazan (2017) found that JIT systems improve manufacturing organisations' competitiveness and operational excellence.

CONCLUSION AND RECOMMENDATIONS

Supply chain management (SCM) is essential for enhancing a manufacturing company's non-financial performance. According to the survey, industrial businesses utilise moderate strategic purchasing. These organisations have a good reputation for strategic supplier partnerships and customer relations. Their JIT is weak. From the tested hypotheses, it can be concluded that a statistically significant relationship exists between all the studied SCM dimensions (strategic purchasing, strategic supplier partnership, customer relationship, and Just-In-Time capability) and the non-financial performance of manufacturing firms in Delta State, Nigeria. This means that an increase in the practise of these SCM dimensions would lead to a corresponding increase in their non-financial performance. Following the study's conclusions, I recommend:

(1) Manufacturing firms in Delta State no doubt, recognize the essence of valuable SCM practices in their operations. Based on this, the Manufacturing Association of Nigeria should continually encourage these firms to uphold these practices by using them as benchmark for raising the standard of manufacturing firms across Nigeria.

(2) Manufacturing firms should give adequate attention to improving their Just-in-Time competencies by setting up unit committees in their firms to see that this objective is achieved.

(3) Since a positive relationship exists between SCM practices and the performance of manufacturing firms, the management of these firms should ensure that this relationship is not broken by introducing more SCM concepts and policies in their firms.

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