



## SUPPLY CHAIN MANAGEMENT AND BUSINESS PERFORMANCE OF SHIPPING FIRMS IN PORT HARCOURT.

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**ABSTRACT:** *The study examined the relationship between supply chain management and business performance of shipping firms in Port Harcourt. The study adopted quantitative research design using a correlational method of investigation. The population consists of 16 shipping firms in Port Harcourt. The study adopted census sampling and studied the entire 16 firms with focus on managers. The reliability of the instrument was determined using Cronbach's alpha test with the aid of Statistical Package for Social Sciences (SPSS) version 23 and it stood at 0.88 higher than the benchmark of 0.7. The data collected for this study were analyzed through inferential statistics. The Spearman Rank Correlation Technique was employed to test the various hypotheses formulated through the aid of Statistical Package for Social Sciences (SPSS). The results revealed that supply chain management is significantly and positively related with business performance of shipping firms in Port Harcourt. Based on the findings, it was concluded that supply chain management with its dimension of supply chain integration and reverse logistics will improve business performance of shipping firms in Port Harcourt on the basis of the results obtained from the analysis. The study recommends that shipping firms should adopt reverse logistics as this would ensure customer after-sale satisfaction which in turn results in improvement in business performance, and also, shipping firms should integrate their supplies as this would enable them to improve business performance.*

**KEYWORDS:** Supply chain management; Reverse Logistics; Supply chain integration; and Business Performance.



## INTRODUCTION

Due to its operational effectiveness, supply chain management has attracted significant interest from a wide range of academics and practitioners over the past 20 years (Sundram et al., 2011).

Despite its success, few firms find it perplexing to grasp the banes with the supply chain (Cook et al., 2011). For the networks to perform better in terms of environmental issues, there must be strong downstream and upstream inclusion. There are appropriate dynamics that influence supply chain procedures. These dynamics include the length, kind, position, firm size, and industry of the supply chain. For the firm's services and goods to develop and maintain their competitive advantage, an efficient supply chain must be formed. Furthermore, supply chain management can be a useful instrument for a firm to improve its competitive advantage. SCM cut across the whole supply chain from suppliers, manufacturing companies, consumers, and also reverse logistics in a closed-loop supply chain (Abdallah & Al-Ghwayeen, 2019).

Supply chain management put to consideration all aspects of the supply chain, involving product design, materials sourcing and selection, production processes, and final product delivery to customers, as well as product end-of-life management (Malik et al., 2016). Karabiyik (2009) stated that supply chain management is the coordination of operations that start with the purchase of raw materials, continue through their transformation into semi-finished or finished commodities, and culminate into the delivery of those goods to their final users. Companies have shown keen interest to integrate their supply chain processes in order to address organizational performance issues (Khan et al., 2021). The prevalence of existing literature suggests a positive effect on both the organizational performance (Wibowo et al., 2018) and supply chain management practices (Gandhi & Vasudevan, 2019). Other studies suggest that managers face major challenges in integrating supply chain processes (Kirchoff et al., 2016).

Supply chain management processes include reverse logistics, supply chain integration and inventory management. Shipping firms must embrace value-added activities in the supply chain in order to maximize profit, earn benefits and a competitive advantage in integrating supply chain processes, which will in turn improve business performance (Anuradha & Srivastava, 2018). Business performance is the improvement in a firm's profitability and market share. Every organization, whether big or small, wants to improve its performances, profitability, sales growth and market share. Didier (2002) submitted that performance consists of "achieving the goals that were given to you in convergence of enterprise orientations." In his opinion, performance is not a mere finding of an outcome; rather, it is the result of a comparison between the outcome and the objective.

Business performance is the measurement of the number of sales that an employee makes for a business (Cuevas, Donaldson & Lemmens, 2004). Business performance looks at the amount of sales made versus the amount of customers an employee comes in contact with (Cuevas, Donaldson & Lemmens, 2004). The business performance of telecom firms depends on the efficiency of electronic marketing techniques initiated.



A recent study by Amor and Ghorbel (2018) reveals that Nigeria's maritime sector tops the lists of countries that outsource their products and supply process, thereby increasing her vulnerability to disruption risks. The internal operations, external environmental factors and some elements within the maritime supply chain increase disruption. Natural events, political crises and global financial crises are examples of external environmental drivers of supply chain disruption which have resulted in poor business performance (Paul et al., 2055). Extant literature has revealed that supply chain management stands as the focal point for the increase of business performance of shipping firms. Kotni (2016) stated that increasing sales performance requires firms to review their marketing initiatives and improve on it. It is on this premise that this study was designed to investigate the relationship between supply chain management and business performance of shipping firms in Port Harcourt.

### **Aim and Objectives of the Study**

The study examined the relationship between supply chain management and business performance of shipping firms in Port Harcourt. The objectives of this study include:

- i. To investigate the relationship between reverse logistics and business performance of shipping firms in Port Harcourt.
- ii. To ascertain the relationship between supply chain integration and business performance of shipping firms in Port Harcourt.

### **Research Questions**

- i. To what extent does reverse logistics relate to business performance of shipping firms in Port Harcourt?
- ii. To what extent does supply chain integration relate to business performance of shipping firms in Port Harcourt?

### **Research Hypotheses**

**H<sub>01</sub>:** There is no significant relationship between reverse logistics and profitability growth of shipping firms in Port Harcourt.

**H<sub>02</sub>:** There is no significant relationship between supply chain integration and business performance of shipping firms in Port Harcourt.



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## REVIEW OF RELATED LITERATURE

### Concept of Supply chain management

Supply chain management is a term that describes the entire production process, from upstream to downstream, where suppliers, manufacturers, distributors, retail outlets, and lastly the customers or users are the parts of the process (Nugraha & Hakimah, 2019). Supply chain management puts to consideration all aspects of the supply chain, involving product design, materials sourcing and selection, production processes, and final product delivery to customers, as well as product end-of-life management (Malik et al., 2016). Karabiyik (2009) defines supply chain management as the coordination of operations that start with the purchase of raw materials, continue through their transformation into semi-finished or finished commodities, and culminate into the delivery of those goods to their final users. To be successful, businesses must carefully manage their operations by organizing, scheduling, and controlling supply chain activities (Bozarth & Handfield, 2016).

### Reverse Logistics

Reverse logistics was described by Mafini and Loury-Okoumba (2018) to mean the movement of products from the consumer to the manufacturing firms. Reverse logistics aims to recycle, reuse, repair and carefully eliminate products and materials waste (Rasit et al., 2019). Gandhi and Vasudevan (2019) opined that reverse logistics is a key contributor to ensuring customer after-sale satisfaction since its implementation leads to better optimisation of aftermarket processes such as recycling and proper waste disposal. There are many faces to reverse logistics. It can include consumer income, returns on the market, returns on assets, returns on damages, avoidance of returns, and many others. Good management of reverse logistics helps to make customers happy by reducing their risk and ensuring the company remains long-term with them (Younis, et al., 2019).

### Supply Chain Integration

The concept of supply chain integration has recently gained widespread attention in supply chain literature (Zhang & Huo, 2013). Firms are now under increased pressure to integrate their supply chains to become more competitive in order to meet the challenges of current business needs (Danese & Romano, 2011). Flynn et al. (2010) defined supply chain integration as the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organisation processes. The goal is to achieve effective and efficient flow of products and services, information, money and decisions, to provide a maximum value to customers at low cost and high speed.

Supply chain integration can be seen at two broad levels: external integration and internal company integration. While external integration examines integration that occurs between the firm and its suppliers and customers, internal company integration is associated with the integration of the production and supporting functions within the organisation (Schoenherr & Swink, 2012). External integration refers to the integration of the company with its external environment including customers and suppliers. Internal integration refers to breaking down the functional barriers and working with the different divisions within the organisation as a single unit. The organisation functional divisions are viewed as an integrated process rather than functional silos based on traditional departmentalization and specialisation (Flynn et al.,



2010). Wright (2016) referred to internal integration as the competency of linking internally performed work into a seamless process to support customer's requirements.

### **Concept of Business Performance**

Business performance is the measurement of the number of sales that an employee makes for a business (Cuevas, Donaldson & Lemmens, 2004). Business performance looks at the amount of sales made versus the amount of customers an employee comes in contact with (Cuevas, Donaldson & Lemmens, 2004). Previous research has shown that different supply chain management practices may impair an organization's capacity for competitiveness. The competitiveness and overall success of a firm are impacted by supply chain management practices. Manufacturing companies with strong supply chain management will undoubtedly affect their competitive advantage in the market. Less delivery time, more dependability, higher-quality products, and/or lower pricing are all attributes that enterprises with a competitive advantage have over their rivals (Lechner et al., 2018). These competencies will lead to an improvement in organizational performance. According to Li et al. (2006), an organization's competitive advantage may also influence relationship efficacy, loyalty, customer happiness, and business performance.

### **Theoretical Review**

The study was underpinned by supply chain operations theory. The supply chain operations theory was introduced by the Supply Chain Council (SCC), an independent, not-for-profit, global corporation interested in applying and advancing the state-of-the-art in supply-chain management systems and practices. The Supply Chain Operations Reference model (SCOR) is a management theory used as a tool to address, improve, and communicate supply chain management decisions within a company or supply chain environment and with suppliers and customers of a company (Tu et al., 2004). The model helps to explain the processes along the entire supply chain and provides a basis for how to improve those processes by measuring specific supply chain performance through defined metrics. The score model advocates for a lean supply chain where waste has been eliminated and the metrics in the SCOR model entail measuring supply chain plans which include sale and operations planning; source, which includes upstream flow from supplier side; make, whose main concern is at the transformation stage where there is manufacturing, assembly and kitting; deliver, which entails transportation optimization; and lastly, return, where the measures entails shipping mistakes and product quality (Tu et al., 2004).

### **Empirical Review**

According to Siddikur et al. (2021), the purpose of the research was to determine the effect of supply chain management on organizational performance in the manufacturing companies of Bangladesh. For this study, data from a total of 211 respondents (response rate 84.4 percent), comprising supply chain supervisors, managers and directors, from the Bangladeshi manufacturing industry, were collected. Using two independent variables, including green innovation and green process, we were able to assess supply chain management, while organizational performance was evaluated using two dependent variables, including environmental performance and financial performance. The SPSS (Statistical Package for Social Sciences) 26.0 program was used to gather demographic information of the respondents, while Smart PLS (version 3.3.3) was utilized to test the research hypotheses.





The results show that two determinants of supply chain management (i.e., green process and green innovation) positively influence both the environmental and financial performances of an organization. The findings also show that the green process has a greater impact on an organization's financial performance than green innovation.

According to Bag et al. (2021), the research study investigated supply chain management (SCM) elements as part of a complete system. It aims to understand the special properties of the SCM system under the moderating effects of product complexity and purchasing structure. The instrument was scientifically developed for gathering survey responses using Dillman's (2007) complete design test methods. The conceptual model was eventually tested based on survey data collected from 250 automotive components and allied manufacturers in the emerging economy of South Africa. The results indicate that SCM technological dimensions (AI-based) positively influence SCM strategy. Further, SCM strategy was found to positively influence SCM process. The SCM processes have significant effects on environmental performance, social performance and financial performance. The product complexity has a significant moderation effect on the paths SCM strategy and SCM process.

## METHODOLOGY

The study adopted quantitative research design using a correlational method of investigation. The population consists of 16 shipping firms in Port Harcourt obtained from <https://www.finelib.com/cities/port-harcourt/transportation/shipping-companies>. The study adopted census sampling and studied the entire 16 firms with focus on managers. Four managers per firm were sampled; a total of 64 managers were sampled. The reliability of the instrument was determined using Cronbach's alpha test with the aid of Statistical Package for Social Sciences (SPSS) version 23 and it stood at 0.88 higher than the benchmark of 0.7. The data collected for this study were analyzed through descriptive and inferential statistics. The Pearson Product Moment Correlation Technique was employed to test the various hypotheses formulated through the aid of Statistical Package for Social Sciences (SPSS) version 23.0.

## DATA ANALYSIS AND RESULTS

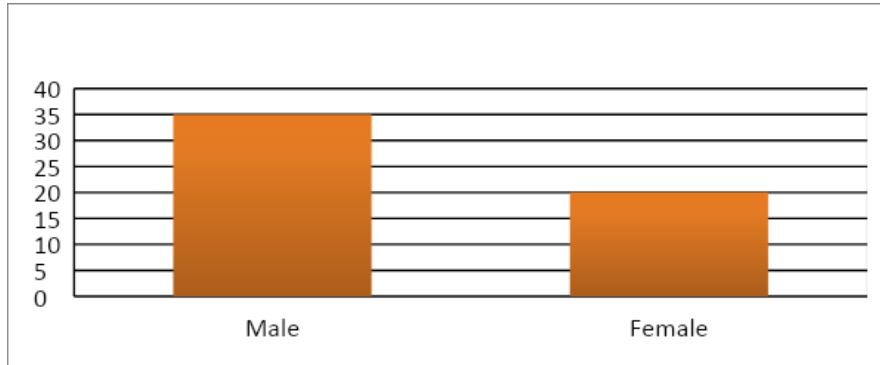
### Questionnaire Distribution and Retrieval

Issued	64
Returned	60
Useful	55
Not useful	5

Source: *Survey Data, 2024.*



The table above shows the questionnaire distribution and retrieval. The researcher issued 64 copies of the questionnaire and retrieved 60; 55 were useful and 5 were not useful. This represents an 80% response rate and it was considered significant for the study.



**Source:** *Survey Data 2024.*

The above chart shows the gender of respondents as a means of ensuring that both males and females are represented in the study: 35 (64%) of the respondents are male and 20 (36%) are female. This shows that the majority of the respondents are males.

### Bivariate Analysis

Here, efforts were made to test the hypotheses formulated for this study.

#### Test of Hypothesis One (1)

**H<sub>01</sub>:** There is no significant relationship between reverse logistics and business performance of Shipping firms in Port Harcourt.

#### Correlations

		reverse logistics	business performance
Spearman's rho	reverse logistics	Correlation Coefficient	1.000
		Sig. (2-tailed)	.798*
		N	.023
Spearman's rho	business performance	Correlation Coefficient	1.000
		Sig. (2-tailed)	.798*
		N	.023
		N	55
		N	55

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

**Source:** *SPSS output, 2024.*

The table above presents the result of correlation analysis between reverse logistics and business performance of shipping firms in Port Harcourt. The result indicates that there is a strong correlation between reverse logistics and business performance ( $\rho = .798^*$ ) and this correlation is significant at 0.05 level, as indicated by the symbol \*. Based on this result, the null hypothesis ( $H_{01}$ ) is rejected and the alternate hypothesis is accepted. This means that there is a significant relationship between reverse logistics and business performance.



## Test of Hypothesis Two (2)

**H<sub>02</sub>:** There is no significant relationship between supply chain integration and business performance of Shipping firms in Port Harcourt.

### Correlations

		supply chain integration	business performance
Spearman's rho	supply chain integration	Correlation Coefficient	1.000
		Sig. (2-tailed)	.838*
		N	.016
business performance		Correlation Coefficient	.838*
		Sig. (2-tailed)	1.000
		N	.016
		N	55
		N	55

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

**Source:** SPSS output, 2024

The table above presents the result of correlation analysis between supply chain integration and business performance of shipping firms in Port Harcourt. The result indicates that there is a strong correlation between supply chain integration and business performance ( $\rho = .838^*$ ) and this correlation is significant at 0.05 level, as indicated by the symbol \*. Based on this result, the null hypothesis ( $H_{02}$ ) is rejected and the alternate hypothesis is accepted. This means that there is a significant relationship between supply chain integration and business performance of shipping firms in Port Harcourt.

## SUMMARY OF FINDINGS

From the analysis, the following findings were discovered:

- i. There is a significant relationship between reverse logistics and business performance of shipping firms in Port Harcourt.
- ii. There is a significant relationship between supply chain integration and business performance of shipping firms in Port Harcourt.

## DISCUSSION OF FINDINGS

The results of this study show that the dimensions of supply chain management are significantly and positively related to business performance of shipping firms in Port Harcourt. The results show that reverse logistics showed a very strong and significant relationship with business performance. This simply means that an increase in reverse logistics will lead to an increase in business performance. This finding is also supported by the study conducted by (Al-Sheyadi et al., 2019). Additionally, green techniques have enhanced financial performance since risks and liabilities are reduced (Tseng, 2019). The





findings also showed that supply chain integration has a very strong relationship with business performance. This simply means that the adoption of supply chain integration will lead to an increase in business performance of shipping firms.

## CONCLUSION

From the foregoing analysis, it is evident that supply chain management is significantly and positively related to business performance of shipping firms in Port Harcourt. The empirical results of this study confirmed this as a positive and significant relationship was found between supply chain integration and business performance of shipping firms, and between reverse logistics and business performance of shipping firms. Based on these findings, it was concluded that supply chain management with its dimension of supply chain integration and reverse logistics will improve business performance of shipping firms in Port Harcourt on the basis of the results obtained from the analysis.

## RECOMMENDATIONS

In line with the objectives of the study, the study recommends as follows:

- i. Shipping firms should adopt reverse logistics as this would ensure customer after-sale satisfaction which would in turn result in an improvement in business performance.
- ii. Also, shipping firms should integrate their supplies as this would enable them to improve business performance.

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