IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 25, Issue 6, Series 11 (June. 2020) 46-52
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Effect of Warehousing Operation on Inbound Logistics Practices of Consumer Goods Industries Performce in South Western Nigeria

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ABSTRACT
Warehousing operations as one of the logistics practices is essential in the physical distribution of materials in consumer goods industry in order to satisfy customer's needs. In today's competitive market environment companies are continuously forced to improve their warehousing operations in order to improve on their performance and satisfy the objectives of their operations. This paper examines the effect of warehousing operations on inbound logistics practices of Consumer Goods Industries performance in South Western Nigeria. The population of the study comprised of Managers, Logistics Officers, Haulage Drivers, Suppliers and Freight Forwarders of the selected Consumer Goods Industries. 150 respondents were randomly selected from the population of the study. Data was analyzed using both descriptive and inferential statistics. The findings show that warehouse operations increase the efficient allocation of resources, improve delivery of goods and overall improve performance.

KEYWORD: Warehousing Operation, Performance, Inbound Logistics Practices, Consumer Goods Industry

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Date of Submission: 10-06-2020 Date of Acceptance: 28-06-2020

I. INTRODUCTION

The liberalization of markets across the globe has led to an increase in competition especially among the manufactured goods and services (Shafie, 2004; Verstege and Amstel, 1991). The competitiveness of consumer goods companies in the future will largely depend on how they respond to the needs of the customers at the end of a supply chain better than their competitors (Hogstron and Grigorjev, 2003). A warehouse can thus be defined as a facility in the supply chain to consolidate products to reduce transportation cost, achieve economies of scale in manufacturing or in purchasing (Hackman, 2006) or provide value-added processes and shorten response time (Gong and Koster, 2008). Warehousing has also been recognized as one of the main operations where companies can provide tailored services for their customers and gain competitive advantage. Warehouses have been going through various challenges such as – supply chains are becoming more integrated and shorter, globalized operation, customers are more demanding and technology changes are occurring rapidly. In order to cope up with these challenges, organizations are adopting innovative approaches such as Warehouse Management System. Within supply chain, warehousing is an important activity in the distribution of materials, from raw materials and work in progress through to finished goods. Warehouse exists primarily to facilitate the movement of goods to the end user. There are exceptions such as strategic stock-holding, but general commercial applications, effective movement of goods to the customer is key.

Operation of transportation determines the efficiency of moving products. The progress in techniques and management principles improves the moving load, delivery speed, service quality, operation costs, the usage of facilities and energy saving. Transportation takes a crucial part in the manipulation of logistics. Reviewing the current condition, a strong system needs a clear frame of logistics and a proper transport implements and techniques to link the producing procedures.

Logistics Management is thus part of the supply chain that includes the process, planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption (in-bound, outbound, internal and external flows) for the purpose of conforming to customer requirements cost effectively and ensure that current and future profitability is maximized. (CSCMP, 2006). In the modern world, consumer goods sector is regarded as a basis for determining a nation's economic efficiency (Amakom, 2012), the significant consumer goods firms play in economic development process has been well documented and in ensuring this, the impact of efficient warehousing and inbound logistics practices cannot be underscored.

Warehousing plays a vital role in enhancing customer satisfaction among the consumer goods industries in the south western Nigeria. Panayides et al. (2007) emphasized that, inbound logistics is a functional system which is crucial for improving efficiency, both in the flow of goods and information and to meet low-cost, fast, and reliable delivery objectives within a company and throughout a network of companies. Logistics significantly contributes to company's competitive advantage in both efficiency and effectiveness. Logistics activities and processes are fundamental elements that a company's supply chain capabilities and competences are based upon.

Consumer goods companies play a very important role in the development of every economy and have many dynamic benefits crucial for economic growth and transformation. It is a leading sector in many aspects. It is an avenue for increasing productivity related to import replacement and expansion, creating foreign exchange earning capacity; and raising employment. Consumer goods firms have always researched for methods to minimize the cost and maximize flow of shipping each unit of commodity to and fro across the supply and demand nodes. Though, warehousing has smoothen out the fluctuations in demand and supply at market place yet major constraints are been faced in assigning supply and properly matching orders placed during redistribution to final retailers outlets. It is base on this premise that this paper tends to analyze the effect of warehousing operation of inbound logistics practices of consumer goods company's performance in South Western Nigeria.

II. REVIEW OF LITERATURES AND CONCEPTUAL UNDERPINNING

2.1 Inbound Logistics Practices

According to Shyam (2012) inbound logistics is a process concerned with movement of materials or finished inventory from supplier to the purchasing organization. It supports business efficiency through delivery of materials, spares and products necessary for daily operations. Baker and Rushton (2008) note that inbound logistics practices involve collection and transportation of inbound shipments, inventory management, and warehousing. These activities are a major focus areas for Supply Chain cost savings, inventory optimization, and customer service. Coyle (2011), observes that inbound transportation is a business enabler that supports the transfer of products ownership. As firms move goods from source to the place of use they enjoy utilities of place and time. According to Branch (2009) firms can choose one or combine several modes of transport to effectively move materials for scheduled production. Good transportation facilitates Supply Chain efficiency by delivering goods to the ultimate customer securely in an economical way. Baker (2010) states that organizations should have shipment visibility while managing inbound transportation. They should also balance the compromise between imports charges and savings made at the destination.

Karaduman and Udeh (2015) opined that warehousing has two primary flows: the inbound logistics where goods from suppliers are received and stored and outbound logistics where goods are retrieved and dispatched to end customers. Supply Chain Management relies on inbound logistics to avail inventory into the warehouse to fulfill customer orders. Inbound warehousing includes goods inspection, receiving, and storing activities. In this regard, therefore, warehouses primarily facilitate coordinated receipt of inbound shipments into an organization. Without adequate and proper shipment of products into the manufacturing firms, there will be a wide gap in the lead time and this invariably hampers the efficiency of the manufacturing firms which in turn hinders performance. Warehousing supports inventory management by holding stocks for business operations. Gibson (2013) notes that vendors can manage inventory in their clients warehouse through information system integration. Vendor-managed inventory (VMI) ensures sufficient supplies as the supplier is responsible for replenishment based on inventory availability in the warehouse.

Wild, (2002) defines inventory management as specification of the size and placement of stock, items or resource for organizational use. Inventory is managed at different locations of a Supply Chain to ensure uninterrupted operations in a firm. Coyle (2009) notes that management of material happens not only in the stores but also while in on transit. A firm will engage in inventory management to ensure goods are available at the correct quantities, quality and at the accurate time. This ensures that they deliver optimal service at controlled costs (Reid and Sanders, 2007).

2.1.1 Overview on warehousing

Warehousing takes up to between 2% and 5% of the cost of sales of a corporation (Heung and Sung, 2006), and with today's highly competitive global business environment organizations are emphasizing on Return on Assets, and hence minimizing warehousing costs has become an important business issue. Many manufacturing firms are automating their basic warehousing functions to achieve the increase in throughput rates or inventory turns required for their warehousing operations to be cost effective.

Moving the material flows in the supply chain is impossible without concentration in certain areas of necessary supplies, storage for dedicated storage. Movement through the warehouse due to the cost of labor and materials, which increases the cost of goods. In this regard, the problems associated with the operation of ware-

houses, have a significant impact on the rationalization of movement of material flows in the supply chain, the use of vehicles and distribution costs. (Linder and Harold, 2002).

Modern large warehouse - is a complex technical structure, which consists of many interrelated elements, has a definite structure and performs a number of functions to transform the material flow as well as the generation, processing and distribution of goods among consumers. In this case, because of the variety of parameters, technological solutions, equipment design and characteristics of different nomenclature, handled cargo warehouses are complex systems. At the same time the warehouse itself is only part of the system of higher level - the logistics chain, which forms the basic and technical requirements for the storage system sets goals and criteria for its optimal functioning, dictates the terms of processing load. (Linder et al, 2002).

It is necessary to allocate warehouse resources efficiently and effectively to enhance the productivity and reduce the operation costs of the warehouse (Poon, 2009). One vital area determining the efficiency of warehouse is the determination of the proper storage locations for potentially thousands of products in a warehouse. Various factors affecting the storage assignment like order picking method, size and layout of the storage system, material handling system, product characteristics, demand trends, turnover rates and space requirements are been extensively studied. It has been suggested that selecting appropriate storage assignment policies (i.e. random, dedicated or class-based) and routing methods (i.e. transversal, return or combined) with regards to above factors is a possible solution to improve the efficiency (Felix, 2011).

2.2 Theoretical review

2.2.1 Resource-Based View

According to Wernerfelt (1984) resource based theory considers organizations as bundles of resources that can be controlled and managed in a manner to make the firms to be competitive. Firms managed this way can also have increased net value and increased benefits enhanced at the same costs in comparison with other players in the industry. The theory assumes that firms can access different resources that can give them competitive edge and that some of these resources cannot be exchanged in the factor markets and are hard to build or imitate (Barney & Clark, 2007). The theory lays emphasis on firm‟s resources as its key determinant to its excellence performance and competitiveness (Cool, Almeida Costa and Derrick, 2002)

2.2.2 Theory of Constraints

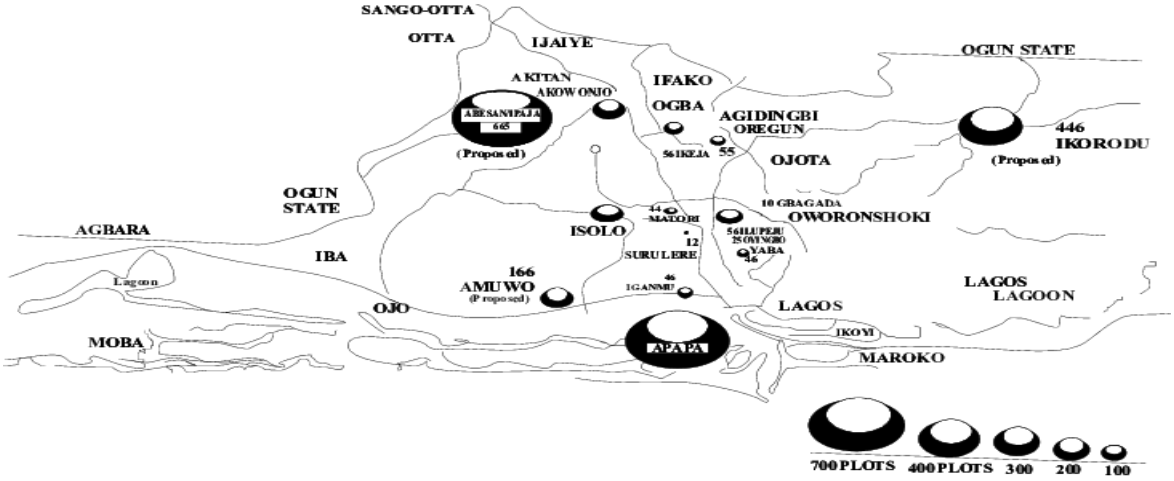
Theory of constrains (TOC) is a system that views the organization or units in an organization as being limited in achieving more of its objectives by at least one constraint (Bushong and Talbott 1999).According to Davies, Mabin and Balderstone (2005) firms will always have one constraint. Theory of Constraints aims to maximize profit by ensuring that the limiting factor is utilized more efficiently. The theory assumes that organizations can be assessed and organized by three measures namely: throughput, inventory and operational expense. It seeks to maximize throughput and minimize operating expenses for administration, sales and labour (Bushong and Talbott 1999). According to Ehie and Sheu (2005) inventory is the total cash a firm invests in purchasing things its aims to sell while operational expense is all the money a company utilizes to turn inventory into throughput. Throughput on the other hand is the speed at which the system yields money from sales. TOC approach enables focus on possible elements that impede efficiency and aim of exploiting the flow of full value-adding operations, these constraints could lie anywhere in the SC (Krajewski and Ritzman, 2007). As such inbound logistics may become an impeding factor if not effectively managed and firms need to ensure operational efficiency through it (Rushton, Croucher & Baker, 2006). By so doing firms will address challenges of stock outs, long delivery lead times, reduced inventory holding costs hence optimal SC performance (Benton, 2007).

III. METHODOLOGY

Lagos State is one of the states in the South West zone of Nigeria, it is bounded on the North and East by Ogun State. It's on latitude 6°35′N and longitude 3°45′E of the equator. In the West it shares boundaries with the Republic of Benin. Behind its Southern borders lies the Atlantic Ocean. 22% of its 3,577 km^2 are lagoons and creeks. It has the highest population density of Nigeria's states. Victoria Island, the financial center of the metropolis, is known for its beach resorts, boutiques and nightlife. To the north, Lagos Island is home to the National Museum Lagos, displaying cultural artifacts and craftworks. (Lagos State Information, 2015).

The population of the study comprises of Managers, Logistics officers, Procurement Officer and Suppliers in Lagos State, Nigeria which form the crux of the respondents from the selected Consumer Goods companies. 150 respondents were randomly selected from the total population and a structured questionnaire was use to obtain data which was based on 5 likert scale was administered to the respondents.

Figure 3.1 Map showinEg locations of Consumer Goods Industries based in Lagos State



Source: Adebola Oketola, (2011)

IV. RESULTS AND DISCUSSION

4.1 Inbound Logistics Practices

Table 4.1 shows that consumer goods industry engages in Inbound Logistics Practices, this enhances their productivity and performance and also helps them to satisfy customers needs. This in turn reduces their lead time .

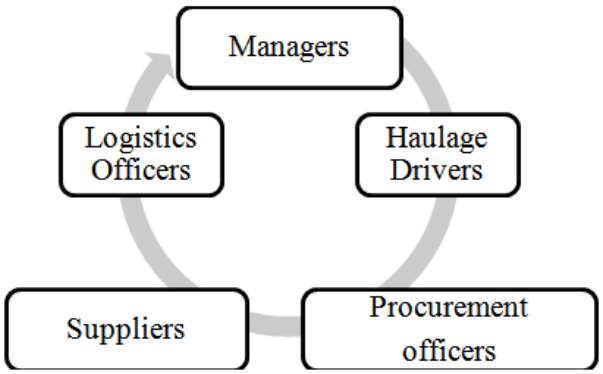
Table 4.1 Inbound Logistics Practices

Transportation Practices	Freight forwarding Freight Consolidation Tracking
Warehouse practices	Goods Inspection Inventory put away upon sorting Prompt delivery of goods
Inventory management Practices	Stock Keeping Replenishment Short Lead Time

4.2 Participation of Respondents

The paper focuses on respondents that are directly involved in the operations of the warehouse in order to ascertain its effect on the performance of the companies.

Figure 4.1 Participation of Respondents



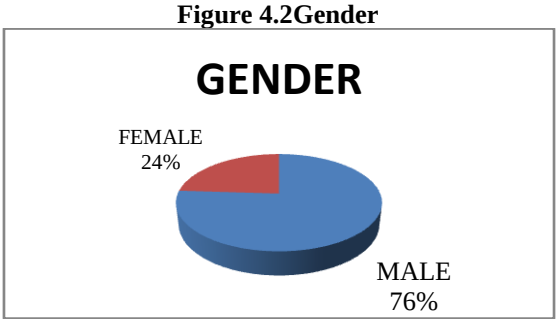
Source: Field Survey, 2020

4.3 Socio –Demographic Characteristics of Respondents

4.3.1 Gender distribution of respondents

Figure 4.2 shows that 76% were male while 24% are females. The respondents were dominated by male respondents. This implies that majority of the decision makers in manufacturing firms are predominantly male.

Figure 4.2Gender

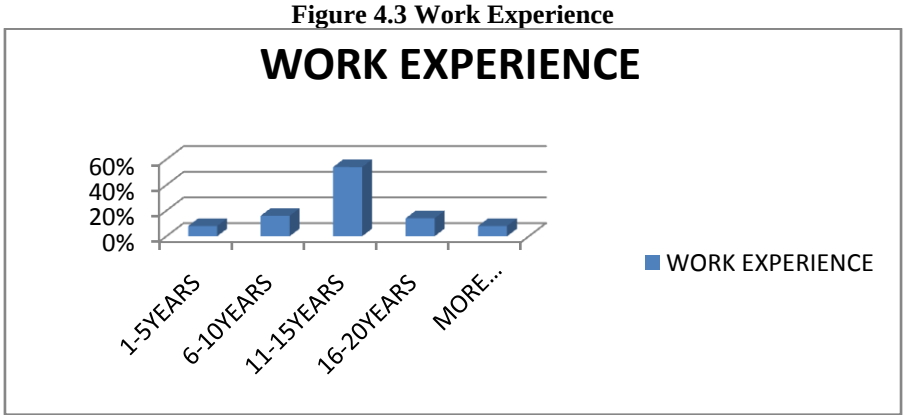


Source: Field Survey, 2020

4.3.2 Work Experience of the Respondents

Figure 4.3 shows that respondents with the knowledge of the warehouse operations and it effects on the company's performance are not quite old in the industry this gives the opportunity to be able to follow the trends of the new development in warehouse operations especially in the area of Information Communication Technology.

Figure 4.3 Work Experience



Source: Field Survey, 2020

4.4 Impact of Warehouse Operation on Company's Performance.

Table 4.2 shows the effect of warehouse operations on the performance of consumer goods industries. R is 0.389 this shows the combined effect of the independent variables on the dependent variables. R^2 is 0.151; this implies 15.1% of variation on performance is explained by the variables under consideration. The significance of this value was tested using Analysis of Variance (ANOVA),calculated F – value is 4.253 which is significant at $P<0.05$, this implies that effective warehouse operation contributes immensely to the performance of the consumer goods industries in satisfying customers need and overcoming competition.

Table 4.2 ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.049	6	1.841	4.253	.001[a]
Residual	61.911	143	.433		
Total	72.960	149			

Source: Field Survey, 2020

4.4.1 Regression Coefficients of the impact of warehousing operations on Company's performance.

From the findings on table 4.3, shows that According to the regression equation established, holding all independent factors constant then impact of warehouse operation on company's performance will be 2.506 units. From the regression equation holding all other independent variables constant, a unit decrease in prompt delivery of goods will lead to a 0.046 increase in company's performance; a unit improvement in lead time will

lead to a 0.088 increase in company's performance also a unit decrease in inventory management through better inventory balance will result to a -0.251 decrease in company's performance this implies that inventory management is germane in the performance of companies most especially consumer goods industry which deals with customer satisfaction. In addition, reduced operational cost has coefficient of 0.409 which is significant at P< 0.05implies that a unit increase in reduced operational cost will lead to an increase in company's performance through effective warehouse operations. Improved security and safety and efficient labour allocation is not significant so the regression line but the effect they have on the company's performance cannot be over emphasized.

Table 4.3 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
Constant	2.506	.339		7.402	.000
Prompt Delivery of Goods	-.046	.091	-.039	-.505	.015
Short Lead Time	.088	.058	.115	1.320	.031
Better Inventory Balance	-.251	.085	-.242	-2.948	.004
Improved Security and Safety	.082	.095	.067	.857	.393
Reduced Operational Expenses	.409	.109	.298	3.758	.000
Efficient Labor Allocation	-.074	.073	-.082	-1.017	.311

Company's Performance = 2.506 + 0.046PDG + 0.088SLT – 0.251 BIB + 0.409ROC
Source: Field Survey, 2020

V. CONCLUSION AND RECOMMENDATION

The findings of the research shows that Warehousing function is very critical as it acts as a node in linking the material flows between the supplier and customer. In today's competitive market environment companies are continuously forced to improve their warehousing operations. As an impact of large product varieties and shortened customer response times there is a greater emphasis on the ability of the organizations to establish smooth and efficient logistics operations. In this regard, warehouses play a vital role because they function as nodes that direct the flow of materials within a distribution network. The effects of organizing warehousing activities can directly be seen in customer service levels, lead times, and the cost structure of a company. Hence we can conclude based on the findings that warehousing operations influence the performance of Consumer Goods Industries. Therefore, for greater achievement and to overcome all constraints it is recommended that strategic investment in human capital development in consumer goods industries should be improved on. Also investment in modern equipment that are in consonance with international standard in order to upgrade warehousing development and finally there should be increase in the awareness of warehousing potentials in order to increase the role of logistics in consumer goods industries.

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Omolola Madoh GEGELESO. "Effect of Warehousing Operation on Inbound Logistics Practices of Consumer Goods Industries Performce in South Western Nigeria." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 25(6), 2020, pp. 46-52.