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SUPPLY CHAIN MANAGEMENT AND PRODUCT VALUE CREATION: A PANACEA FOR ENHANCING COMPANY'S PROFITABILITY

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Abstract

Purpose: This study focused on the influence of supply chain management on product value creation towards enhancing company's profitability. The specific objectives were to examine the effect of raw material sources, manufacturing and logistics as metrics of supply chain management on company's profitability through product value creation.

Methodology: The study utilized survey research design. Primary source such as questionnaire response was used to proof the originality of the study. The population of the study comprised of marketing, purchasing and supply and management, top and middle staffs working in the three selected manufacturing companies in Nigeria includes Uniliver Nigeria Plc, Nestle Nigeria Plc and Cadbury Nigeria Plc, all the headquarters situated in South-West, Nigeria. The study utilized convenience sampling technique to drawn sample of 235 and all respondents were used for the study. 5-point likert scale options of structured questionnaire were used in the study to obtain respondents response. Content validity was used to determine the validity of the instrument and the value of the test of reliability was 0.87 which was calculated using test-retest reliability method. Simple linear regression analyses were used to test the hypotheses.

Findings: Three hypotheses were tested in line with the objectives of the study and it was revealed that raw material sources, manufacturing and logistics as metrics of supply chain management have significant effect on company's profitability through product value creation.

Recommendations: The study suggested some recommendations as follows: Manufacturing company's manager should establish a favorable relationship with suppliers in order to source the right quality and quantity of raw material that create value to company's product, Manager should involve in proper planning of both human and material resources to showcase the effectiveness of supply chain management in the business organization and manufacturing activities should be paramount among manufacturing firms for efficient transformation of raw material to finished product. Better coordination of manufacturing activities necessitates product value creation.

Keywords: *Supply Chain Management, Product Value Creation, Company's Profitability, Raw Material, Manufacturing, Logistics*

Introduction

The pertinent desire of every manufacturing company gears towards profit driven in the business environment. Profitability is paramount to all business ventures, without it business organization cannot survive in the long run within competitive business environment. In the business environment, it is important to measure current, past profitability and projecting future profitability. The profit anticipating for by the manufacturing company, cannot be actualized even though there is successful transformation of raw materials into finished product, except such products are convey to the right consumer which add value to it through supply chain. Supply chain management application and practicing assist business venture to remain competitive in the global race and also enhancing its profitability (Suhong & Binshan , 2006). Supply chain is a business concept that gears towards adequate step and flow of product to the needed place. Manufacturing organization in the past years lay euphrasy on effective distribution service and physical product to gain competitive advantage (Tai, & Chin-Fu, 2010). A supply chain is the set of values adding activities linking the business suppliers and its customers. The principle of supply chain activity is receiving goods from firm's suppliers which add value by delivering to customers (Simchi-Levi, Ka minsky & Simchi-Levi, 2000).

In manufacturing organization, supply chain management is perceived as effective means for achieving successful supply chain competition (Sahay, Jatinder & Gupt, 2006). Christopher (1998) defined supply chain as the connection of business organizations that are engage in upstream and downstream production activities, in the diverse ways and activities that add value in the form of products and services to ultimate customer. Supply chain management maintain accurate inventory, adequate information sharing, and developed trust among supply chain partners (Gorane & Ravi, 2015). Firms tend to create value for their product and services by customizing them to meet the needs of individual customers. By customizing their finished goods, marketers better satisfy the needs of their customers, while developing a stronger relationship. The main reason for product and service modification is improved technology for mass customization. This product value creation process enables companies to develop appropriate value-based strategies aimed at select customers. For successful implementation, it is important to have the value creation process in place.

Moreover, supply chain management has been a foundation of various aspects of manufacturing firms through the influences range from logistics, transportation, operations management and materials distribution management, marketing, as well as purchasing and information technology Basically, all these mentioned variable are built into philosophy of supply chain management to produce an overall supply chain strategy that ultimately improves firm performance (Croom, Romano, & Giannakis , 2000; Wisner & Tan 2000; Jinesh, , Dangayach, & Soumya (2010)).

This study focused on the influence of supply chain management on product value creation toward enhancing company's profitability.

Statement of the problem

Most of the manufacturing companies focused on production of goods to meet the demand of customers without laying more emphasis on the economic value of supply chain management. Furthermore, Managers in manufacturing companies neglected supply chain, considering purchasing as a service to production (Famer, 1997). Mass production of goods was the main focus of manufacturing companies; less emphasis was laid on cooperative and strategic buyer supplier partnership. The importance of supply chain management on product value creation cannot be under estimated. Lee and Corey (1995) stated that supply chain management is one the vital machineries in manufacturing activities and it has linkage with facilities that engaged in procurement of raw material, transform the material into intermediate and final products and then deliver products to customers through a distribution system.

This study tends to educate manufacturing companies about the influence of supply chain management towards enhancing company's profitability.

Objectives of the study

1) To examine the effect of raw material sources as metrics of supply chain management on company's profitability through product value creation.
2) To examine the effect of manufacturing as metrics of supply chain management on company's profitability through product value creation.
3) To examine the effect of logistics as metrics of supply chain management on company's profitability through product value creation.

Conceptual Framework

Concept of supply chain management

A supply chain comprises of all the organization machinery that engaged directly or indirectly in satisfying customer request. Lee & Corey (as cited in Rajendra, Dixit & Ashish, 2011) stated that supply chain management consists of the integration activities taking place among a network of facilities that procure raw material, transform them into intermediate and final products and then convey products to customers through a distribution system. The supply chain actors include manufacturer, suppliers, transporters, retailers, warehouses, and customers themselves. Supply chain functions of manufacturer in each business organization, involved receiving and satisfying customer request. Also includes marketing, distribution, new product development, customer service, operation, , finance, and some other function that are in line with meeting customer request (Chopra & Meindl, 2001).

Supply Chain Management is a connection of facilities and distribution mechanism that engaged in the procurement of raw materials, transformation of them into finished products and distributes these products to customers Ganeshan & Harrison (as cited in Jinesh ,Dangayach & Agarwal, 2010). It's also encompasses all the activities involve in conveying the right product to the right consumer in the right quantity at the right time (Goffin, Marek, & 1997; Wagner, 2003). Supply chain management assist in enhance performance through closely integrating, coordinating the internal functions within business organization and linking them effectively with external operations of suppliers and customers. .

Supply chain management is vital in building and sustaining competitive advantage in product and services of every firm. Gunasekaran and Ngai,(2004); Sufian (2010) stated that the supply chain performance was influenced through effective integrating and managing vital information into business organization supply chain activities. Supply chain management practices are defined as a set of activities carried out in business organization to promote effective management of its supply chain.

Value of supply chain management

Fawcett, Magnan and Mccart, (2008) reviewed key benefits of supply chain management proposed in literature and noted the following in the order of their importance;

1) Increased inventory turnover
2) Increased revenues
3) Supply Chain Management cost reduction
4) Product availability
5) Decreased order cycle time
6) Responsiveness
7) Economic value added
8) Capital utilization
9) Decreased time to market
10) Reducing logistics costs.

Concept of product value creation

Product value creation activities are involved in the production of products and services, and would include some primary activities of a value chain, for example, production or outbound logistics Porter (as cited in Cliff & Ve´ronique, 2007)). The value of these activities can only be identified through ultimately results in the appropriation of revenues from customers. Delivering value involves delivering responsible products and services to the target customers at the actual place, time and price.

Value can only be delivered when business organization's products and services, in addition to its other outputs deliver customers specification and long term economic profitability (The International Federation of Accountants 2020).

Value-creation strategies gears towards various ways which value can be perceive by customers. Ulaga (2003) stated eight ways of value can be created in business-to-business activities: delivery performance, service support, right time to market, supplier experties, product quality price, process costs and personal interaction,

Components of value-creation strategy

O'Cass and Ngo (2011) stated strategy for firm's value-creation as follows:

1. Performance value: It is the component that is associated with the product attributes and the attributes' performance.

2. Pricing value: It is the component that can be referred to the fair price or the value price. The fair price refers to customer's perception in terms of paying a fair price for a product or service while the value price refers to a price that testifies the benefits of purchasing a product.

3. Relationship value: It is the component that refers to the firm's efforts to create and deliver a free purchase and consumption experience.

4. Co-creation value: It is the component that is added when customers discover benefit of influencing various parts of the business system to co-produce their own special purchase and consumption experience.

Concept of company's profitability

Nimalathasan (2009) stated that the profit is the main aim of a business and does not limit to progress of a product, but also market development of product. Measuring financial performance by using profitability standard and return is completed by modern approaches to measure performance with regard to the concept of value creation and hence increase the value concept. Profit means as an absolute indicator of earning capacity, while profitability is relative indicator of earning capacity. Profitability may be defined as the ability of invest money to harvest positively in return from its use.

Stefea, (2002) State that the profitability is the "ability of a strong business to generate revenues higher than expenses involved. Gibson as cited in Achim & Borlea (2008) defines the profitability as the ability of firms to reap earnings. Sexton and Kasarda (2000) found that firm profitability was correlated with sustainable growth. Brigham, Gapenski and Ehrhardt as cited in Achim & Borlea, (2008) posit that profitability is the overall result of various policies, managerial decisions and the rates represent the overall operating result of the combined effects of liquidity, asset management and debt management.

Conceptualize model of supply chain management, product value creation and company's profitability

This conceptualize model of supply chain management, product value creation and company's profitability is the model that illustration the relationship between these mentioned variables. Most supply chain management studies are based on manufacturing industry. Manufacturing companies used supply chain management to evaluate the potency and value of their finished products in the competitive business environments. Manufacturers checkmate the flow of supply chain and managing the steps products were manufactured and distributed to customers. Manufacturers try their best to meet customer demands with varieties, quick response to order, fast delivery of manufacturing quality product with assurance of meeting customer's specific demands for product. Supply chain management has contributed in various activities of manufacturers with influences from logistics and transportation, operations management and materials and distribution management, marketing, as well as purchasing and information technology. Base on the above fact, supply chain management influence product value creation through easy source of raw materials, manufacturing and efficient management of Logistics activities which in turns enhances company's profitability

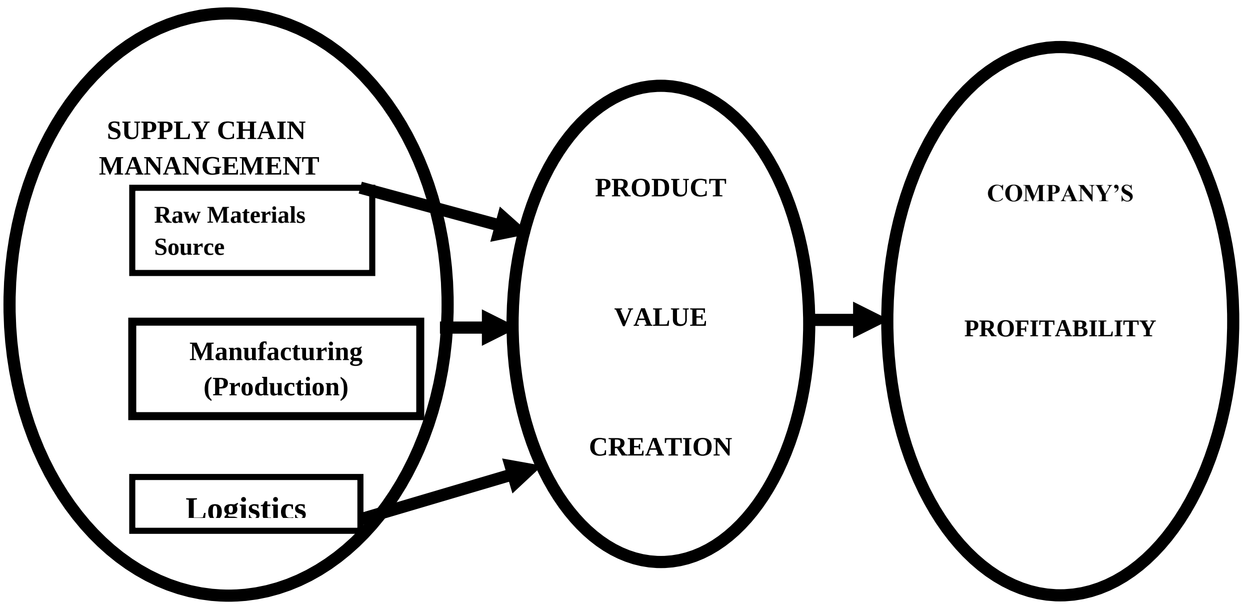

Figure 1: Conceptualize model of supply chain management, product value creation and company's profitability

Source: Researcher

Methodology

The study utilized survey research design. Survey research design was suitable for study that involved large respondents. Primary source was used to enrich this study to proof its originality. The population of the study comprises of marketing, purchasing and supply and management, top and middle staffs working in the three selected manufacturing companies in Nigeria includes Uniliver Nigeria Plc, Nestle Nigeria Plc and Cadbury Nigeria Plc, all the headquarters situated in South-West, Nigeria. The study utilized convenience sampling technique to drawn sample of 235 for the study. This sampling technique was used to administered questionnaire to available personnel in the various concerned units among selected manufacturing companies utilized in the study. 5-point likert scale options of structured questionnaire were used in the study to obtain respondents response. Content validity was used to determine the validity of the instrument and the value of the test of reliability was 0.87 which was calculated using test-retest reliability method. It indicated that there is internal consistency of the instrument. Simple percentage was used to analyze the data and Simple linear regression was used to test the hypothesis.

Analyses and result

Findings show the distribution of respondents on the bases of sex, age and qualification. The analyses of distribution of sex shows that 167 were male representing 71.1% and 68 were

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female representing 28.9%. It shows that male was more than female in this study. The analyses of distribution of age of respondents shows that, out of 235, respondents, 53 falls between 25 – 34 years, 126 falls between 35- 44 and 56 falls within 45years and above. Analyses of distribution of educational qualifications of respondents show that 217 obtained HND/B,Sc and 18 were holder of PGD /MBA and others.

Research hypothesis One

Ho: Raw material sources as metrics of supply chain management has no significant effect on company's profitability through product value creation.

H1: Raw material sources as metrics of supply chain management has significant effect on company's profitability through product value creation.

Table 1

Regression Model Summary for H1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
H1	.654a	.427	.425	35.19119

a. Predictors: (Constant) Raw material sources (Supply chain management)

b. Dependent Variable: Company's profitability through product value creation

Source: SPSS Version 20

Table 2

ANOVA for H1

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	215315.333	1	215315.333	173.863	.000
H1	**Residual**	288551.799	233	1238.420		
	Total	503867.132	234			

a. Dependent Variable: Company's profitability through product value creation

b. Predictors: (Constant), Raw material sources (Supply chain management)

Source: SPSS Version 20

Decision Rule

According to Table 1 and 2 above, the overall result for the regression model was significant ($p = 0.000 < 0.05$), thus results indicate support for the first hypothesis. We reject null hypothesis and accept the alternative hypothesis which state that raw material sources as metrics of supply chain management has significant effect on company's profitability through product value creation. The result considered that raw material sources can be used to predict company's profitability through product value creation; it means that if raw material sources are well estimated, the company's profitability through product value creation may also improve. Depending on the R Square value of (0.427), raw material sources could explain 6.5% variation in company's profitability through product value creation. The analysis of variance (ANOVA) calculated F test was 173.863 and an associated significance p value of 0.000 (p value < 0.05) was significant. The implication was that the simple linear regression was good fit for the data.

Research hypothesis Two

Ho: Manufacturing as metrics of supply chain management has no significant effect on company's profitability through product value creation.

H1: Manufacturing as metrics of supply chain management has significant effect on company's profitability through product value creation.

Table 3

Regression Model Summary for H2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
H2	.614a	.377	.374	31.83664

a. Predictors: (Constant) Manufacturing (Supply chain management)

b. Dependent Variable: Company's profitability through product value creation

Source: SPSS Version 20.

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Table 4

ANOVA for H2

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	142745.164	1	142745.164	140.834	.000[b]
H2	Residual	236162.257	233	1013.572		
	Total	378907.421	234			

a. Dependent Variable: Company's profitability through product value creation

b. Predictors: (Constant), Manufacturing (Supply chain management)

Source: SPSS Version 20

Decision Rule

According to Table 3 and 4 above, the overall result for the regression model was significant ($p = 0.000 < 0.05$), thus results indicate support for the first hypothesis. We reject null hypothesis and accept the alternative hypothesis which state that manufacturing as metrics of supply chain management has significant effect on company's profitability through product value creation. The result considered that manufacturing can be used to predict company's profitability through product value creation; it means that if manufacturing are well estimated, the company's profitability through product value creation may also improve. Depending on the R Square value of (0. .377), manufacturing could explain 6.1% variation in company's profitability through product value creation. The analysis of variance (ANOVA) calculated F test was 173.863 and an associated significance p value of 0.000 (p value < 0.05) was significant. The implication was that the simple linear regression was good fit for the data.

Research hypothesis Three

Ho: Logistics as metrics of supply chain management has no significant effect on company's profitability through product value creation.

H1: Logistics as metrics of supply chain management has significant effect on company's profitability through product value creation.

Table 5

Regression Model Summary for H3

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
H3	.577[a]	.333	.330	33.43901

a. Predictors: (Constant) Logistics (Supply chain management)

b. Dependent Variable: Company's profitability through product value creation

Source: SPSS Version 20

Table 6

ANOVA for H3

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	130136.844	1	130136.844	116.384	.000[b]
H3	**Residual**	260532.926	233	1118.167		
	Total	390669.770	234			

a. Dependent Variable: Company's profitability through product value creation

b. Predictors: (Constant), Logistics (Supply chain management)

Source: SPSS Version 20

Decision Rule

According to Table 5 and 6 above, the overall result for the regression model was significant ($p = 0.000 < 0.05$), thus results indicate support for the first hypothesis. We reject null hypothesis and accept the alternative hypothesis which state that logistics as metrics of supply chain management has significant effect on company's profitability through product value creation. The result considered that logistics can be used to predict company's profitability through product value creation; it means that if logistics are well estimated, the company's profitability through product value creation may also improve. Depending on the R Square value of (0.333), logistics could explain 5.8% variation in company's profitability through product value creation. The analysis of variance (ANOVA) calculated F test was 173.863 and an associated significance p value of 0.000 (p value < 0.05) was significant. The implication was that the simple linear regression was good fit for the data.

Discussion of Findings

The first hypotheses testify that raw material sources as metrics of supply chain management has significant effect on company's profitability through product value creation. Alonso, Field, Gregory and Kirchain, (2007) affirmed that significant of raw materials is of value to those manufacturers that operate upstream, refining extracting and transforming raw material into finished products; such manufacturers are aware of the different supply and prices od raw materials. However, it is important that all manufacturers become abreast of the future value of raw material supplies on their business. Materials flow downstream from where raw material are source through manufacturing facilities which transform the raw materials into products components that are later assembled and transform into finished products. LaMarco, (2020) also affirmed that purchasing and supply unit source raw materials needed to generate the company's products. Purchasing initiates relationships with suppliers, identifies the qualities and quantities of important items. It is of value for those in purchasing unit to keep an eye on the budget estimate for material to be cost-effective for the company, as well as adhering to high-quality standards.

The second hypotheses testify that, manufacturing as metrics of supply chain management has significant effect on company's profitability through product value creation. Singh, (1995) affirmed that to survive in a competitive business environment, a manufacturing firm has to focus on efficient manufacturing process and technology that equip people in production and trained them in the latest technologies, management skills, processes them in the area of design manufacturing of product and tools of integration.

The third hypotheses testify that, logistics as metrics of supply chain management has significant effect on company's profitability through product value creation. Steve Globle, (2006) affirmed that supply chain management assure accurate forecast, reduced operation costs for logistics reduced inventory levels, improved planning and scheduling warehousing and manufacturing, and improved customer service Ganeshan, and Harrison, (1995) also affirmed that supply chain is the connection of facilities and distribution alternatives that performs the duty of raw materials procurement and transformation the raw materials into finished products for easy distribution to customers.

Conclusion

From findings, it was revealed that raw material sources, manufacturing and logistics as metrics of supply chain management has significant effect on company's profitability through product value creation. Supply chain management process is made up of different parties includes retailer, manufacturer, and supplier involved in providing products and services to the customers, and the sole purpose is to add value in their products, both in upstream and downstream, through some channel with the proper flow of information and resources. In supply chain management, there exist five major key functions: procure, make, move, store and service. Logistics is viewed as the movement of products from source to destination. It is involved at various stages of a supply chain; from supplier to plants, from plants to distribution centre from distributions centre to stores, from stores to customers, or any of these combinations. Beside, logistics management comprises of technology, packaging, procurement, third-party integration and customer service. The components revolve round supply chain management has a great influence on company's profitability through product value creation.

Recommendations

The study attracts the following recommendations as follows

1) Manufacturing company's manager should establish a favourable relationship with suppliers in order to source the right quality and quantity of raw material that create value company's product
2) Manager should involve in proper planning of both human and material resources to showcase the effectiveness of supply chain management in the business organization.
3) Manufacturing activities should be paramount among manufacturing firms for efficient transformation of raw material to finished product. Better coordination of manufacturing activities necessitates product value creation.
4) Logistics activities should not be under estimated due to its impact in supply chain management. Therefore, there should be proper coordination of logistics segment such as, warehousing, inventory control, material handling and transportation to facilitate product value creation which enhances company's profitability.

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