INFLUENCE OF MATERIAL MANAGEMENT ON PROFITABILITY OF A COMPANY IN THE FOOD AND BEVERAGES INDUSTRY IN NIGERIA.

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ABSTRACT

This paper examined the influence of materials management on profitability of food and beverages industry in Nigeria, using Nestle Nigeria plc. The study employed survey research design with the administration of questionnaire to collect data from all categories of workers in the organisation. Businesses in Nigerian food and beverages sector have performed poorly over the years due to lack of adequate management commitment to timely funding of materials procurement as well as unethical practices. The sample of the study comprise of one hundred and fifty employees of the company randomly selected through stratified random sampling. Two hypotheses were tested using multiple regression. correlation analysis and analysis of variance. The study found out that materials management as measured by purchased materials, work-in-proces materials and finished goods has a significant influence on profitability of food and beverages firms and also there exist a significant relationship between materials management and profitability. Based on the findings, it was recommended that greater emphasis and attention should be given to materials management to enable firms achieve the optimal cost by maximizing the use of firm resources with adequate supply of materials for the production process and minimize cost through effective management of the materials so as to save cost. improve and increase profitability. It was also recommended that firms need to create departments dealing with materials function to enable easy control and monitoring costs.

Keywords: *Materials Management. production costs. material costs. profitability*

INTRODUCTION

BACKGROUND OF THE STUDY

Materials management is one of the basic function of every business. Along with the other functions of marketing, engineering, finance, production and personnel it has equal contribution to make to the triple objectives of survival. stability and growth in any healthy business. The right mate... ...te blood" and heart of any organization (Asaolu et al., 2012; Unam, 2012)... ...available to the management of an organization namely men, machines and materials ... also be appreciated that it is only the last, namely materials, which is most amenable to ... Materials management is one of the ways in which the linkages involved in the flow of materials and services can be integrated. Materials management concepts enhance communication and coordination by bringing together all functions which are interrelated in production system. The importance of materials management is evident in the amount of expenditure allotted to materials and the significant contribution of materials to organizational performance. Efficient materials management will reduce materials cost, improves profitability and increase rate of return on investment.

Materials management involves purchasing, supplier management, materials handling within the facility, and extensive coordination among all functional areas of the facility in conjunction with materials management (Scapens, Jazayeri, and Scapens, 1998). It is the process which an organization is supplied with the goods and services that it needs to achieved its objectives. Ogbadu (2009) avowed that materials management is a tool that can be used effectively in promoting profit maximization in a company. Asaolu et al. (2012) treats materials management as both source of opportunities to reduce production costs and has Profit Centre. Bose (2007) cited by Gerald (2012) explained that supply chain coordination improves all stages of the chain, taking actions that together increase total supply chain profits. Unam (2012) stated that there is an affective relation between materials management and success of manufacturing firms. Chase et al. (2009) acknowledged that the objective of materials management is to ensure that the right item is at the right place, at the right time and at a reasonable cost. The intention of having materials management system in place is for solving materials problems from a total company view point (optimize) by coordinating performance of the various materials flow.

Historical Background of Nestle Nigeria Plc

Nestle Nigeria Plc is a company registered in food and beverages industry of the Nigerian stock exchange. The company has been conducting food manufacturing business in Nigeria for the past forty (40) years.

Recently, it launched a new brand of Milo with the caption fortified with Actigen E, an effort is made to establish the materials management on the profitability of the company and to customers this new idea about their favourite Milo with the view to improve sales purchase.
Nestle with headquarters in Vevey, Switzerland was founded in 1867 by Henri Nestle and is today the world's biggest food and beverage company. The organization employs around 247,000 people and have factories or operations in almost every country in the world (Nestle Magazine, 2006). Nestle Nigeria Plc, a company in the food and beverages sector of the Nigerian economy engages in the business of food processing and packaging.

This study takes a look at the extent to which materials management influences the profitability of food and beverages sector in Nigeria. Past research evidence's on the performances of food and beverages firms in Nigeria revealed that some firms in the industry have shut down operations as a result of high manufacturing costs created by exorbitant prices of materials coupled with lack of adequate management commitment to timely funding of materials procurement (Ilori et al., 2000; Oba, 2008; Adeloye, 2010).

STATEMENT OF THE PROBLEM

The food and beverages industry in Nigeria has performed poorly over the years due to lack of adequate management commitment to timely funding of materials procurement as well as unethical practices of some firms executives (Oba. 2008). Most organizations have entrusted the functions of materials management in the hands of mediocres, who have no formal educational background nor the buying techniques required to enhance company's profitability. Also. some firms do not have genuine and efficient management of the purchase, storage and usage of the materials.

A large number of food and beverages companies in Nigeria have shut down their operations (MAN, 2010) while surviving once are facing competition in the current markets which has led to the need for coming up with better methods of managing and measuring how resources are utilized by various jobs or products, and therefore eliminate any wastage in the value chain. The new cost management methods require having the right professionals doing the right job. Although huge data base of literature review is there for the importance of materials management but rare evidence is found from Nigeria and especially Nestle Nigeria Plc However, because of the dearth of information on the influence of materials management on the profitability of the companies. Hence, there is need to investigate the influence of materials management on the profitability of the company (Nestle Nigeria Plc).

OBJECTIVES OF THE STUDY

It is evident that successful materials management is fundamental to the survival of business, industry and economy. The major objective of this study is to investigate the influence of materials management on profitability of Nestle Nigeria Plc.

The specific objectives of the study are to;

a) investigate the influence of materials management (purchased materials, work-in-proces materials and finished goods) on profitability of the company.

b) examine the significant relationship between materials management and profitability of the company.

RESEARCH QUESTIONS

In line with the above objectives, the following questions were addressed:

a) Does materials management (purchased materials work-in-proces materials and finished goods) have an influence of on profitability of the company?

b) Is there a significant relationship between materials management and profitability of the company?

RESEARCH HYPOTHESES

a) Materials management (purchased materials. work-in-proces materials and finished goods) will not influence profitability of the company.

b) There is no significant relationship between materials management and profitability of the company.

LITERATURE REVIEW

THEORETICAL FRAMEWORK

The origin of materials management could be traced from purchasing functions which understood the importance of integrating materials flow and its supporting functings, both throughout the business and out to immediate customers. It includes the functions of purchasing, expending, inventory management, stores management, production planning and control and pysical distribution management. According to Nigel et al. (1998), materials management means giving responsibility for the whole materials and information flow to one part of the organization. This allows the cordination, reduction and even removal of some intermediate inventories. This activity speeds up the business operation, in advance for the purchases, thereby reducing the horizon for forcasting in the business with greater accuracy of forecast schedule and greater planning stability, leading to redced costs. This definition contains the broad sense.

Materials management was originally seen as a means of reducing 'total costs associated with the acquisition and management of materials'. Different stages in the movement of materials through a multi-echelon system are typically buffered by inventory. Nigel et al. (1998) identified purchasing, material processing, sub-assembly, assembly, and physical distribution as the various stages in the movement of materials. However, where materials management are not in place to integrate these different stages, they are often managed by different people, reporting to different senior managers within the organization. The management of these interrelated materials functions is the basis of the materials management concept.

Chase et al. (2009) in Gerald and Odhiambo (2012) states that the objective of materials management is to ensure that the right item is at the right place, at the right time and at a reasonable cost. The intention of having materials management system in place is for solving materials problems from a total company view point (optimize) by coordinating performance of the various materials flow. Fearon et al. (1989) suggested that the introduction of computers was a great boost to the adoption of materials management, as materials function has many common databases.

Unam (2012) identified that the various types of materials to be managed in any organization include purchased materials, work-in-process (WIP) materials and finished goods (Banjoko, 2000). Ogbadu (2009) adds that basic price, purchasing costs, inventory carrying cost, transportation cost, materials handling cost, office cost, packing cost, marketing cost, obsolescence and wastages as the various costs involved in these materials. Thus, the management of these materials so as to reduce the costs associated is what the study refers to as Materials Management.

Telsang (2009) in his formal definition, defines materials management as management functions supporting the complete cycle of material flow from the purchase and internal control of production materials to planning and control of work in process, to warehousing, shipping and distribution of the finished goods. Materials management is concerned with planning, directing, and controlling the kind, amount, location, movement and timing of various flows of materials used in and produced by the process.

In the study conducted by James (2012) on materials management for Business success in Nigerian Bottling company Plc He submitted that inter-departmental cordination. effective inventory management. good relationship with vendor, and state of the art facilities/ICT were significant success factors of materials management. He concluded that for manufacturing industries to experience remarkable success in their performance, priority must be given to materials management as a total concept. Based on this conclusion, this study looked at the influence of materials management on profitability in Nestle Nigeria Plc. The purpose is to establish the nature of the relationship between materials management and profitability.

CONCEPTUAL FRAMEWORK

According to Jain and Aggarwal (2008) materials management is a concept that integrates all activities of planning, scheduling and controlling materials from design through production and including delivery to the customer. This definition establishes a single responsibility over the material flow system, with full accountability for quality, delivery and cost. Materials management is also important for maximizing the use of firm's resources by ensuring adequate supply of materials for production process and also minimizing cost of holding excessive inventories.

Ogbadu (2009) defines materials management as an aspect of business activity that deals with planning for purchasing, receiving, handling, storing, and releasing of materials for use in production with effective control measures. Asaolu et al. (2012) noted that materials management encompasses all operations management functions from purchasing of raw materials through the production process to the final delivery of the end products. In the 1990s, both the economic and industrial environments are dynamic. Thus, materials management practices and procedures must be capable of supporting effective decision-making in these dynamic environments. The purpose of materials management is to support the transformation of raw materials and component parts into shipped or finished goods.

Lee and Dobler (1997) cited by Ogbadu (2009), defined materials management as the total of all those tasks, functions and routines which are concerned with the transfer of external materials and services into the organization and the administration of same until they are consumed or used up in the process of production, operations and sales. Therefore, materials management has a very important meaning for the consumer and organization. By an effective control over the cost of materials going into the product, Material Manager can directly contribute to profit an amount which would require practically 6 to 7 times the effort by the Marketing for increasing sales. For the consumers. materials management engender meeting customer services requirements at the right time promoting customer satisfaction (i.e. the fraction of customers' demand that is satisfied without delay, or received as promised).

An effective materials management process thus ensures that the right kinds of materials are at the right place whenever needed. It also keep inventory investment losses due to obsolescence and theft under control and provide information service for controlling the distribution of products, production management, instruction, manufacturing, routes and other background information (Ogbadu, 2009).

Recent studies by Asaolu et al. (2012), Unam (2012), and Ogbadu (2009) report the objectives of materials management without a unique classification. However, the objectives of materials management of any organization can be categorized into primary and secondary objectives. The primary objectives of materials [illegible] are making available materials in specified quant[illegible] [illegible] and [illegible] supply. Also, the minimization [illegible] materials and inventory costs, and high inventory turnover. The secondary objectives on the otherhand help to achieve [illegible] objectives. These include the purchasing of items from a reliable source at [illegible] reduction of costs by using various cost reduction [illegible] techniques like variety reduction, standardization and simplification, value analysis, in[illegible] [illegible] Furthermore, the co-ordination of the function such as planning, [illegible] maintenance of materials.

It can be concluded that objectives would vary [illegible] among companies within an industry [illegible] to one specific objective [illegible] one. Consequently, the [illegible] company places [illegible] the type of operation [illegible] and the importance [illegible] of the operation.

[illegible] Profitability [illegible] ultimate determinant [illegible] Ogbadu (2009). Profit is usually what is left after [illegible] accrued revenue and sales. It represents the [illegible] deducted. Profit can be improved either [illegible] cost or both, but in most cases [illegible] substantially influenced by [illegible] to customers because if demand falls and [illegible] hence a portion of the cost [illegible] was of the view that [illegible] possible [illegible] believe that cost reduction is generally [illegible] product. Materials management contributes [illegible] best use of available resources. This can [illegible] scheduling, inventory control, purchasing [illegible] handling, salvage and disposal of scrap [illegible] policies, coordination, and development [illegible] The materials manager has to [illegible] in the Materials Management [illegible] the production activities.

However, any [illegible] and technically efficient [illegible] possible cost and the best [illegible] lowest cost without quality [illegible] employees through adequate [illegible]

It has been emphasized [illegible] corporate profit, especially [illegible] buying goes to the profit [illegible] accounts for a major [illegible] executive can contribute substantially [illegible] executives by the intrinsic nature of their job gain a good knowledge of a wide range of external industrial activities. Hence, more than anybody else in the organization they are able to bring information about new products, materials and processes (Scapens. Jazayeri, and Scapens, 1998).

Asaolu et al. (2012) investigated the relationship between materials management and profitability in Food and Beverage (F&B) industry in Nigeria. The result shows that efficient management of materials has a significant impact on the company's profitability, which was aided by inter-departmental coordination among materials related departments, inventory management, good relationship with vendors, and state-of-the-art facilities/ICT. It was suggested that managers in Food and Beverage Industry should give priority to Materials Management in order to achieve significant cost saving, improvement in production efficiency, and increase in profitability and competitiveness.

Ogbadu (2009) analyzes firms profitability through effective management of materials in Benue Brewery Ltd, Makurdi, Nigeria.The author also examines and outlines the roles and benefits of materials management. The study established a positive and significant relationship between materials management problems and the frequent breakdown of the plant which if corrected would lead to higher profitability. The result shows that profitability can be achieved through effective management of materials with particular attention on sourcing, receiving, storing and issuing materials.

Unam (2012) examine the relationship between Materials Management and success of manufacturing firms. The study focused on the Nigerian Bottling Company Plc (NBC), one of the largest manufacturing firms in Nigeria.The results revealed a positive significant relationship between efficient Materials Management and firm success. This suggests that through efficient management of materials, manufacturing firms can achieve significant cost saving, improvement in production efficiency, and increase in profitability. The study also found that inter-departmental coordination, effective inventory management, good relationship with vendors, and state-of-the-art facilities/ICT were significant success factors of Materials Management

Ramakrishma (2005) identified that half of sales income in a firm is spent on materials. Suppose a firm is spending 50% of its volume on material and the profits are say 10% of sales volume. A 2% reduction in materials cost will boost the profits to 11% of sales or the profits will be increased by 10%. To achieve the increase in profit through sales efforts, a 10% increase in sales volumes will be necessary.

OPERATIONALIZATION OF VARIABLES

Profitability is taken as the dependent variable while materials management is the independent variable. Materials management is measured by purchased materials, work-in-proces materials and finished goods.

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Mathematically this is expresses as follows:
P = f (MM)

MM = f (PM, WIP & FG)

Where

P = Profitability

MM = Material management

PM = Purchased Materials

WIP = Work-In-Proces Materials

FG = Finished Goods

RESEARCH METHODS

RESEARCH DESIGN

This study employed the survey research design method. This was done through the administration of questionnaire to selected respondents. The independent variable is materials management which was measured by purchased materials, work-in-process materials and finished goods and the dependent variable is profitability.

POPULATION OF THE STUDY

The population of this study consist of all members of staff of Nestle Nigeria Plc numbering one thousand five hundred (1500) only.

SAMPLE AND SAMPLING TECHNIQUE.

The sample of this study comprised of one hundred and fifty employees of Nestle Nigeria Plc. The samples were randomly selected through stratified random sampling across different cadres and departments (i.e. purchasing, production, quality control and store departments). A total of one hundred and fifty questionnaires were distributed, with a number of one hundred and twenty one found usable and were analysed. The respondents were made up of ninety two males and twenty nine females with ages from below 30 to 51 and above.

RESEARCH INSTRUMENT

The instrument of the study was a questionnaire which was divided into three sections, namely A to C. Section A measured the demographic information, B measured materials management, and C measured profitability. The materials management scale was a 18 item scale adapted from a scale developed by Gerald and Odhiambo (2012) with a Likert scale scoring format ranging from strongly agree (5) to strongly disagree (1). The Cronbach's álpha value of the scale was 0.89. Seven items measured purchased materials, six items measured work-in-proces materials while the remaining five items measured finished goods. The profitability scale was adapted from a scale developed by [illegible]ko (2004) and Gbadamosi (2012) which is an eighth item scale with a Likert scoring format ranging from very high (6) to very low (1). The scales were revalidated and the Cronbach alphas gave the following results: purchased materials 0.89; work-in-process materials 0.92; finished goods 0.93; and profitability 0.98.

DATA ANALYSES

The demographic information was analysed using frequency counts and simple percentage. The hypotheses were tested using multiple regression analysis, pearson correlation coefficient and analysis of variance (ANOVA). Adebisi (2006) defined regression as "the statistical method of predicting and determining the probable value of dependent (?) given the value of independent (?). The hypotheses gathered for this study were tested at 5% level of significance. The analysis were done based upon the objectives of the study and research hypotheses. The Statistical Package for Social Scientists (SPSS) 21.0 version was used in data analysis.

Data Presentation And Analyses

Table 1: Descriptive Statistics of Demographics

Gender	Frequency	Percentage
Male	92	76
Female	29	23.9
Total	121	100.0
Age	**Frequency**	**Percentage**
Below 30 years	10	8.3
31-40	72	59.5
41-50	32	26.4
51 & Above	07	5.8
Total	121	100.0
Marital Status	**Frequency**	**Percentage**
Single	64	52.9
Married	47	38.8
Others	10	8.3
Total	121	100.0
Length of Service	**Frequency**	**Percentage**
Below 5 years	4	3.3
5-10 years	54	44.6
11-15 years	36	29.8
16 & Above	27	22.3
Total	121	100.0
Educational Qualification	**Frequency**	**Percentage**
Primary Education	-	-
Secondary Education	20	16.5
Post Secondary Education	51	42.2
Masters	43	35.5
Others	[illegible]	4.8
Total	121	100.0
Managerial Status	**Frequency**	**Percentage**
Top Management	32	26.4
Middle Management	[illegible]	[illegible]
Lower Management	50	41.3
Total	[illegible]	100.0
Departments	**Frequency**	**Percentage**
Purchasing	48	39.7
Production	[illegible]	23.9
Quality control	30	24.7
Store Warehousing	14	11.7
Total	121	100.0

Source: Field Survey, October 2013

The table above shows that 92 (76.1%) of the respondents were male while their female counterparts were 29 (23.9%). 10 (8.3%) of the respondents were below 30 years of age. 72(59.5%) lies between 31-40 years. 32 (26.4%) lies between 41-50 years while 7 (5.8%) of the participants were between 51 years and above. The table also indicated that 64 or 52.9% were single, 47 or 38.8% were married, while 10 or 8.3% of the respondents were others.

The table also revealed that 4 or 3.3% had below 5 years experience, 54 (44.6%) respondents had experience ranging between (5-10 years). Others are 36 (29.8%) and 27 (22.3%) for industry experience ranging between (11-15 years) and (16 years and above). The implication of this result is that most of the respondents had enough knowledge and experience to make useful contribution to this area of research. The table further revealed that 51 (42.2%) respondents had post secondary education in various fields such as marketing, accounting, business administration, economics, finance, etc, 43 (35.5%) had Masters degree, 20 (16.5%) had Secondary school leaving certificate, while 7(4.8%) of the respondents were holders of other certificates. So in terms of ability to understand and complete the instrument, the respondents in this category were also quite competent. The table indicates that most of the participants 50 (41.3%) were lower management staff while 32 or 26.4% and 39 (32.3%) of the participants were top and middle management staff respectively. The table showed that majority 48 (39.7%) of the respondents were in Purchasing department, followed by Quality control Department with 30(24.7%); and 29 (23.9%) for the Production; and the least being Store/Warehouse departments with 14 (11.7%). This was a true reflection of food and beverage firms in Nigeria as Store-build up and depletion have long been recognized as major factors in the fluctuation in the business activities of many companies.

HYPOTHESIS TESTING

Hypothesis 1

Materials management as purchased materials, work-in-proces materials and finished goods) will not influence profitability.

Table 2: Summary of ANOVA table showing influence of materials management on profitability.

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	[illegible]	3	[illegible]	50.437	0.00
Residuals	[illegible]	117	[illegible]		
Total	[illegible]	120			

R = .651 R2= .42 Adj R2= .515

It was shown in the table above that the joint influence of independent variables (Purchased Materials, Work-In-Process Materials and Finished Goods) on profitability of the company was significant (F(3,117) = 50.437, R = 0.651, R2 = .423, Adj R2= 0.515; P< .05). About 52% of the variation was accounted for by the independent variables. The hypothesis is therefore rejected because there is insufficient evidence to conclude that materials management (purchased materials, work-in-proces materials and finished goods) will not influence profitability. The result is line with the finding of Asaolu et al (2012) who reported that there was a significant increase in the profitability of Nigeria Bottling Company as a results of efficient management of materials. They suggested coordination among materials related departments in order to boost the performance and profitability of Food and Beverage firms. In a similar study conducted by Unam (2012), he found that efficient management of materials contributed to the business success of Nigerian Bottling Company. The author concluded that through efficient management of materials, a Food and Beverage firm can achieve significant cost saving, improvement in production efficiency, and increase in profitability.

Hypothesis Two

There is no significant relationship between materials management and profitability of the company.

Table 3: Summary of Pearson Correlation Coefficient table showing the significant relationship between Materials management and Profitability.

Variable	Mean	Std. Dev.	N	R	Sig.
Profitability	30.6667	3.2670	121	.713*	0.00
Materials management	11.7190	3.3263			

*Sig at .05 level

In the table above, it was observed that there was significant relationship between materials management and profitability of the company (r = .713**, N= 121, ? < .05). A high mean values of 30.6667 and 11.7190 confirmed the results. The hypothesis is rejected and alternate hypothesis accepted. This signifies that there is significant relationship between materials management and profitability of the company, meaning that materials management increase profitability. It can be concluded that effective and efficient materials management is very influential on profitability of the Nestle Nigeria Plc. The result is in agreement with the previous studies by Asaolu et al. (2012). Unam (2012). Gerald and Odhiambo (2012) and Ogbadu (2009). Unam (2012) found evidence of a positive significant relationship between efficient Materials Management and firm success in Nigeria. Ogbadu (2009) found that effective management of materials contributes a great deal to achieving business profit. Asaolu et al. (2012) also discovered that efficient Materials Management has contributed positively to the growth in profit of the Nigeria Bottling Company.

CONCLUSION AND RECOMMENDATIONS

Every organization that must continue to survive in its operating environment must be able to adequately manage its materials efficiently and effectively. Materials management has always been an area of scrutiny for organizations. This has become a central focal point as trends from the supply chain arena have indicated that substantial operating cash can be freed with leaner and more efficient handling of inventory. Managers in manufacturing organizations have to ensure that there is a continuous flow and optimum utilization of materials. As indicated in the previous studies of non-ubitiquos of findings, the paper also provided additional information on the significance of Materials management, and its influence on the profitability of a Food and Beverage company. The results of analysis conducted shows that there is a positive significant relationship between Materials management and profitability of firms. The paper revealed that Materials management influence the company's profitability and help achieve significant cost savings and improvement in production efficiency. There is an indication that Nestle Nigeria Plc is practicing professionalism in materials management which was reported to be more suited for large firms.

Based on the findings and owing to the huge resources companies spend on materials; much emphasis and attention should be given to materials management to enable firms achieve the best optimal cost structures and as such firms need to create departments dealing with materials function to enable easy control and monitoring costs. Furthermore, profitability is the ultimate determinant of a company's success. This should be handled with materials management. This enhances organizational productivity. Profitability in business organizations should be measured through materials management at all times. Consequently, materials management should be considered with bringing materials from outside of an organisation to the point of production.

CONTRIBUTION TO KNOWLEDGE

This work is a novel study in the food and beverages industry in Nigeria which has been overly neglected. The study is a prelude for industry strategy for vision 2020 and has succeeded in linking management parameters with industry expectations.

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