Global Journal of Finance and Business Review | *ISSN 1694-450X*
Published by AIR JOURNALS | *https://airjournal.org/gjfbr*
16/18 Avenue des Longaniers, Quatre Bornes, Mauritius
airjournals@gmail.com; enquiry@airjournal.org

RESEARCH ARTICLE

Materials Management and Profitability of Manufacturing Firms in Enugu Metropolis: Evidence from Nigerian Breweries Ama Enugu, Nigeria

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Citations - APA

Chukwu, C. U., Igwe, N. N. & Anichebe, N. A. (2023). Materials Management and Profitability of Manufacturing Firms in Enugu Metropolis: Evidence from Nigerian Breweries Ama Enugu, Nigeria. *Global Journal of Finance and Business Review, 6(3), 1-13. DOI: https://doi.org/10.5281/zenodo.8265295*

ABSTRACT

This study focused on materials management and profitability of manufacturing firms in Enugu metropolis: evidence from Nigeria Breweries Ama Enugu Nigeria. The study sought to ascertain what drives logistics management in materials and sales turnover, determine the relationship between materials management and level of profitability. The study had a population of 224 (two hundred and twenty four). The entire population was used since it was not large enough to be subjected to sample size determination. Instrument used for data collection was only questionnaire. 195 copies of the questionnaire were returned. However only 190 copies were properly filled and used representing 85 percent. Survey research design anchored on descriptive statistic was adopted. Hypotheses testing were done using ANOVA . Analysis of valiance at a significant level of five (5%) percent. Analysis was performed used the Statistical Package for Social Sciences (SPSS) version 20. The investigation revealed that effective utilization of materials management adds to the profitability level of the company. Consequently, it is recommended that efforts should be put in place a good logistics management in the plant as it has the potential to increase sales turnover. This can be achieved through a more robust corporate strategy.

Keywords: *Materials Management; Profitability; Manufacturing Firm; Logistics Management; Sales Turnover*

Introduction

Every organization invests a huge amount of capital on materials. In many cases, the cost of materials exceeds fifty percent of the total cost of goods produced. Such a large investment requires considerable planning and control so as to minimize wastages which invariably affects the performance and profitability of organizations. Materials are the lifeblood and heart of any manufacturing system. No industry can operate without them. They must be made available at the right price, quantity, quality, in the right place and at the right time in order to co-ordinate and schedule the production activities in an integrative way. Adamu (2020) reiterates that the profitability of any company will be greatly affected if the management of the company does not pay special attention to materials management in the company. This is because, materials are the life wire that holds the various components of manufacturing in any organization together and ensure that it will have all the necessary items needed to carry out day-to-day activities. Therefore, a manufacturing firm will remain shaky if materials are under stocked, overstocked or in any way poorly managed (Banjoko, 2009).

Globally, the concept of materials management connotes all operations management functions from purchasing of raw materials through the production processes to the final delivery of the end products. Okeke & Mbabuike (2020) noted that materials management is function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner in order to provide a pre decided service to the customer at a minimum cost. It brings together under one management responsibility for determining the manufacturing requirement, scheduling the manufacturing processes and procuring, storing and dispensing materials (Ondiek, 2009). Thus, Materials requirements planning (MRP), purchasing, procurement of materials, inventory management, storage, materials supply, transportation and materials handling are the activities of Materials Manager. Materials Management came to limelight at the advent of liberalization and globalization which posed intense competition on the business environment. Before that time, the concept was treated as a Cost Centre since Purchasing Department was spending money on materials while Store was holding huge inventory of materials, blocking money and space (Ramakrishna, 2005). With the process of liberalization, there has been a drastic change in the market which has forced manufacturing companies to devise strategies to minimize production costs in order to remain competitive. Since then, materials management has been recognized as a source of opportunities to reduce production costs and can be treated as a profit center. Materials are the major cost factor in an organization. It requires progressive follow up to keep the organization running without any interruption. This can be achieved only through effective material management (Ponnambily, 2019). Today, there are dramatic evolutions in the market environment and every organization must strive to keep itself in business. Major competition has shifted from the market to the production floor where manufacturing costs can be reduced and profitability boosted for firms to compete favourably. Backed by advanced technology, firms are closely monitoring their manufacturing costs and embarking on efficient management of materials (Ondiek, 2009). Ramakrishna (2005) emphasized the introduction of computers as a great boost to the adoption of Materials Management, as materials functions have many common databases. Therefore, efficient materials management is fundamental to the survival of business, industry and economy. A poor materials management system can bring about increases during production processes thereby cascading down the level of profits (Wanjogu, Iravo and Arani, 2015). Thus, a disruption or interruption to manufacturing due to topsy-turvy in materials management can lead to losses in profit, market share and brand reputation.

Previous studies such as Ogbadu, 2009; Nwosu, 2014 and Himanshu, 2020 had shown that materials account for more than fifty percent of the annual turnover in the manufacturing firms. This without any iota of doubt clearly proves that there is an urgent need to accord materials management the priority it deserves in order to achieve significant cost saving, improvement in production efficiency and increases in level of profitability and competitiveness. Unfortunately, there seems to be a paucity of empirical studies on the effect of materials management on profitability of manufacturing firms in this part of the country, Nigeria. This is the gap this study intends to fill.

Statement of the Problem

There is no gain saying the fact that good materials management is the backbone of the manufacturing process. It remains the solution to many critical challenges bedeviling the manufacturing sector in Nigeria today. The supply of adequate quality materials at the right quantity, with right price and on time is critical to manufacturing quality products which meets customer satisfaction. Good manufacturing practice reveals that avoidance of wastages on the production floor would inevitably control the cost of production. A major part of the materials management excellence is making sure that input materials and other accessory components going into the production floor meets international best practice system.

This system keeps production running smoothly with improvement in the overall finished products quality. Unfortunately, many manufacturing firms in Enugu metropolis in Nigeria have not given diligence to management of materials. This could be attributed to the lackadaisical attitude of ill-trained and ill-equipped personnel not conversant with globally accepted principle of managing materials and supply chain logistics knowledge in the affected firms.

Again, the challenges and consequences of inadequate knowledge in logistic management noticed amongst the personnel in these firms are enormous. These come in form of high costs, stolen materials, misplaced or mislabeled inventories which negatively affect the production processes. Ultimately, this could snowball into breakdown in production flow, out of stock syndrome and lack of essential components or spare parts. Over time this production hiccups could lead to organizational workforce downsizing, low tax revenue to the government of the federation and the ultimate fall in profitability, which ultimately over time leads to winding up the organization.

It is against this background that this paper investigated materials management and profitability of manufacturing firms in Enugu metropolis, evidence from Nigerian Breweries Plc Ama Ngwo in Enugu State Nigeria.

Objectives of the Study

The main objective of the study is to examine the effect of materials management on profitability of manufacturing firms in Enugu Metropolis. Other specific objectives are to:

1. Examine what drives logistics management in Materials and sales turnover in Nigerian Breweries Plc
2. Determine the relationship between materials management and level of profitability in Nigeria Breweries Plc

Research Questions

The following research questions guided the study:

i. What is the nature of logistics management in materials management and sales turnover in Nigeria Breweries Ama Enugu?.
ii. What is the relationship between materials management and level of profitability in Nigerian Breweries Plc Ama Enugu?

Hypotheses
The following hypotheses were formulated for the study:

1. H_O1**:** There is no relationship between drivers of logistics management in materials management and sales turnover in Nigeria Breweries Ama Enugu.
   H_A1: There is a relationship between drivers of logistics management in materials management and sales turnover in Nigeria Breweries Ama Enugu.
2. H_O2: There is no relationship between effective materials management and level of profitability in Nigeria Breweries Plc Ama Enugu.
   H_A2: There is a relationship between effective materials management and level of profitability in Nigerian Breweries Plc Ama Enugu.

Conceptual Framework

Concept of Materials Management

Materials are simply industrial goods that become part of another physical product. They represent the major component of business cost and profitability. Ramakrishna (2005) noted that, half the sales income in an organization is spent on materials. This implies that to boost a firm's profit, there is the need to reduce materials cost which leads to a reduction in manufacturing cost. In the cost structure of most of the products manufactured, materials constitute 50% of the total cost, pointing to the need for the proper budgeting and control on cost of materials which is a core objective of materials management.

The various types of materials to be managed in any organization include purchased materials, work-in-process (WIP) materials and finished goods (Banjoko, 2009). Ogbadu (2009) identified 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 to reduce the costs associated is referred to as Materials Management. An integrated approach to Materials Management defines it as "the function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a predetermined service to the customer at a minimum cost" (Ramakrishna, 2005). The scope of Materials Management includes decision on purchasing raw materials, staffing, inventories, stores and warehouse management, production levels, and distribution of finished goods at minimum cost in due time (Banjoko, 2009; Ogbadu, 2009).

Materials are the lifeblood and heart of any manufacturing system and no Organization can operate without them. They must be made available at the right price, at the right quantity, in the right quality in the right place and at the right time in order to co-ordinate and schedule the production activity in an integrative way for an industrial undertaking. A manufacturing firm will remain shaky if materials are under stocked, overstocked, or in any way poorly managed (Banjoko, 2009).

Cross (2019) views materials management as a means to optimize performance in meeting up with customer service requirements at the same time increasing profitability by minimizing costs and making the best utilization of available resources. Material management is defined as the process to provide accurate material at the exact place at right time in right quantity so as to minimize the cost of production. Material management is associated with the planning, identification, procuring, storage, receiving and distribution of materials. The responsibility of material management Department for the flow of materials from the time the material is ordered, received, and stored until they are used is the basic responsibility of material management. Materials Management is a means to optimize performance in meeting up with customer service requirements at the same time increasing profitability by minimizing costs and making the best utilization of available resources. Dagim (2018) states that materials management involves the task of coordination of the performance of the various materials function, the provision of communication networks, moving, storing and controlling materials in optimum manner so as to provide quality service at a minimum cost. The basic goal of materials management is to make sure that the right item is purchased and made available to the manufacturing operations at the right time, at the right place and at the minimum cost (Chase, Jacobs, & Aquilano, 2009).

According to Inyang & Basil (2013), materials management brings about the responsibility for deciding the manufacturing requirement that is setting up the manufacturing processes and purchasing, storing and dispensing materials. Dobler & Burt (2019), states that materials management provides an integral system approach to the proper arrangement of materials activities and the total material price. The goal is to enhance performance of materials systems, as opposed to sub-optimizing the performance of sub-individual operating units that are fragment of the material system. Chase, Jacobs, Aquilano, & Agarwal (2009) argued that the objectives of materials management is to make sure that the right item is at the right place, at the right time and at a manageable cost. The main objective of material management is to make sure that the materials are always available at their point of utilization when needed hence, efficient purchasing of material represents a key role in the accomplishment of the work. Three important phases that holds the key to a successful materials management are materials purchasing, materials usage, and storage.

Concept of Profitability in Manufacturing Firms

In determining the business success of a firm, profitability performs a crucial role. Profitability can be defined as the amount of money a firm can create with whatever resources the firm has (Sonko & Akinlabi, 2020). Stella and Gladson (2018) describe profitability as a degree to which a business or activity yields profits or financial gains, the ability of a business to earn profit. Therefore, profit represents the balance from sales revenue after all costs have been deducted. It is a controllable factor to the extent that management can control his revenue through price on one hand and through costs on the other hand (Ogbadu, 2009). Ramakrishna, (2005) remarked that profit can be obtained by deducting the manufacturing cost from the selling price (SP). He emphasized that in the current competitive market situation, the selling price is determined by the market forces and as such, profit can be ensured only by reducing the manufacturing cost which can be minimized through reduction in the materials cost. Materials cost constitutes about 60 percent of manufacturing cost. His analysis showed that materials cost as well as manufacturing cost of an organization is inversely proportional to its profitability. Materials cost is divided into unit price of materials and consumption for production.

Ramakrishna (2005) suggested ways in which Materials Management via Purchasing can help to minimize materials cost and increase profitability. They include obtaining materials at lower prices through development of new sources, effective price negotiations with vendors and using cost-price analysis to determine the right price for materials; managing taxes payable; reducing the cost of packaging; optimizing transportation costs; ensuring right materials' quality; and adopting import substitution. Also, Adeyemi and Salami (2010) posited that effective inventory management is a *sine qua non* for increased profitability in any manufacturing firm since about 70% of the total funds employed are tied up in current assets, of which inventory is the most significant component. They argued that inventory control enhances profitability by reducing costs associated with storage and handling of materials.

Proper management of inventory is reflected in a company's Return on Investment (ROI) which is calculated by:

$$ROI = \frac{Profit \times 100}{Capital\ employed}$$

ROI can be maximized by either reducing the material cost or reducing the current assets by way of inventory of materials or can be optimized by increasing profits and reducing capital employed (Ramakrishna, 2005; Linton, Klassen, & Jayaraman, 2007).

Theoretical Framework

Theory of Risk and Uncertainty Bearing on Profit

The theory of risk and uncertainty as propounded by F.H. Knight in 1956 states that profitability is a necessary reward of the entrepreneur for bearing risk and uncertainty in a dynamic economy. Profits arise only as a result of the future's nature of uncertainty; thus, entrepreneurs have to undertake the work of production under conditions of uncertainty (Dennis & Meredith, 2000). In advance they have to make estimates of the future conditions regarding demand for the product and other factors which affect price and costs. In view of their estimates and anticipations, they make contract with the suppliers of factors of production in advance at fixed rates of remuneration. They realize the value of output produced by the hired factors after it has been produced and sold in the market. But a good deal of time is spent in the process of producing and selling the product. But between the times of contracts and sale of output many changes may take place which may upset anticipations for good or for worse and thereby give rise to profits, positive and negative. Now if the conditions prevailing at the time of the sale of output could be known or predicted when the entrepreneurs enter into contractual relationships with the factors of production about their rates of remuneration, there would have been no uncertainty and, therefore, no profits (Dennis & Meredith, 2000). Thus uncertainty, that is, ignorance about the future conditions of demand and supply, is the cause of profits. It should be noted that positive profits accrue to those entrepreneurs who make correct estimate of the future or whose anticipations prove to be correct. Those whose anticipations prove to be incorrect will have to suffer losses (Kasim, Anumba, & Dainty, 2005).

Empirical Reviews

Materials Management in Manufacturing Organizations

Material management is used to reduce cost which invariably increases profitability and streamlines production process. Many researchers have analyzed different material management practices on profitability and these studies have exposed an enormous knowledge related to materials management and its effect on organizational profitability. This study examines the effect of materials management on organizational profitability: a study of Nigerian Brewery Enugu. Maria and Jones (2003) argue that implementation of proper materials management practice would result in high-quality products at relatively less cost. They further pointed out that it is essential to establish a daily ordering and frequent calculation of inventory turns. On the other hand, material management improves profitability by reducing costs involving storage and handling of materials. Material management is a means by which materials of the right quality and quantity are made available as when needed with due regards to the economy of shortages, ordering cost, purchase price and working capital. Cross (2019) agreed that there is a relationship between the effective management of materials and the level of profitability in an organization.

Adamu (2020) examined the effect of material management on the performance of Benue Brewery Industry, Nigeria. The result shows that inventory control system and stock valuation have a positive and significant effect on organizational performance. Lead time was negatively signed but the effect is statistically significant. The researcher concluded that when properly carried out planned material management can bring about efficiency at workplace. The study recommends that, management of the Benue Brewery should bring an improvement in the lead time as it will bring about acquiring and delivering the needed materials within the shortest time possible. But the researcher did not consider how material management can improve profitability but only focused on improvement in the lead time.

Findings from the study of Golas and Bieniasz (2016), empirical analysis of influence of inventory management on financial performance in the food industry in Poland, on the basis of regression models the improvement in the effectiveness of inventory management measured with the length of total inventory cycles and discrete cycles was found to be positively correlated with profitability. The estimated parameters of regression models indicate that in the food industry shortening inventory cycles usually resulted in higher profitability.

Orga and Mbah (2017) in their study, analyzing effect of inventory management practices on organizational performance of departmental stores in south-east, Nigeria; showed that inventory management has a positive effect on organizational growth of departmental stores in South East, Nigeria, inventory management system has a positive effect on profitability of departmental stores in South East, Nigeria and also the findings indicate that: there is significant relationship between efficient inventory management and Organizational effectiveness, inventory management had a significant effect on organizational productivity, there was a high positive correlation between efficient inventory management and Organizational profitability. The study concluded that inventory management is very vital to the success and growth of Organizations.

Kayiranga, Nyamweya & Shukla (2020) in their study, examined the contribution of material management practices on performance of construction of project. Both descriptive and correlation research designs were adopted where qualitative and quantitative approaches were applied. Furthermore, information was analysed using Statistical Package for Social Sciences version 21.0. Results evidenced a positive and significant correlation between material estimation cost and performance of construction project at Baraka Properties was 0.518. A positive and significant correlation of 0.884 was also obtained between procurement process and project performance. The results also indicated that the coefficient correlation between procurement process inventory control and project performance was 0.874. It was recommended that contractors should be careful with the problem areas that positively impact cost management, recruitment of qualified workers in managing and analysing costs.

Nwosu (2014) examines the impact of materials management on Nigeria Brewery firms. From Nigeria Breweries and Guiness Nigeria PLCs, sample size of 368 staff was selected to check the profitability of the firm. Z-statistics was applied for test of hypotheses and found that materials procurement, materials storage, materials inventory, interdepartmental collaboration have a significant effect on the profitability of brewing firms. Based on the above findings, the study therefore concludes that effective materials management is indispensable to brewing firms in making profits.

Methodology

Research Design

The study adopted a descriptive survey design. Descriptive survey design is utilized when collecting data about people's attitude, habit beliefs or any other social issues. The survey method was appropriate because it allowed the researchers to make informed decisions about the research outcome (Uzoagulu, 2011).

Population of the Study

The population of the study consists of departmental staff of Nigerian Breweries Plc who are directly involved in handling of materials in the organization. These departments were retail; logistics; warehouse and production. The total population of the staff involved in the study was two hundred and twenty four as at 16-06-21. This was obtained from the Human Resources Department of the organization (See table 1.0)

Table 1: Distribution of Departmental staff in Nigeria Breweries Ama Plant Enugu

S/No	*Departments*	*Number of staff*
1.	Retail	71
2.	Logistics	36
3.	Warehouse	45
4	Production	72
	Total	**224**

Source: Field survey, 2021

The researchers did not carry out sample size determination. The entire population was used because of its manageable size (Uzoagulu, 2011).

Instrument for the Study

The study used primary source of data through the administration of self-administered structured questionnaire. The questionnaire was accompanied by an introductory letter detailing the purpose of the study to the respondents. Respondents were told to select their answers guided by a Five –point Likert scale. Likert scale is a psychometric response scale utilized for this study. In questionnaire administration to obtain answers on a degree of agreement with a statement or set of statements. The questionnaire had two sections. Section A consisted of information on the bio-data of the respondents while Section B had information based on the study's research questions. The validity of the study was conducted through face and content validation. The questionnaire and research questions were given to educational experts in Godfrey Okoye University Enugu to check for weaknesses in the design and to ensure that it actually measured what it was supposed to measure. The reliability was measured numerically through the use of correlation formulas. This was done by calculating the Cronbach's Alpha for all the variables tested. The essence of Cronbach's Alpha was to determine the internal consistency or average correlation of items in a survey instrument to get its reliability.

Data Presentation and Analysis

This section involves data presentation and analysis. From the total population of the study of 224 respondents, a total of 224copies of questionnaire were distributed to the entire respondents, 195 were returned representing 87% of the entire population, 29 of the questionnaires were not returned amounting to 13% of the population, while 5ie

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2% of the returned questionnaire were poorly filled hence not usable. 190 usable copies of the questionnaire were used for this research representing 85% of the population as calculated in table 2.0. Therefore, the analysis was based on 190 copies of properly filled questionnaire.

Data Presentation and Analysis/Descriptive Statistics

Table 2: Return Rate of Questionnaire

S/N	*Description if questionnaire*	*Number returned*	*Percentage (%)*
1	Number of questionnaires distributed	224	-
2	Number of questionnaires returned	195	-
3	Number of questionnaires not returned	29	13%
4	Poorly filled questionnaire	5	2%
5	Usable questionnaire	190	85%
			100%

Source: Field Survey, 2022

Table 3: Sex distribution of the respondents

Response option	*Number of responses*	*Percentage (%)*
MALE	158	83.2%
FEMALE	32	16.8%
TOTAL	190	**100%**

Source: Field Survey, 2022

Table 3 indicates that Nigerian Brewery employ more males than female. It is evident in table 3.0, 158 of the respondents are male representing 83.2% while 32 of the respondents are female representing 16.8% of the respondents.

Table: 4: Educational Background/Qualification of the Respondents

Response option	*Number of responses*	*Percentage (%)*
WAEC/GCE/SSCE	-	-
ND	15	7.9
HND	30	15.8
B.Sc	45	23.7
MBA	34	17.9
M.Sc	40	21.1
OTHERS /ACCA/ACA	26	13.6
Total	**190 respondents**	**100 (%)**

Source: Field Survey, 2022

Table 4 shows the analysis of data on academic qualification of respondents. WAEC/GCE/SSCE holders were not considered in this study because the job meant for them were outsourced to other organizations as confirmed by Nigerian Brewery Human Resources, Nigerian Brewery has no need for such category of workers. ND were 15 represented 7.9% and HND were 30 representing 15.8%, B.Sc were 45 representing 23.7%, while MBA were 34 representing 17.9%, M.Sc were 40 representing 21.1% and Other/ ACCA/ACA were 26 represented 13.6.%.

Table 5: Length of work Experience

Response option	***Number of responses***	***Percentage (%)***
under 5 years	35	18.4
5-10 years	40	21.1
11-15 years	38	20.0
16-20 years	45	23.7
above 20 years	32	16.8
Total	**190**	**100 (%)**

Source: Field Survey, 2022

In table 5, the age categories distributed really showed that the ranges from under 5 years were 35 representing 18.4%, 5-10 years were fully completed and returned copies of questionnaire with number of 40 representing 21.1%, 11-15 years returned 38 representing 20.0% and 16-20 years returned 45 representing 23.7%, above 20 years returned 32 representing 16.8%.

Table 6: Responses from Departments in Charge of Materials

Response option	***Number of responses***	***Percentage (%)***
Retail	45	23.7
Logistics	31	16.3
Warehouse	42	22.1
Production	72	37.9
Total	**190**	**100 (%)**

Source: Field Survey, 2022

Departmental responses showed that retail was 45 representing 23.7%, 31were from logistics representing 16.3%, 42 respondents were from warehouse representing 22.1%, while production department were 72 representing 37.9%.

Table: 7: Distribution of Responses for Logistics Management and the Sales Turnover

S/N	*Questionnaire Items*	*SA (5)*	*A (4)*	*UD (3)*	*D (2)*	*SD (1)*	*Mean*
	Logistics Management						
1	My organization takes logistics very seriously.	77	91	10	7	5	4.2
2	We are always asked to improve on our logistic system.	76	83	19	5	7	4.1
	Sales Turnover						
3	Managing logistic properly increases sales turnover.	93	76	13	8	-	4.3
4	We make more sales and reduce waste when we manage logistics well.	109	73	6	2	-	4.5

Source: Field Survey, 2022

Table 7 showed the distribution of responses for logistics management and the sales turnover in Nigerian Brewery, Ama Plant 9th Mile. From the Table, it shows that all the questionnaire items are accepted as being true because their respective means are more than 3. This result indicates that Nigerian Brewery take logistics management seriously which increases their sales turnover. This is obvious in item 3 and 4 with respective mean of 4.3 and 4.5.

Test of Hypotheses

Hypothesis One
H_A1: There is a relationship between drivers of logistic management and sales turnover in Nigerian Brewery Ama plant.

Table 8: Correlation Analysis for Logistics Management and Sales Turnover

Correlations			
		LM	ST
LM	Pearson Correlation	1	.916**
	Sig. (2-tailed)		.000
	N	190	190
ST	Pearson Correlation	.916**	1
	Sig. (2-tailed)	.000	
	N	190	190
**. Correlation is significant at the 0.05 level (2-tailed).			

Source: Field Survey, 2022

Keys:
LM: Logistics Management
ST: Sales Turnover

Table 8 shows the correlations analysis between logistics management and sales turnover in Nigerian Brewery, Ama Plant 9^{th} Mile. The result revealed that there is a significant positive relationship (r = .916) between the variables as the p-value obtained is lesser than the .05 level of significant.

Decision Rule: Reject the Null Hypothesis if Sig. (P-value) ≤ .05
H_A1: There is a relationship between drivers of logistic management and sales turnover in Nigerian Brewery Ama plant.

Table 9: Distribution of Responses for Effective Procurement, Adequate Staffing, Optimal Production and Profitability

S/N	*Questionnaire Items*	*SA (5)*	*A (4)*	*UD (3)*	*D (2)*	*SD (1)*	*Mean*
	Materials Management						
1	Handling materials well is always on the top agenda of my	72	87	12	14	5	4.1
2	We do not take material management serious in my firm.	-	41	35	60	54	2.3
	Level of Profitability						
3	We increase our profit margin by handling materials properly.	72	98	13	7	-	4.2
4	The profit we make depends on effective procurement, adequate staffing, optimal production.	84	73	19	10	4	4.2

Source: Field Survey, 2022

Table 9 revealed the distribution of responses for adoption of effective materials management and profitability in Nigerian Brewery, Ama Plant 9^{th} Mile. From the Table, it confirms that all except questionnaire item 2 are accepted because they are greater than 3. The results validate that Nigerian Brewery takes material management seriously as confirmed by mean result of 4.1 and 4.2

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Hypothesis Two

H_A2: There is a relationship between effective materials management and level of profitability in manufacturing firms.

Table 10: Correlation Analysis for effective procurement, adequate staffing, optimal production and level of profitability

Correlations			
		MM	PROF
MM	Pearson Correlation	1	.942**
	Sig. (2-tailed)		.000
	N	190	190
PROF	Pearson Correlation	.942**	1
	Sig. (2-tailed)	.000	
	N	190	190
**. Correlation is significant at the 0.05 level (2-tailed).			

Source: Field Survey, 2022

Key:

MM: Material Management

Table 10 displays the correlation analysis between effective materials management and level of profitability in Nigerian Brewery, Ama Plant 9th Mile. The result discovered that there is a significant positive relationship (r = .942) between the variables as the p-value obtained is lesser than the .05 level of significant.

Decision Rule: Reject the Null Hypothesis if Sig. (P-value) ≤ .05

H_A3: There is a relationship between effective procurement, adequate staffing, optimal production and level of profitability in manufacturing firms.

Discussion of Findings

This study revealed that there is a positive relationship between drivers of logistics management and sales turnover in Nigerian Brewery Ama plant. This hypothesis was tested using ANOVA at a significant level of 0.05. It showed the correlation analysis between logistics management and sales turnover. The results give endorsement to research question that there is a significant positive relationship (r = .916) between the variables as the p-value obtained is lesser than the .05 level of significant. This study is in line with that of Karibo, (2019) who studied Logistics Management from Firms' Performance Perspective. Cross (2019) also collaborated with the assertion of Kariba (2019) in his own study. As shown by the result of the Pearson's Product Moment Correlation coefficient (r) is 0.916. This indicates a very strong positive relationship between logistics management and firm performance. This means that direct relationship exist between the two variables and further improvement in logistics management will result in the enhancement of performance.

The question for objective two was designed to determine the relationship between materials management and level of profitability in manufacturing firms. The tested hypothesis showed the correlations analysis between effective materials management and level of profitability in Nigerian Brewery. The result revealed that there is a significant positive relationship (r = 0.942) between the variables as the p-value obtained is lesser than the .05 level of significant. The result agrees with Nwosu (2014) whose study examines the impact of materials management on the profitability of Nigeria brewing firms. Nwosu (2014) was also collaborated with the research of Kayiranga, Nyamweya and Shukla (2020) in their study. They affirmed that procurement inventory control systems impact positively on materials management performance.

Findings

1. Logistics management had a significant positive relationship with sales turnover.
2. Effective procurement, adequate staffing, optimal production significantly and positively impacts on profitability of the sampled organization
3. Nigerian Breweries Plc Ama plant.

Conclusion

The study has proved that effective materials management is truly the life wire of manufacturing firms that are interested in market leadership through high sales in the sub-sector. Adherents to this good manufacturing practice through efficiency management of drivers of logistics in complex manufacturing organizations would go a long way in enhancing profitability through sales turnover. Again the study asserts that inclusion of the application of information and communication technology tools in materials management would help materials managers to fast track determination of inventory level, identify inventory in storage for speedy retrieval and pick up and even location of new suppliers anywhere in the world.

Recommendations

i. Efforts should be made to put in place logistics management in the production process as it has been found to improve sales turnover. This can be achieved through a more robust corporate strategy.
ii. Since effective materials management through good inventory control system impacts positively on profitability, the study recommends that there should be structures on ground that will eliminate wastages, pilferage and mislabeling of inventories. This could be realized through monitoring and adequate control of the staff in the production department.

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