

Inventory Management and Profitability of Food and Beverage Manufacturing Companies in Lagos State, Nigeria

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Abstract: Food and beverage manufacturing companies faced several challenges with regards to their daily operations. These challenges have continued to affect their performance in the form of low product quality, decline in sales, excessive inventory and low product turnover. Key challenge to the companies is poor inventory management and implementation. Inventory management is the backbone of many manufacturing companies around the world which when properly managed contributes immensely in improving firm performance. The food and beverage manufacturing companies in Nigeria however faces issue with regards to poor management and control of materials within the sector which contributes to its low performance. This study therefore examines the effect of inventory management on profitability of food and beverage manufacturing companies in Lagos State, Nigeria. A cross sectional survey research design was adopted. The target population comprised of 2027 top, middle and lower level managers within the selected food and beverage companies in Lagos State, Nigeria. Stratified random sampling technique was used for the study. A validated questionnaire was used. Cronbach's alpha coefficients for the constructs ranged from 0.702 to 0.955. Data was analysed using descriptive and inferential statistics. The findings revealed that inventory management had significant effect on profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria (Adj. $R^2 = 0.538$, $F(4, 351) = 104.185$, $p < 0.05$). The study concluded that inventory management affects profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria. The study thus recommended that proper inventory management techniques should be put in place by the companies in order to avoid delays, wastage and increase the overall profitability.

Keywords: Food and beverage, Inventory management, Profitability, Manufacturing companies, Nigeria

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I. Introduction

Manufacturing companies around the globe have encountered obstacles in their routine operations, this has mostly been observed especially in the area where companies are constantly dealing with tangible materials or inventories. The inadequate or lack of proper management of these inventories by firms are some of the reasons for the decline of performance of manufacturing companies. A lot of problems have been encountered all of which serves as a challenge to the performance of many manufacturing firms. Some of the challenges encountered by these firms range from low product turnover, excess inventory, failure keeping track of stock, poor service levels to difficulty in identifying demand.

Globally, the United States manufacturing industry is the largest in the world. It produces 18.2 percent of the world's goods which is believed to have been more than the economic output of Canada, Korea, or Mexico. However, the US leadership position is endangered by high operating costs which gives a competitive advantage to other countries. Unlike China, its low-cost companies produce about 17.6 percent of the global products (Amadeo, 2018). In mid-1970, China grew to become the world's 5th leading producer. The country moved from been 5th position to becoming number one in 2010, thereby replacing the U.S with a 20 percent of world's manufacturing output, Japan became third at 10 percent, and then followed by Germany at 7 percent, South Korea at 4 percent, and India at 3 percent.

In Africa, however, over the past decade and a half, the manufacturing sector has experienced rapid economic growth at an average annual rate of 5.5%. Nonetheless, in 2008, the share of manufacturing in GDP across the continent has deteriorated at around 10%. In total, African countries are regarded by their low levels of economic productivity. This is consistent with the export structures of these economies being dominated by basic commodities from mining and agriculture, as opposed to more complex manufactured goods. The African manufacturing industry today is still in a state of transformation with contemporary issues such as customer satisfaction, competitive advantage, revenue and expenditures, organizational culture, technological advancement, global markets, diverse customer demands and need for effective workforce with a global mind-set penetrating every aspect of the organisation (Nzioka, 2013). Africa's manufacturing sector has been

transformed over time, reflecting changes in national policies, varying domestic demand and the world market dynamics. Importance of the manufacturing sector to the national economies of the African countries has varied across different periods since independence, however, its contribution to the national income and its significance has been on an increase. Industrial structure, policy, output composition and magnitude have experienced notable changes over time in Africa region. Though manufacturing is usually a small sector in African economies, when considering share of total output or employment, growth of this sector has long been considered crucial for economic development (Kariithi&Kihara, 2017)

In the context of Kenya, its manufacturing sector grew at 3.5% in 2015 and 3.2% in 2014, contributing 10.3% to gross domestic product (GDP), while in South Africa, the manufacturing sector accounts for 14% of the country's economy as opposed to 20% in the 1994 (KNBS, 2016; South African Market Insights, 2019). Kairu (2015) asserts that, a decline in performance of the manufacturing sector resulted to a decline in the global GDP from 5% in 2010 to 3.08% in 2011 which was as a result of poor inventory control, reduced consumer effective demand, delays in fulfilling customer's order, keeping of large buffer inventories which consumes too much space and inappropriate technology due to poor strategies in managing inventories.

In Nigeria, the manufacturing sector's contribution to the nation's GDP accounts for 8.86% which remain stagnant from the year 2017 to 2018 period. Certainly, the challenges bordering on the inability to derive adequate raw materials from the agricultural sector with respect to movement of goods from the ports to factories continue to limit the performance of operations in the sector, in accurate forecasting, poor responsiveness to customer's need, and the lack of appropriate information technological system resulting to poor performance (Adekoya, 2019).

From 1982 to 1986, Nigeria's value added in manufacturing fell considerably partly because of inefficient resources allocation caused by distorted prices and prohibition of importation. In the early 1986 to 1988, the World Bank introduced structural adjustment program (SAP) in the economies that contributed to larger increase in manufacturing industry's GDP, which grew 8 percent in 1988. The non-interference of foreign exchange market was also numbered up to make manufacturing industries more competitive by increasing input costs (CBN, 2010). Regarding the manufacturing sector share in the GDP in previous years (1990-2010), it has not been quite stable. In 1990, it was about 5.5% while it drops to 2.22% in 2010. Also at the same period, the overall manufacturing capacity utilization grew from 40.3% in 1990 to 58.92% in 2010 (Eze &Ogiji, 2013).

Inventory management and control is a critical management concern for many companies, effective inventory management in supply chain is one of the critical factors for successful management and control of stock. Inventory plays a significant role in the growth and survival of an organization in the sense that ineffective and inefficient management of inventory will mean that the organization loses customers and sales decline. Careful management of inventory reduces depreciation, pilferage, and wastages while ensuring availability of the materials as at when required (Agu, Obi-Anike&Ozioma, 2016). Efficient inventory management system provides information to efficiently manage the flow of materials, effectively utilize people and equipment, coordinate internal activities and communicate with customers (Orga&Mbah, 2017). Anshur, Ahmed and Dhodi (2018), stated that inventory problems are likely to arise when inventories are not tracked correctly, wastefulness and extra cost of sum affect the overall operational performance of firms. Inventory management techniques such as inventory forecasting, inventory reorder point, information technology and inventory turnover are some of the techniques applied by inventory and warehouse managers in order to control and improve performance of organisations. Adeyeye, Ogunnaile, Amaihian, Olokundun and Inelo (2016) mentioned that, inventory control is the most vital function of inventory management and it forms the nerve centre in any organisation that manages inventory. It is a function that is very vital and significant to the performance of any kind of organisation.

The food and beverages firms in Nigeria are the major producers of consumer goods which sustain the life of humans. Scholars and practitioners regard this sector as the strongest in the manufacturing industry, it represents 22.5% of Nigeria's manufacturing sector and 66% of total consumer expenditure, and thus, food and beverages remain the largest sector in the industry (Stella &Gladson, 2018). Irrespective of the presence of various players within the sector, the food and beverage industry is a very competitive industry where the various manufacturers compete to develop similar alternative products for their various consumers. While some companies struggle to beat the competition so as to stay ahead in the competition, they also are pressured by the consumers and other manufacturers to lower their price which as well hinders the performance of most companies. Some of the challenges faced by these manufacturing companies ranges from lack of proper technology, seasonal crops, government regulations, decline in sales, over stocking and so on.

In order to improve the performance of the sector, adequate inventory forecasting techniques should be installed by firms constantly dealing with materials or inventories so as to maximize the sales growth of the companies. Many manufacturing companies tend to rely more on their instincts in determining whether a fresh order of inventory needs to be made which in most circumstance leads to delays before a new order is placed. To avoid such, implementing an inventory reorder point will help raise alarm that a next order needs to be made before the previous order is completed this aids in increasing the overall profitability of the firm. In addition,

adopting new information technology also minimizes the cost attached to inventories. If proper information technologies are adopted by firms the overall cost of the firm goes down thereby making the company become more cost effective in dealing with materials. A well-established inventory system attracts inventory turnover which in turn provides customer loyalty. The inventory turnover indicates how satisfied your customers are with your product which makes them become loyal to your product, brand or service. All this help to improve the strategic development of inventory management to avoid or reduce the problems related to inventory controls such as delay, excessive production, overstocking or high capital cost so as to boost the performance level of the sector.

Several studies have been done with regards to inventory management alongside with other variables, for instance, Doç and İbrahim (2016) studied the issue of inventory reorder point and replenishment point of dynamic inventory model under shortages; Castellano (2016) in his study concentrates on stochastic reorder point-Lot Size (r,Q) inventory model under maximum entropy principle; whereas Juan, Izar, and Raúl (2018) brings attention to the calculation of the reorder point for items with exponential and poisson distribution of lead time demand. Few research has been carried out to examine the relationship between inventory management and profitability of production and manufacturing firms as suggested by Rajab, Okwiri, Sebastian, and Yatundu (2017). Despite the positive overall outlook of the food and beverage manufacturing sector, it has somewhat been facing certain problems such as the multiplicity of tax and heavy duties collected which contributes in escalating price of raw materials order thus declining the profit. With current crisis in Nigeria, natural disasters such as flood, climate change and terrorist attack has also impacted the food and beverage companies negatively which resulted in food shortages. In addition, lack of infrastructural development such as modes of transportation for movement of goods, delays in receiving supplies and the high cost of transport which has also continue to serve as major problem for companies to connect with their suppliers. Due to these problems, Dangote Flour Mills Plc encountered a drop in its profit level from N15.13 million in 2017 to a loss of N1.16 billion in 2018, Cadbury Nigeria Plc faced similar drop in profit, from N299.99 million in 2017 to N823.09 million in 2018 and likewise Dangote Sugar refinery Plc encountered a drop in its profit from N39.78 billion to N21.98 billion in 2018 indicating 44.75% decline in profitability (Punch, 2019). Hence there is the need for an effective inventory reorder point system (Uko, 2018). It is based on the above problems that the effect of inventory management on profitability is being determined.

Problem Statement

The food and beverage industry in Nigeria is facing challenges in maintaining an effective customer loyalty, this is because most companies fail to keep proper inventory by maintaining optimum inventory and proper marketing to sell inventory, this problem tend to increase inventory holding cost which deteriorate a company in its operations. Proper management serves as an effective step in reducing cost of inventory through minimizing waste and storage cost thereby promoting efficient inventory turnover and an increase in customer loyalty. Low turnover of inventory in the sector is as well associated with stock out of inventory, weakness in advertising and marketing, loss of customers and obsolescence of materials (Moridipour& Mousavi, 2014). In comparing the financial statement of Cadbury Nigeria Plc to Nestle Nigeria Plc, it has been observed that the cost of goods sold by Cadbury Nigeria for the year 2018 was N 28,017,412 with an inventory worth of N 5,865,105 which when calculated gives an inventory turnover ratio of 4.78, which means a new order of inventory is placed approximately four to five times a year (Cadbury financial statement, 2018). While Nestle Nigeria Plc's cost of goods sold measured up to N152, 358, 445 and has an inventory worth of N23, 124,020 indicating an inventory turnover of 6.59 indicating a six to seven times of order being placed by the company every year (Nestle financial Statement, 2018). The low inventory turnover by Cadbury as compared to Nestles can be associated with poor sales, delays in purchase, buyers substituting with other brands or even leading to customers buying elsewhere resulting to customer disloyalty. It is therefore based on the above that the effect of inventory management on customer loyalty is been established. Based on these problems discussed and gaps identified, this study therefore examines the effect of inventory management on profitability of food and beverage manufacturing companies in Lagos State, Nigeria.

II. Literature Review

2.1 Inventory Management

Inventories are physical stocks of things that a manufacturing service keeps in hand for efficient running of its workplace or manufacturing activities. They consist of raw material, component parts, tools, spares, suppliers and finished goods (Mohopadkar& Patil, 2017). According to Atnafu and Balda (2018), inventory management can be defined as framework used in firms in controlling its interest in inventory. It includes the recording and observant of stock level, estimating future request, and settling on when and how to arrange (Atnafu&Balda, 2018). On the other hand, (Godana& Ngugi, 2014), stated that inventory management refers to all or any action involve in developing and handling the inventory levels of raw materials, semi-

finished materials and finished good so that sufficient supplies are available and the costs of over or under stocks are low. Inventories are essential for keeping the production wheels moving, keep the market going and the distribution system intact. They function as lubricants and mechanism for the production and distribution systems of organisations (Afolabi, Onifade, & Olumide, 2017). Managing inventories is vital for organisations for production activities, maintenance of machinery and plants as well as operational activities.

Inventory management is significant in the control of materials and products that have to be held (or stored) for later use in the case of production or later exchange activities in the case of services. Inventory management refers to a science based art of ensuring that just enough inventory stock is held by an organisation to meet demand (Naliaka&Namusonge, 2015). According to (Afolabi, Onifade& Olumide, 2017), the main objective of inventory management is to minimize the total cost of relevant costs to ensure profitable operations as well as maximize the customer service level. To be specific, the objective of inventory control include: to ensure adequate supply of products to customer and avoid shortages as far as possible; to make sure that the financial investment in inventories is minimum (i.e., to say that the working capital is blocked to the minimum possible extent); efficient purchasing, storing, consumption and accounting for materials is an important objective; to maintain timely record of inventories of all the items and to maintain the stock within the desired limits; to ensure timely action for replenishment; to provide a reserve stock for variations in lead times of delivery of materials; to provide a scientific base for both short-term and long-term planning of materials.

2.1.2 Profitability

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. The ultimate goal for any organisation is maximizing its profitability (Niresh&Velnampy, 2014). 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. In order words, profitability or profit is what is left of the revenue a business generates after it must have paid all expenses directly related to the generation of the revenue (Orga&Mbah, 2017).

Profitability is one of the most important objectives of financial management since one goal of financial management is to maximize the owners' wealth, and, profitability is very important determinant of performance. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to make sure the sustainability of the business in prevailing market conditions (Sivathaasan, Tharanika, Sinthuja&Hanitha, 2013). Profitability is a crucial measure of the performance of a firm and it constitutes a significant aspect of its financial reporting. It discloses a firm's ability and capacity to generate earnings at a rate of sales, level of assets and stock of capital in a specific period of time (Margaretha and Supartika, 2016).

2.2 Theoretical Review

2.2.1 Resource-Based View Theory

Introduced in the mid-1980s by Wernerfelt (1984), Rumelt (1984) and Barney (1986) the resource-based view (RBV) has become one of the most dominant existing approaches to the analysis of sustained competitive advantage. A central idea of the resource-based view is that firms compete on the basis of their resources and capabilities. The theory highlights the resources of a firm as the fundamental determinants of competitive advantage and performance. The resource-based view (RBV) adopts two vital assumptions in analysing sources of competitive advantage. Firstly, the theory assumes that firms within an industry or within a strategic group may be heterogeneous with respect to the bundle of resources that are have control over, and secondly, it also assumes that resources are heterogeneity may persist over time because the resources used to implement firms' strategies are not perfectly mobile across firms, in order words, some of the resources a firm control cannot be traded in factor markets and are difficult to accumulate and imitate. Uniqueness of resources is considered to be one of the conditions in achieving or contributing to a competitive advantage (Bridoux, 2004).

It is however pointed that, sustained competitive advantage is derived from the resources and capabilities a firm control, that are valuable, rare, imperfectly imitable, and not substitutable. These resources and capabilities can be viewed as bundles of tangible and intangible assets, including a firm's management skills, its organisational processes and routines, and the information and knowledge it controls (Barney, Wright & Kitchen, 2001). In the early stage of the RBV, the main concern was to identify the characteristics of resources that are not subject to imitation by competitors. If the resources possessed by a firm can easily be replicated by competitors, even though the resources are the source of competitive advantage of the firm, then the advantage will not last long (Akio, 2005).

2.2.2 Theory of Constraints

The theory of constraints was developed by Eli Goldratt in the mid-1980s. The theory of constraints evolved from the optimized production timetables (OPT) system and was later known under the commercial

name optimized production technology (OPT). By 1987, the overall concept became known as the theory of constraints (TOC) which Goldratt viewed as “an overall theory for running an organisation”. This refinement recognised that the main constraint in most organisations may not be physical but managerial-policy related. To address the policy constraints and effectively implement the process of on-going improvement, Goldratt developed a generic approach called the “thinking process” (TP), which is the current paradigm of theory of constraints (Rahman, 1998). The TOC philosophy assumes that any organisation or system has a small number of constraints which dominates the entire system. The analytic approach with TOC comes from the contention that any manageable system is limited in achieving more of its goals by a very small number of constraints, and that there is always at least one constraint. The theory adopts an idiom that, “A chain is no stronger than its weakest link” as a new management paradigm, which means that processes or organisations are vulnerable because the weakest person or part can always damage, break or adversely distress the outcome (Tulasi& Rao, 2012). The theory further defines a constraint as anything that limits an organisation’s high performance in terms of its goal.

The TOC views all operations systems as consisting of a set of interdependent processes where the output of one process is an input to another process or processes. The number and type of interdependencies that exist in a given plant will be a function of product varieties, production processes and a number of other factors. Constraints may be physical such as machine capacity, or management policies such as pricing. Organisational constraints can be addressed in five step process which are; identify the system’s constraint, decide how to exploit the system’s constraint, subordinate the rest of the system to the decisions made above, elevate the constraint and the final step, you go back to step 1 for improvement if the previous steps result in new constraints (Gupta & Boyd, 2008).

2.3 Empirical Review

Authors like (Etale&Bingilar, 2016) conducted a study to examine the effect of inventory cost and reorder point management on profitability of listed brewery companies in Nigeria. The result of the study revealed that efficient inventory cost management have positive influence on the profitability of brewery companies in Nigeria. The findings further showed that raw material cost, work in progress cost and finished goods cost (as components of inventory costs management) have significant positive relationship with the profitability of brewery companies in Nigeria. Thus it has revealed that efficient inventory costs management have positive effect on profitability. Prempeh, (2015) studied the impact of efficient inventory management on profitability: evidence from selected manufacturing firms in Ghana. The results of this study revealed that the main variable raw materials inventory management designed to capture the effect of efficient management of raw material inventory by a company on its profitability is significantly strong and positive and impacts on the profitability of the manufacturing firms in Ghana.

In addition, Onikoyi, Babafemi, Ojo, and Aje (2017) discovered in their study that there exists a positive relationship with between inventory reorder point, organisation growth and profitability. That is, profitability of cement firms increases when effective inventory management is carried out, as inventory consists of major current assets of the firm. The findings have far reaching implications for the inventory policies of the cement manufacturing firms on profitability. However, in the work of (Francis, Timbirimu, Kiizah&Olutayo, 2017) in exploring the effect of inventory management and organisational profitability at Gumutindo coffee cooperative enterprise limited, Uganda, the study showed that inventory management positively affected profitability of the organisation, and that the organisation had a satisfactory inventory management, and had inventory management guidelines which were communicated to staff to ensure effective inventory management that would minimize wastage, and costs to boost profitability.

Furthermore, 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, analysing effect of inventory management practices on organisational performance of departmental stores in south-east, Nigeria; showed that inventory management has a positive effect on organisational 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 organisational effectiveness, inventory management had a significant effect on organisational productivity, there was a high positive correlation between efficient inventory management and organisational profitability. The study concluded that inventory management is very vital to the success and growth of organisations.

2.4 Theoretical Framework

The underpinning theory of this study (theory of constraints) explains that every system has at least one constraints of if it were not true, then a real system such as profit making firms would be making unlimited amount of profit. So therefore, a constraint is anything that limits a system from achieving higher performance versus its goal. Instead of viewing constraints as negative, the theory of constraints views constraint as positive which represents opportunities for organisations to improve on it for a desirable performance (Rahman, 1998). The TOC focuses more on the constraints that a particular organisation faces, and thereby works on these negative constraints to improve on the performance which are likely to hinder the operation of the firm. While the resource based view theory focuses more on how firms’ can pursuit competitive advantage and gain superior performance with the use of the available resources which are of value and costly to copy. This in reality does not justify the competitiveness of most organisations with regards to the products or services they provide, as some of the resource a firm may acquire might be comparable to a competitive firm and may lead to similarities of products, this renders the concept of competitive advantage invalid.

2.4.1 Theoretical Model

The underpinning theory of the study is the Theory of Constraints (TOC) which tend to show the effect of inventory management on firm performance. A multiple regression model was adopted to model the relationship between the two variables by fitting a linear equation to observe the data. The theoretical regression models of the study are presented below.

IN= Inventory Management

FP= Firm Performance

IN= (INF, INRP, IT, INTO)

Where the independent sub-variables are as follows;

INF= Inventory Forecasting

INRP= Inventory Reorder Point

IT= Information Technology

INTO= Inventory Turnover

Dependent

P= Profitability

III. Methodology

3.1 Research Design

The research design adopted for this study is cross-sectional survey research design. Cross-sectional survey research design was appropriate because it involves collection of information from a given sample of population only once and at different location and at the same period of time. Cross sectional studies are generally fast, easy, and cheaper to conduct. They are often based on a questionnaire survey. Cross-sectional research design was adopted since it widely explains the connections between the variables of study and in use it there was no loss to follow-up because participants are interviewed only once. It was used to estimate the prevalence of an outcome of interest for a given population, providing a snapshot of the outcome and characteristics associated with it, at a specific point in time (Mahoro, 2013).

The population for this study consists of the food and beverage manufacturing companies in Lagos State, Nigeria. The food and beverage sector comprises of companies that are engaged in the production and manufacturing of final goods. In general, these are products classified for personal use, specifically intended for the mass market. The chosen companies for the study were selected from the list of companies on the Nigerian Stock Exchange (NSE). The target population is 2027 staff of the three selected companies in the food and beverage companies. The chosen companies for the study are Cadbury Nigeria Plc, Dangote Sugar Refinery Plc and Nestle Nigeria Plc.

The sampling unit comprises of all the staff levels within the companies which includes the following departments: inventory department, supply chain department and purchasing department. The sampling frame of the study constitutes of staff from the selected department within the companies (which are the inventory department, supply chain and purchasing department) these is simply because of their constant involvement with inventories either raw material, work-in-progress or finish good products of the companies.

Table 3.1 Summary Table of Population Distribution

Name of Company	Target Population
Cadbury Nigeria Plc	562
Nestle Nigeria Plc	771
Dangote Sugar Refinery Plc	694
Total Population Figure	2027

To determine the sample size of the study, the researcher applied the Taro Yamane method for sample size calculation to determine the sample size of the population. This was adopted for the study because it gives accurate and detailed result of the most suitable sample size. Adopting such method increases the level of confidence and precision level of the study thereby reducing the level of risk in determining an appropriate sample size required for a study. Applying the formula, the sample size arrived at is three hundred and thirty-four (334). Below is the illustration of the Yamane formula in determining the sample size of the study:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size

N = Finite population size which is 2027

e = Maximum acceptable error Margin which is 5% (0.05)

Confidence level = 95%

Therefore;

$$n = \frac{2027}{1 + 2027(0.05)^2}$$

$$n = \frac{2027}{1 + 2027(0.0025)}$$

$$n = \frac{2027}{1 + 5.0675}$$

$$n = \frac{2027}{6.0675}$$

$n = 334.07$ approximately 334

Allowing for 30% non-respondents

Sample size: $30/100 * 334 = 100.2$

Sample size: $100.2 + 334 = 434.2$ approximately 434.

IV. Results and Discussion

This section focuses on the interpretation of data collected on the study. It also discusses the findings with the emanated from the analysis.

Table 4.1 Regression Result of Effect of Inventory Management and Profitability

	<i>B</i>	<i>t</i>	<i>Sig.</i>	<i>Adj. R²</i>	<i>F(4, 351)</i>	<i>F(Sig.)</i>
(Constant)	-11.560	-4.556	0.000	0.538	104.185	0.000
Inventory turnover	0.542	7.703	0.000			
Inventory reorder point	-0.041	-0.759	0.448			
Inventory forecasting	0.800	6.910	0.000			
Information technology	0.085	1.040	0.299			

Source: Field Survey, 2020

The results in Table 4.1 shows the regression coefficients of inventory management techniques (Inventory turnover, Inventory reorder point, Inventory forecasting, and Information technology) on profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria. According to the results, the constant is -11.560, and inventory turnover, inventory reorder point, inventory forecasting and information technology had coefficients of 0.542, -0.041, 0.800 and 0.085 respectively. The results showed that inventory turnover ($B = 0.542$, $t = 7.703$, $p = 0.000$) and inventory forecasting ($B = 0.800$, $t = 6.910$, $p = 0.000$) had positive and effect on profitability. Thus, the higher the inventory turnover and inventory forecasting, the higher the profitability. The results also revealed that information technology had positive and insignificant effect on profitability of selected food and beverage manufacturing companies in Lagos State ($B = 0.085$, $t = 1.040$, $p = 0.000$). The regression analysis results revealed that inventory reorder point had a negative and insignificant effect on profitability ($B = -0.041$, $t = -0.759$, $p = 0.448$). Hence, the lower the reorder point, the lower the profitability of the selected food and beverage manufacturing companies in Lagos state, Nigeria.

V. Discussion

The study examines the effect of inventory management on profitability of food and beverage manufacturing companies in Lagos State, Nigeria. The results of the regression analysis for the effect of inventory management on profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria provided a weak but positive and significant effect on profitability. This results in consistent with the findings by Etale and Bingilar (2016) who examined the effect of inventory cost and reorder point management on profitability of listed brewery companies in Nigeria. The result of the study revealed that efficient inventory cost management have positive influence on the profitability of brewery companies in Nigeria. The findings further showed that raw material cost, work in progress cost and finished goods cost (as components of inventory costs management) have significant positive relationship with the profitability of brewery companies in Nigeria. Thus, it has revealed that efficient inventory costs management have positive effect on profitability.

Similarly, Prempeh, (2015) studied the impact of efficient inventory management on profitability: evidence from selected manufacturing firms in Ghana. The results of this study revealed that the main variable raw materials inventory management designed to capture the effect of efficient management of raw material inventory by a company on its profitability is significantly strong and positive and impacts on the profitability of the manufacturing firms in Ghana. Also, Francis, Timbirimu, Kiizah and Olutayo (2017) in exploring the effect of inventory management and organisational profitability at Gumutindo coffee cooperative enterprise limited, Uganda, the study showed that inventory management positively affected profitability of the organisation.

VI. Conclusion and Recommendation

This study examines the effect of inventory management and profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria. The study concluded that inventory management plays a vital role in enhancing profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria. This study examines the effect of inventory management and firm performance of selected food and beverage manufacturing companies in Lagos State, Nigeria. The study concluded that inventory management plays a vital role in enhancing firm performance of selected food and beverage manufacturing companies in Lagos State, Nigeria.

1. The findings of this study revealed that inventory management practices such as (inventory forecasting, inventory reorder point, information technology and inventory turnover) have significant effect on profitability of selected food and beverage manufacturing companies in Lagos State, Nigeria. The study recommends that management ensures that proper inventory control measures are put in place for a well establish warehouse system to avoid overstocking and increase profitability. Also, proper inventory management techniques should be put in place by the food and beverage manufacturing companies in order to avoid delays, wastage and increase the overall profitability. And finally, this study recommends that the production department of the selected companies ensures that costs of production are calculated in good terms so as to be more cost effective in their purchase of inventories.

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