INVENTORY MANAGEMENT TECHNIQUES PRACTICES AND OPERATING PERFORMANCE OF NIGERIAN MANUFACTURING QUOTED FIRMS

Olatunji Ibrahim & Adegbayibi Adesanmi Timothy

1Department of Accounting and Finance, Kings University, Ode-Omu, Osun State, Nigeria.

Abstract

The aim of this paper is to analyse the adoption, implementation level and problems associated with inventory management techniques practices among listed Nigerian manufacturing firms between 2004 and 2013. The study employed primary sources of data. Primary data were obtained through structured questionnaire administered to 50 manufacturing firms. Descriptive statistics were used to analyse the adoption, implementation level and problems associated with inventory management techniques practices.

From the finding of this study, the result revealed that the Nigerian manufacturing sector were well acquainted with virtually all the inventory management techniques but the implementation of certain techniques (Lean Inventory techniques, Vendor Managed Inventory) were yet to be fully put into practice among Nigerian listed manufacturing firms. Finally, the study recommends that the implementation of inventory management techniques practices will go a long way to reduce cost associated with keeping lump-sum which inadvertently increase running expenses and pose negative effect on financial report of manufacturing firms.

Keywords: Inventory Management Techniques Practices, Adoption and Implementation Level, Manufacturing Firms

A. Introduction

The challenges from the global competitors in the last two decades have prompted many organizations to adopt new manufacturing approaches (Zeng and Haya 1999). Paramount among the approaches is the concept of inventory management techniques (Womack and Jones 1996, Lee 1984, Armajit, Nahum and Neil 2010, Ellram 1996.) The manufacturing companies' worldwide have been forced to work out various strategies to face the challenges and cut down manufacturing cost to remain competitive, James (2012). The manufacturing sector plays an important role in the industrialization process and economic development of the world. Global economy development status, theoretically, is determined by the structural and sectorial contributions of the primary, secondary and tertiary sector to its output of goods and services, income and employment as well as magnitudes and trends of socio-economic development indicators. At any level of economic development, each of the three sectors is expected to be growing, though at a different pace, with none suffering serious decline, thereby hindering fluid process of economic development (Ayodele, 2003).

Many manufacturing industries have been under pressure to effect uninterrupted production, satisfy customers order, and meet the primary objective of being in business due to the inability to streamline their supply chain (Atkison, 2004). Inventory decisions are of interest to many functional and line manager in every organisation since these decisions may have direct impact on their departmental performance. Dominiak and Louderback, (1997) in their contribution to the issue of conflict of functional department in respect of inventory levels to be maintained noted that finance manager, sales manager and production manager have different view on the desirable inventory level. This conflict of inventory objective is always resolved with great difficulty in manufacturing environment.

There are also issues about management and control of inventory units and its related cost. Underutilization of human resources as a result of idle time and customers turndown caused by non-availability of materials to work with and finished goods to fulfill customers order respectively is now more often than not linked with poor inventory management not machine breakdown. Inventory management in the time past centered on not running out of finished products and this caused manufacturer to stockpile large amount of raw material, work in process and finished products. With this, capital that supposes to be utilized for other meaningful projects are tied down on piled up inventory (Akingunola and Sangosanya, 2011).
Although company probably can’t afford maintaining stock to fill unusual large sales of every stock items, that is why new techniques of satisfying customers order aside pile up mechanism is more necessary at this competitive economy era (Schreibfeder, 2012).

The term ‘inventory’ refers to the stockpile of production a firm is offering for sale and the components that make up the production (Chadda, 1971). Ghosh and Gupta, (1979) opined that inventories consist of raw materials, stores, spares, packing materials, coal, petroleum products, works-in-progress and finished products in stock either at the factory or deposits. It is most important component of current assets in the cement industry and was 42 per cent of total current assets for most manufacturing companies. In other industries too it is very important component of total investment. This definition posted a link between inventory as an asset and the return on total asset as a measure of profitability and this is line with Du- Pont chart.

The inventory means aggregate of those items of tangible personal property which are; held for sale in ordinary course of business, in process of production for such sales and are to be currently consumed in the production of goods or services to be available for sales. Inventories are expandable physical articles held for resale, for use in manufacturing a product or for consumption in carrying on business activity such as merchandise, goods purchased by the business which are ready for sale. Inventory refers to any scarce resources that remain idle in anticipation of satisfying a future demand for it. Looking at it from this angle, the term inventory covers not only the stock in various stages of production but include all human resources maintained to meet anticipated demand for its product. Star (1998), opined inventories as the stocking of any valuable things whether tangible or not, to meet future demand. By definition even currency can be regarded as inventory as it possesses value and tangible. Also an item like working capital, though not tangible, is an inventory since it has value and can be stocked to meet future demand. However, in this context inventory will be limited to raw materials, work-in-progress, finished goods, service part and supplies.

IAS (2.6), interpreted inventory to include assets held for sales in the ordinary course of business (finished stocks), assets in the production process for sales in the ordinary course of business (work in progress) and materials cum supplies consumed in production (raw materials). The short inventory may be defined as the material, which are either saleable in the market or usable directly or indirectly in the manufacturing process. It also includes the items which are ready for making finished goods in some other process or by comparing them either by the concern itself and/or by outside parties. In other words, the term inventory means the material having any one of the following characteristics; Saleable in the market, Directly saleable in the manufacturing process of the undertaking, and Ready to send to the outside parties for making usable and saleable productions out of it.

There are four basic components of inventory as identified in the literature as: Replenishment or cycle stock which involved the stock resulting from the ordering policies and is determined by the frequency of ordering and the quantity ordered. Safety or Buffer Stock the stock held for protection against the uncertainty of demand and, where applicable also of supply, Anticipation or Investment Stock as the stock procured in advance of requirement: e.g. schedules; planned requirements such as, product launches, promotions; seasonal demands; purchases to take advantage of market exploitation and Movement or Transit Stock as stock which is in transit between suppliers and customers and can be separately identified. The day to day control of inventory is through the management of the Stock-Time Curve to achieve the optimum cost and service equation.

Inventory Control System is the process of managing inventory in order to meet customer demand at the lowest possible cost and with a minimum of investment, (Byoungho, 2004). A preliminary step in the process of inventory control is to determine the approximate costs of ordering and holding inventory. According to Langabeer and Stoughton (2001), these costs include such expenses as storage costs, inventory risks, and the loss-of-opportunity costs associated with tying up capital. Zeng and Hayya (1999) described the major functions of inventory. Firstly, inventory is to support and provide necessary inputs for manufacturing. Secondly inventory protects companies against uncertainties that arise from such cases as
discrepancy between demand and production, machine deterioration, and human errors, among others. They further argue that regardless of the type of a firm, the management effectiveness of inventory decisions centers on three areas: cost, service level, and turnover ratio. This implies that inventory cost and turnover are very important in deciding the inventory management strategy of firms, inventory turnover ratio is a measure of how effectively inventories are being managed i.e the opportunities to earn profit from company investment on stock.

Levinson, (2005) quoted a retail historian, Robert Spector, that “a critical factor for manufacturers is that they have to have a good inventory system”. If the manufacturer does not have a good inventory system, they will not be able to forecast demands with any kind of accuracy. This might result in them running out of stock often. Inventory reduction is touted to be one of the key strategic levers to improve productivity and profitability of a firm in both theory and practice. Presently, firms are beginning to understand the need for efficient inventory management, not just at firm level, but across the entire supply chain to reap the benefits of good logistic system. The popularity of concepts like the bullwhip (the trend of larger and larger things in the inventory in response to changes in customers demand) and the rigorous measures being taken to reduce the bullwhip effect across the supply chain stem from the understanding of effective inventory management (Cachon and Fisher 2000).

In discrete industries like the manufacturing sector, where the cost of raw material account for almost 50-60% of the cost of the final product, inventory levels can have a significant impact on firm profitability. Therefore, managing effectively such element with this kind of cost percentage remain paramount to make industry more contributory to the nation’s economy and more relevant in the business world. The liberalization of markets across the globe has led to an increase in competition especially among the manufactured goods and services (Shafie, 2004). A research carried out by Sheila (2010) in Uganda shows that manufacturing firms such as Bata Shoe Company, East African Breweries (EABL), and British American Tobacco (BAT) have problem of inaccurate forecast mainly because they lack real time inventory information on customers demand. This might affect timely delivery, turnover rate, customers’ loyalty and inadvertently profitability.

Inventory management has significance for any enterprise in an inventory intensive manufacturing industry, because effective inventory management will enable an enterprise to minimize inventory cost on one hand and avoid the consequence of shortage of materials on the other. This assumes significance in the particular context of SMEs, because excess inventory and shortage of materials are often the two main problems found in SMEs regarding inventory management Eloranta and Raisanen, (1988). The maintenance of inventory means blocking of funds and so it involves the interest and opportunity cost to the firm. In many countries, especially in Japan great emphasis is placed on inventory management. Efforts are made to minimize the stock of inputs and outputs by proper planning and forecasting of demand of various inputs and producing only that much quantity which can be sold in the market. The primary objectives of inventory management are: to minimize the possibility of disruption in the production schedule of a firm for want of raw material, stock and spares, to keep down capital investment in inventories. Although it is essential to have necessary inventories excessive inventory is an idle resource of a concern, always avoid this situation. The investment in inventories should be just sufficient in the optimum level. The major dangers of excessive inventories are: the unnecessary tie up of the firm’s funds and loss of profit, excessive carrying cost, and the risk of liquidity. The excessive level of inventories consumes the funds of business, which cannot be used for any other purpose and thus involves an opportunity cost. The carrying cost, such as the cost of shortage, handling insurance, recording and inspection, are also increased in proportion to the volume of inventories. This cost will impair the concern profitability further. On the other hand, a low level of inventories may result in frequent interruptions in the production schedule resulting in under-utilization of capacity and lower sales. The aim of inventory management thus should be to avoid excessive inventory and inadequate inventory and to maintain adequate inventory for smooth running of the business operations.
Efforts should be made to place orders at the right time with the right source to purchase the right quantity at the right price and quality. The effective inventory management should maintain sufficient stock of raw material in the period of short supply and anticipate price changes; ensure a continuous supply of material to production department facilitating uninterrupted production; minimize the carrying cost and time; maintain sufficient stock of finished goods for smooth sales operations; ensure that materials are available for use in production and production services as and when required, ensure that finished goods are available for delivery to customers to fulfill orders, smooth sales operation and efficient customer service, minimize investment in inventories and minimize the carrying cost and time, protect the inventory against deterioration, obsolescence and unauthorized use, maintain sufficient stock of raw material in period of short supply and anticipate price changes and control investment in inventories and keep it at an optimum level.

The improvement of inventory management has two parts: the capability of the organization to manage inventory, and the way in which it chooses to do so. For example, a company may wish to install a complex inventory system, but unless there is a good understanding of the role of inventory and its parameters, and an effective business process to support that, the system cannot bring the necessary benefits to the organization in isolation. Managing assets of all kinds can be viewed as an inventory problem, for the same principles apply to cash and fixed assets. The tradeoff between ordering costs and holding costs characterizes the transactions approach to inventory management represented by EOQ models of inventory developed many decades ago (Koumanakos 2008.) In the recent years, as the field of operation management has developed, many new concepts have been added to the list of relevant inventory control topics (Timothy, Boniface and Galo, 2013).

Inventory management is required at different locations within a facility or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials or finished goods. The scope of inventory management also concerns the define lines between replenishment, lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods and demand forecasting. Balancing these competing requirements leads to optimal inventory levels, which is an on-going process as the business needs shift and react to the wider environment.

In determination of optimal corporate inventories, notwithstanding the theoretical and practical shortcomings inherent in these concepts and techniques, their application in real business life should have an effect on firm’s performance (Koh, Demirbag, Taltoglu and Zaim, 2007). Inventory management and control are crucial to a firm because mismanagement of inventory threatens a firm’s viability (Sprague and Wacker, 2006).

Profitability and liquidity are major issues that pondering and studying about must be considered as the most important tasks of each enterprise management (Peterback, 2002). Evaluating performance of companies has always been a matter of concern by stockholder, investors and financial creditors as well as customers whose survival mainly rely on the producer. Profitability means an enterprise is not malfunctioning and liquidity power is the sign of firms’ survival. Management of inventory as a key component that manufacturing firm cannot do without, demands techniques and strategies that will support the fulfillment of customers order and enhance the profitability level of firms.

The manufacturing companies’ worldwide have been forced to work out various strategies to face the challenges and cut down manufacturing cost to remain competitive, James (2012). The inventory management should no longer be viewed as a drain-pipe, but as a serious stabilizing and economic growth potential factor (Zeng and Haya 1999, Shafie 2004, Narkotey 2012). The challenge of productive inventory management is to support an upward trend in sales while keeping the investment on inventory at the lowest level consistent with customers order fulfilment. The ultimate objective of all manufacturing firms is to maximize profit through timely replenishment of raw materials and delivery of finished goods enhanced by uninterrupted production. Different techniques had been identified in theory but practicability of these theoretically identified techniques remain the questions of the day, hence
the needs to investigate the inventory management techniques majorly adopted in Nigeria manufacturing firms, problem encountered on such adoption and its effect on financial performance of listed manufacturing firms in Nigeria.

Studies that have been conducted on inventory management techniques and performance showed mixed results, most especially in foreign countries and few research work that has been done in Nigeria were authors such as James 2012; Lawrence 2013; Buliaminu 2014; Ashiork 2013; [Olowolaju 2013; Anichebe 2013; Enemuo and Uwazuruikke 2012; and Buliaminu 2014] but have not looked at inventory management techniques in its content such as the adoption, implementation level and problems associated with inventory management techniques practices. Hence, there is need to empirically analyse the adoption, implementation level and problems associated with inventory management techniques practices among listed Nigerian manufacturing firms. The objective of the study is to analyse the adoption, implementation level and problems associated with inventory management techniques practices in Nigeria. Apart from the above introductory section, the rest of this study has been divided into three sections. In section two, we discuss the literature review of the study. Section three discusses the methodology and results. The study is concluded in section four.

B. Literature Review on Inventory Management Techniques and Financial Performance

The literature is replete with studies on inventory management techniques and financial performance. Inventory management is very vital to the success and growth of manufacturing firms as the gross earnings increase depends on how best an organization can minimize cost at operation level. Inventory dominates operation activities of manufacturing sector, so manufacturing firms have much to earn adopting key inventory management techniques.

Koh, Deirbag, Bayraktar, Tatoglu and Zaim (2007) probed a more prominent issue regarding the underlying dimensions of Supply Chain Management (SCM) practices and to test a framework identifying the relationships among various SCM practices, operational performance and SCM related organizational performance. The survey study was conducted on SMEs in Turkey. The study brought out that both strategic collaboration and lean practices (SCLP) and outsourcing and multi suppliers (OMS) factors have direct positive and significant impact on operational performance of SMEs. However, the study found that both factors have no direct impact on SCM related organizational performance and only indirect and significant positive effect. Whereas, the observation by Teunter, Babai and Syntetos (2012) was that ABC analysis is commonly used as an inventory management practice in SMEs worldwide.

Enemuo and Uwazuruikke (2012) in their work evaluated the stock control practices and its contribution to effective management and sustainability in hospitality establishment using simple percentages to analyse the data generated through questionnaire. They concluded that practice of stock control which varies from ABC classification, economic order quantity, Forecasting, Just in time, Cycle counting, First in First out, Two bin system, Computerised system and safety stock has positive effect on the profit margin of the hospitality establishment in the study area. Abdulrasheed (2011), concentrated on small businesses and concluded that such category of business should address inventory issue more seriously because of their vulnerability to fluctuation in level of working capital. The variables utilised are profitability (dependent) and inventory value (independent) sourced from the books of selected small business located in Kwara state covering a period of 10years. In the work regression analysis is run on six small scale enterprises, using the data collected and the result shows that there is positive relationship between inventory level and profitability of small businesses.

Empirical findings by Magpayo (2009) using 110 Philippine firms randomly selected from 2009 list of business world’s top 1000 Philippine corporations to determine the effect of working capital management policy and financial leverage on financial performance. The variables measured are net income; Return On Equity (ROE) and Return On Assets (ROA) in terms of financial performance i.e. dependent variable and; working capital management policy (aggressive and conservative); and financial leverage management (debt ratio) as independent variables. Pearson rank correlations, ANOVA test and multiple regression analysis were performed. The result of the study shows that working capital management policy of firms,
their financial leverage and size have significant relationship with net income, ROE and ROA. While working capital management policy and firm’s size have positive effect on net income, financial leverage has a negative effect on net income and a weak positive effect on ROE.

Koumanakos (2008) in his study aimed at testing the hypothesis that efficient inventory management leads to an improvement in a firm’s financial performance. The results revealed that the higher the level of inventories preserved, departing from a lean manufacturing, by an enterprise the lower is its rate of returns having assessed medium to large Greek firms.

C. Methodology

The study employed primary sources of data. Primary data were sourced through the self-administration of structured questionnaire to 50 purposively selected manufacturing listed firms. The data were elicited from administered structured questionnaire to 150 inventory related personnel. The questionnaire which contained mainly close ended questions was validated through face, content and construct validity. The questions were framed in such a manner that they were easily understood and exactly conveyed their sense and purpose to the respondents. The questionnaire was also viewed in the light of the research objectives, its relevance, the adequacy of the questionnaire items, and question coverage. The data collected were analysed using descriptive statistics.

D. Discussion of Results

This section reveals the analysis of the adoption, implementation level and problems associated with inventory management techniques practices among listed Nigerian manufacturing firms. Out of the one hundred and fifty (150) copies of the questionnaire administered, one hundred and thirty five (135) were thoroughly filled and returned, giving a response rate of 90%. The analysis of this study was based on the retrieved copies of the questionnaire. More than fifteen inventory management techniques were raised in the questionnaire but just four which text shown to be uncommon were descriptively analysed to reveal the level of adoption and in addition to that, a technique (Heuristic technique) used as a control item in the questionnaire was equally analysed. Presentation and analysis of responses on inventory management techniques was based on five points Likert scale in the range of 1-5; where 1= almost never adopted, 2= rarely adopted, 3= the IMT occasionally adopted, 4= frequently adopted, and 5= the IMT almost always adopted.

JIT (Just In Time) was the IMT claimed to be mostly implemented as 25 (18.5%) of 135 respondents claimed to adopt the technique almost always, 103 which the analysis shown to be 76.3% of total respondents claimed to utilise the technique (JIT) frequently and 6 used it occasionally. While only one out of one hundred and thirty five of respondents said JIT was rarely used and none of the respondents subscribed to Almost Never. The second prominent IMT as the result of the analysis displayed was LIS (Lean Inventory techniques) which 119 (79.3%) respondents claimed to utilise it occasionally although just 6 (4.4%) and 3(2.2%) utilised LIT almost always and frequently respectively. This implies that the LIS is well known but yet to be put into practice consistently like JIT. Strategic Suppliers Partnership (SSP) which table 1 shown to be occasionally utilised by larger percentage of respondents (84.8%) was frequently adopted and almost always adopted by just six and five respondents respectively while no respondent claimed of almost never adopted scale. However, Vendor Managed Inventory (VMI) and Heuristics Techniques (HT) that table 1 shown to have the same direction of extremely low adoption purported different interpretation. More than 70% of 135 respondents claimed to rarely utilise HT (Heuristics technique) and this was due to the unsystematic approach in the technique as literatures revealed. However, the low adoption revealed through analysis of respondent’s choice of option on VMI was traced to neither being outdated nor unsystematic approach but the little knowledge about the technique as some managers interviewed claimed. VMI has not found its stay among Nigerian manufacturing firms despite its long existence in the literature. While only 4 respondents claimed to have in the past frequently adopted the technique more than 90% of respondents rarely implemented VMI in their organisations. JIT has the highest mean score of 4.18 with standard deviation of 0.519, while LIS and SSP were just 0.28 and 0.06 above the expected mean value of 3.00
respectively VMI was reported with 2.13 mean value.

Table 1: Frequency Distribution of the identified IMT adopted by listed Manufacturing firms in Nigeria.

<table>
<thead>
<tr>
<th>IMT</th>
<th>Almost always</th>
<th>Frequently</th>
<th>Occasionally</th>
<th>Rarely</th>
<th>Almost Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMI</td>
<td>3</td>
<td>2.2</td>
<td>4</td>
<td>3</td>
<td>2.2</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td></td>
<td>91.9</td>
<td>1</td>
<td>0.7</td>
<td></td>
<td>135</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>Mean</td>
<td>SD</td>
<td></td>
<td>2.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>Source: Field Survey, 2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JIT</td>
<td>25</td>
<td>18.5</td>
<td>103</td>
<td>76.3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.4</td>
<td>3</td>
<td>2.2</td>
<td>119</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>4.4</td>
<td>114</td>
<td>84.8</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>3.7</td>
<td>101</td>
<td>74.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>6</td>
<td>135</td>
<td>100</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>SD</td>
<td></td>
<td></td>
<td>1.44</td>
</tr>
</tbody>
</table>

Table 2: Coded Responses on problems hindering implementation of identified IMT among Listed Manufacturing firms in Nigeria

<table>
<thead>
<tr>
<th>Problems hindering implementation of IMT</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>The unpredictable demand pattern in Nigeria economy</td>
<td>122 90.4</td>
<td>13 9.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>135</td>
</tr>
<tr>
<td>Impossibility of real time inventory information exchange</td>
<td>121 90.3</td>
<td>14 9.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>135</td>
</tr>
<tr>
<td>Capital requirement and high administrative expenses</td>
<td>122 90.4</td>
<td>12 8.9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 .7</td>
</tr>
<tr>
<td>Transportation</td>
<td>115 85.2</td>
<td>16 11.9</td>
<td>1 .7</td>
<td>3 2.2</td>
<td>-</td>
<td>135</td>
</tr>
</tbody>
</table>
Table 2 presented the statistical result of problems hindering implementation of IMT on the five point scale of agreement (5 – 1) with the expected mean value 3 points. Any response with mean of 3.0 and above was regarded as having a concrete support of questionnaire item by the respondents (indicating positive), while mean value below 3.0 was interpreted as respondents’ non-compliance with the questionnaire item.

**Table 2: Statistic on problems hindering IMT in Nigeria.**

<table>
<thead>
<tr>
<th>MEASURES</th>
<th>No</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The unpredictable demand pattern in Nigeria economy</td>
<td>135</td>
<td>4.16</td>
<td>.575</td>
</tr>
<tr>
<td>Impossibility of real time inventory information exchange</td>
<td>135</td>
<td>3.97</td>
<td>.495</td>
</tr>
<tr>
<td>Capital requirement and high administrative expenses</td>
<td>135</td>
<td>3.94</td>
<td>.500</td>
</tr>
<tr>
<td>Transportation problem</td>
<td>135</td>
<td>4.18</td>
<td>.516</td>
</tr>
<tr>
<td>The long channel of distribution</td>
<td>135</td>
<td>3.13</td>
<td>.826</td>
</tr>
<tr>
<td>Human resources barrier as no profession is mainly on inventory management in Nigeria</td>
<td>135</td>
<td>3.57</td>
<td>.465</td>
</tr>
<tr>
<td>Poor logistic integration that allows priority treatment.</td>
<td>135</td>
<td>2.75</td>
<td>.643</td>
</tr>
<tr>
<td>Inadequate forecast, monitoring and control</td>
<td>135</td>
<td>3.85</td>
<td>.386</td>
</tr>
</tbody>
</table>

**Sources: Field Survey 2015**

The study analyses the adoption, implementation level and problems associated with inventory management techniques practices among listed manufacturing firms in Nigeria.
The result revealed that the Nigerian manufacturing sector were well acquainted with virtually all the inventory management techniques but the implementation of certain techniques (Lean Inventory techniques, Vendor Managed Inventory) were yet to be fully put into practice among Nigerian listed manufacturing firms. Although JIT was demonstrated to be almost always adopted but the high value of average inventory observed among listed firms in Nigeria via their financial statement contradicted this. The reasons for the low implementation was ascribed to poor transportation system, inconsistent demand pattern that made forecast difficult, human resource deficiency, channel of distribution, poor logistic integration and level of details required for planning above all communication problem. Competition is enough reason for management to go extra mile to look inwardly at various ways to satisfy her customers better at no extra cost. More could be done within the system to reduce cost than always looking for more financial aid. Cost minimization is almost a bed rock to profit maximization which remain the main objective of every business. The study recommends that implementation of inventory management techniques practices will go a long way to reduce cost associated with keeping lump-sum which inadvertently increase running expenses and pose negative effect on operating performance of manufacturing firms.

References


Loughrim, M (2008). Lean Thinking and Vendor Managed Inventory, A working paper University of Liverpool.

Mpwanya, M. F. (2005). Inventory Management as a Determinant for Improvement of Customer
Service. Department of Business Management Faculty of Economic and Management Sciences. University of Pretoria


Wolf, B. (2015). Manage Inventory to meet Profit Goals. IPA article, 4-5-2015, 11:34pm.