ISSN: 4811 - 2683
Volume 9, Number 2, 2022
International Journal of Innovations in Management and Development Studies

INVENTORY PLANNING AND ORGANIZATIONAL PERFORMANCE IN DRILLING FLUID AND CHEMICAL INDUSTRY LTD, RIVERS STATE

David Onwuchekwa, Ph.D
Department of Management, Faculty of Management Sciences
Ignatius Ajuru University of Education, Port Harcourt, Rivers State, Nigeria

ABSTRACT

This study assessed the relationship between inventory planning and organizational performance in Drilling Fluid and Chemical Industry Ltd. The study was conceptualized given the dimensions of inventory planning as forward weeks of supply, stock to sales and inventory turnover while organizational performance was measured in terms of productivity, profitability and customer satisfaction. Three (3) objectives, Three (3) research questions were raised and three (3) hypotheses guided the study. The study adopted a descriptive survey research design to assess the correlation between inventory planning and organizational performance. The population of the study was 791 employees of Drilling Fluid and Chemical Industry Ltd, where a sample size of 265 was drawn. Stratified random sampling method was used in selecting the respondents. A self-administered structured questionnaire was distributed to respondents. Mean Standard deviation and percentages were used to analyze responses from the questionnaire while Pearson's product momentum correlation coefficient was used to test all the hypotheses. For the data analysis, SPSS (23.0) was used. The findings of this research revealed that there is a statistically significant relationship between inventory planning and organizational performance in Drilling Fluid and Chemical Industry Ltd, the study thus, concludes that a significant relationship exist between inventory planning and organizational performance. Based on these findings a number of recommendations were made amongst which is the implementation of policies that will improve the Inventory Planning of in Drilling Fluid and Chemical Industry Ltd.

INTRODUCTION

Inventory planning has been referred to as excess inventory and inadequate management or shortage of inventory and adequate management practice. Several penalties could be apportioned to excesses in either direction. Inventory problem has escalated as progress in technology increases the ability of organizations to produce goods faster in multiple design variation and greater quality (Letinkaya & Lee, 2000). Since the mid-1980's inventory planning, production planning and scheduling has become the obvious strategic benefit (Ogbo, Onekanma & Ukpere, 2014)

Inventories are basically stocks of resources held for the purpose of future production and/or sales. Inventories may be viewed as an idle resource which has an economic value. Better management of inventories would release capital for use elsewhere productively, (Ghosh and kumar, 2003). Hence Inventory control implies the coordination of materials accessibility, controlling, utilization and procuring of material. The direction of activity with the purpose of getting the right inventory in the right place at the right time and in the right quantity is inventory control and it is directly linked to production function of any organization. This implies that profitability of any organization directly and indirectly is affected by the inventory planning system operated (Miller, 2010). Inventory of goods has many reasons why organization should maintain it.

It is economically unsound and physical impossible to have goods arrive in a system exactly when demands for them occur. Without stock at hand customers would have to wait for long period before their orders are fulfilled. Inventory planning is the control of materials used and stored in a company with the objective of providing exactly what is required where and when it is required employing a minimum of residual stock and thus incurring the least possible cost (Agha,2010). Hollander (2000) reveal that many organizations are integrating the inventory

system with the production system in an attempt to reduce the amount of idle inventory on hand. Inventory means stock at hand. It could be referred to an enterprise idle resource. Those item which are either stocked for sale or are in the manufacturing process or are in the form of materials which are yet to be utilized represents inventories. As stated earlier, a day-to-day practice in all field of human endeavour, households, manufacturing firms, servicing firms ect, is inventory control. Inventory control is the ability to supply goods and services at the right time with the right quality and quantity. It is a reliable means in which businesses are been managed to ensure customers are satisfied and organizations remain in operation via minimization of losses. A reliable inventory system implies higher confidence of customers and their attendant continuous patronage.

The planning and control of inventories are related activities are critical to the success of manufacturing firms like Drilling Fluid and Chemical industry ltd.. Managers of organizations have sought reliable and effective inventory practices and systems to remain competitive. Nsikan, Etim, and Ime (2015) assert that various organizations have employed the basic inventory planning techniques or inventory control methods to keep their inventory costs in check. The various inventory planning best practices that have been adopted by organizations include Forward week of supply (FWS), Stock to Sale Ratio (STSR), Inventory Turnover (IT), Vendor Managed Inventory (VMI), Collaborative Planning (CP), forecasting and replenishment, automatic replenishment, agile system, and material requirement planning and so on. However, some researchers have suggested that managers who turn to inventory research may find it to be of little significance (Boone, Craighead, & Hanna, 2008) or conclude that it has little to offer in terms of enhancing inventory practices (Wagner, 2002). This implies that a gap exists between inventory theory and practice in the manufacturing industry including that of Drilling Fluid and Chemical Industry Ltd, and the need to bridge the theory-practice gap is imperative.

Statement of Problem

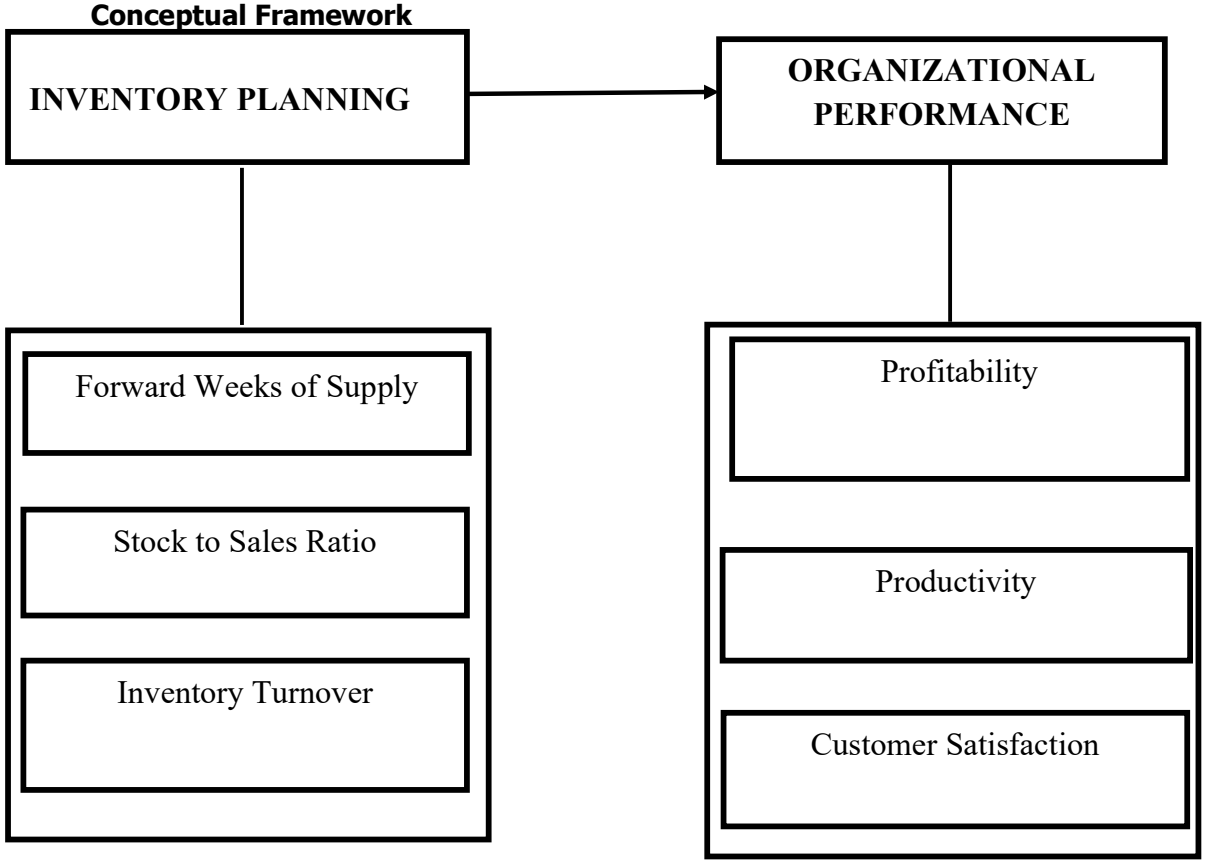
There are various perspectives to the problems of inventory planning by Nigerian manufacturing industry. According to Onuoha (2012), the Nigerian manufacturing industry's environments are problematic and harsh. There were high and unplanned inventories caused by lack of patronage and distress in aggregate demand. Also, there was high cost of funds arising from depreciation of the Naira against major currency coupled with high lending rates and extreme difficulties in accessing credit for working capital. The small working capital available to the majority of Nigerian manufacturing firms is managed by them to avoid operational embarrassments. Also, raw material inputs, mostly imported, are affected by unstable foreign exchange market and monetary policies of the government. Raw materials inventory is then affected by inadequate foreign exchange for importation, delays in clearing at the Nigerian ports, and poor transportation network. Atseye, Ugwu, and Takon, (2015) lamented that the problems facing the manufacturing industry have negatively affected the production runs of Nigerian firms and delivery of finished goods to customers. In addition, many factories have been either temporarily or completely shut down whilst many workers have lost their jobs.

The problem was further aggravated by the bottlenecks created by Nigerian capital and money markets with harsh requirements that could not be easily met by the companies that are at the verge of collapse. In a study carried out by Aro-Gordon and Gupte (2016), it was further gathered that the problems of inventory planning in the Nigerian manufacturing industry was attributed to the failure on the part of the top management officials, to give a deserved attention to the function of warehouses and stores as well as their inability to employ the services of a well-qualified store officers to take charge of inventory supervision and management. Adamu (2016) added that inventory planning has been a serious challenge to many business organizations in Nigeria. Therefore, inventory planning practices in Nigeria manufacturing industry deserves significant improvement, given the poor level of computerization, non-

determination of stock level, the involvement of illiterates and unskilled personnel in the management of inventory (Akindipe, 2014).

The studies on the relationship between inventory planning and organizational performance of Drilling Fluids and Chemical Industries ltd, focused majorly on the dimensions of inventory planning such as forward weeks of supply, stock to sale level and inventory turnover, associated with performance measures such as profitability, productivity and customer satisfaction. Also, despite several models (both deterministic and stochastic) that have been adopted in practice by manufacturing firms, an assessment of the effect of inventory planning in enhancing operational efficiency of Drilling Fluids and Chemical Industries ltd in Nigeria are currently lacking. Previous studies such as Adamu (2016), Ogbo and Ukpere (2014), Takim (2014) and so on, have related inventory planning with various aspects of organizational performance such as financial and economic performance, and most of these studies have focused on external inventory planning practices. Specific study exclusively on the effects of inventory planning practices on operational performance of flour milling companies in Nigeria by Nsikan et al (2015) did not basically use operational performance variables, rather used financial variables. Very limited studies have been carried out on internal inventory planning. It is therefore evident that knowledge gap exists on the specific relationship between internal inventory planning practices and operational performance. This study intends to bridge this gap by determining the relationship between inventory planning and operational performance of Drilling Fluids and Chemical Industry Ltd, Port Harcourt, Rivers State in Nigeria.

Conceptual Framework



Conceptual Framework showing dimensions and measures of Inventory Planning and Organizational Performance.

Source: Researcher's Conceptualization (2022).

Aim and Objectives of Study

The general objective of this study was to examine the relationship between inventory planning and performance of Drilling Ltd, Rivers State. The specific objectives are to:

1. Determine the effect of forward weeks of supply on profitability in Drilling Fluid and Chemical Industry Ltd, Rivers State. .
2. Examine the influence of stock to sales ration on the productivity in Drilling Fluid and Chemical Industry Ltd, Rivers State.
3. Assess the effect of inventory turnover on the customer satisfaction in Drilling Fluid and Chemical Industry Ltd, Rivers State.

Research Questions

Based on the stated objectives of the study, the following research questions become pertinent:

1. What is the effect of forward weeks of supply on profitability in Drilling Fluid and Chemical Industry Ltd, Rivers State?
2. How does stock to sales ration influence the productivity in Drilling Fluid and Chemical Industry Ltd, Rivers State?
3. What effect does inventory turnover have on customer satisfaction in Drilling Fluid and Chemical Industry Ltd, Rivers State?

Hypotheses

The study formulates the following null hypothesis:

H01: Forward weeks of supply has no significant relationship on profitability in Drilling Fluid and Chemical Industry Ltd, Rivers State,

H02: Stock to sales ration has no significant relationship on the productivity in Drilling Fluid and Chemical Industry Ltd, Rivers State.

H03: Inventory turnover has no significant relationship on customer satisfaction in Drilling Fluid and Chemical Industry Ltd, Rivers State.

Review of Related Literature

Inventory Planning

Inventory planning is defined as a science based art of ensuring that just enough inventory stock is held by an organization to meet demand (Coleman, 2000; Jay & Barry, 2006).). Inventory is the availability of any stock or resources used in an organization. An inventory system is the set of policies that controls and monitor inventory level and determine what level should be maintained, how large orders should be made and when stock should be replenished. Inventory control is the supervision of the storage, supply and accessibility of items to ensure an adequate supply without excessive oversupply (Miller, 2010).

Dimensions of Inventory Planning

Forward Weeks of Supply

Forward Weeks of Supply (FWOS) is superior for planning appropriate inventory levels in plans to the week level. Using FWOS allows a planner to think about their inventory across time and is essential to effectively managing inventory levels. The goal of effective inventory management is to have enough inventory on hand at any given time to support planned sales until the next delivery arrives. FWOS is calculated as the number of weeks of planned sales from the next week forward that the current inventory value represents. When FWOS is entered in a plan, it will calculate the ending period inventory (EOP) by counting the forward number of weeks of sales and summing the value to calculate the required ending inventory.

Stock to Sales Ratio

Stock to Sales Ratio (SSR) is ideal for planning appropriate inventory levels in plans to the month level. Stock to Sales Ratio forecasts how much inventory is required to achieve the projected sales. SSR represents proportion of merchandise on hand at the beginning of a period to the expected sales for that period. SSR is calculated by dividing stock at the beginning of the period by sales for the period. Stock to Sales Ratio is the most logical key performance measure to plan inventory values in a month level plan. SSR calculates inventory levels to meet planned sales, resulting in the potential for overstock situations to be diminished.

Inventory Turnover

A study by Andreou, Louca, and Panayides (2015) on "The Impact of Vertical Integration on Inventory Turnover and Operating Performance" using a causal model. The study revealed that vertical integration has a positive effect on raw materials inventory (RMI) and finished goods inventory (FGI) turnover but no significant effect on work in progress inventory (WIPI) turnover. FGI contributes to a reduction in supporting processes costs which causes an improvement in Return on Sales (ROS). Vertical integration impacts ROS directly.

Measures of Organizational Performance

Profitability

Every investor undertakes investment carefully with the motive of earning returns on his investment. One of the main objectives of a firm therefore is to make good profit. Profit backed up with cash will make it possible for management to distribute dividend to the investors (Kurawa, 2009). He further asserts that profitability can be best measured in terms of return on assets (ROA), return on earnings (ROE) and as well as return on capital employed (ROCE).

Productivity

Organizational productivity according to Dawson (2010) is a summary measure of the quantity and pleasant of labor overall performance, with sources utilization taken into consideration. It may be measured on the individual, organization, or organizations degree, productivity can be expressed as success into dimensions of groups performance, effectiveness and efficiency. Company has been collective so one can achieve organization or man or woman objectives. They are a of function the manner by using which goods and offerings are supplied beyond the bounds of any man or woman or small organization's capacity of self-sufficiency (Dawson, 2010). Productivity concerns each effectiveness and efficiency. According to Peter (2011) effectiveness is a minimum circumstance for survival after success has been accomplished. Performance is worried with doing things right and effectiveness is doing the proper matters.

Customer Satisfaction

Eckert (2007) researched on "Inventory planning and Its Effects on Customer Satisfaction". The study examined inventory planning and the role it plays in improving customer service levels. His finding revealed a positive relationship between inventory planning practices and customer satisfaction due to reduced number of stock-outs. The findings also revealed positive relationship between customer satisfaction and supplier partnerships, education and training of employees, and technology.

Namagembe, Munene, Muhwezi and Eyaa (2012) examined information sharing inventory planning and customer satisfaction. The case of manufacturing firms in Kampala. A sample of 523 respondents was taken composed of registered retailers and distributors, their findings established that information sharing inventory planning affect customers satisfaction more than inventory planning.

Theoretical Framework

Theory of Constraints

The theory of Constraints (TOC) is a management philosophy that seeks to growth production throughput performance or system overall performance measured by means of income through the identification of those techniques that are constraining the manufacturing device (Goldratt, 2004). Kazim (2008) argues that principle of constraints is based totally on the precept that a chain is only as sturdy as the weakest link or constraint and to raise and control the constraint as necessary. The difficulties in the concept of constraints are: very lengthy lead instances, large range of unfulfilled orders or they're completed with a whole lot extra attempt (overtimes), high stage of pointless inventories or loss of applicable inventories, incorrect materials order, massive quantity of emergency orders and excursion degrees, high tiers of devolution, loss of key clients engagement, common changes or absence of manipulate related to priority orders, which suggests on schedule conflicts of the sources (Goldratt, 2004).

Empirical review

Thogori and Gathenya (2014) study "Role of Inventory planning on Customer Satisfaction among the Manufacturing Firms in Kenya: A Case Study of Delmonte Kenya". The objective of the study is to determine the role of inventory levels, inventory costs and inventory lead times on customer satisfaction among the manufacturing firms in Kenya. The research was carried out at Delmonte Kenya because the company has a well laid down supply chain inventory information sharing system that is linked to the customers in real time to enhance inventory planning. The results indicate that delay in ordering had a strong significant negative relationship with customer satisfaction, customer loyalty, and repeat purchases. However, the finding revealed that delay in ordering had a strong significant positive relationship with customer dissatisfaction. The study also found out that inventory planning was hindered by long lead times which often lead to inventory delays in the organization.

Ngumi (2015) conducted a survey-based study entitled "Inventory planning Practices and Productivity of Large Manufacturing Firms in Narobi, Kenya". The study used primary data which was collected using questionnaire and data was analyzed using descriptive statistics including mean and standard deviation. The findings revealed that inventory planning Practices positively affect the productivity of large manufacturing firms in Narobi, Kenya. The findings also revealed that effective inventory planning has become a critical issue for firm's productivity. Also, the findings revealed that large manufacturing firms have saved millions of dollars in costs and decreased inventories while improving efficiency and customer satisfaction through inventory planning practices.

Adu-Fosu (2016) explored the relationship between Inventory planning and Productivity in Ghananian Manufacturing Industries. The study evaluated the relationship between Inventory planning Practices and productivity as Guinness Brewery Ltd. The findings revealed that no significant relationship exist between inventory planning practices at Guinness Brewery Ltd and productivity such that the inventory planning practices were not significantly related to productivity.

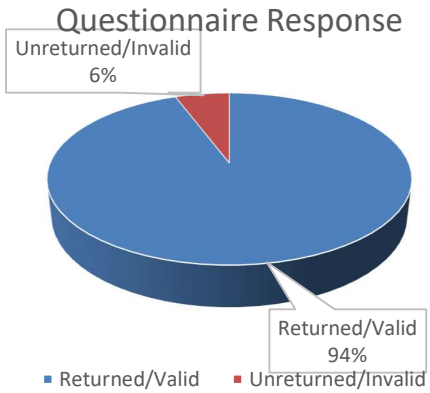
METHODOLOGY

This study adopted cross-sectional survey research design to investigate the relationship between inventory planning and organizational performance. This is because the data will be obtained through structured questionnaire.The populations of this study constituted all employees of Drilling Fluid and Chemical Industry Ltd. The target population therefore consists of seven hundred and ninety-one (791) employees in charge of inventory planning and policy of Drilling Fluid and Chemical Industry Ltd. The same sample size 265 obtained by Taro Yamene formula. The Cronbach's Coefficient was used to test for reliability and and alpha value of 0.7 was gotten.

Completely answered questionnaires will be sorted, coded and entered into a statistical package for social sciences (SPSS version 24) to aid in analysis of inferential statistics and descriptive statistics.

Questionnaire Response Rate

Out of the 265 questionnaires administered, 250 were validly returned and analyzed while 15 were either invalid or not returned. Therefore, the study had a response rate of 94.2%.



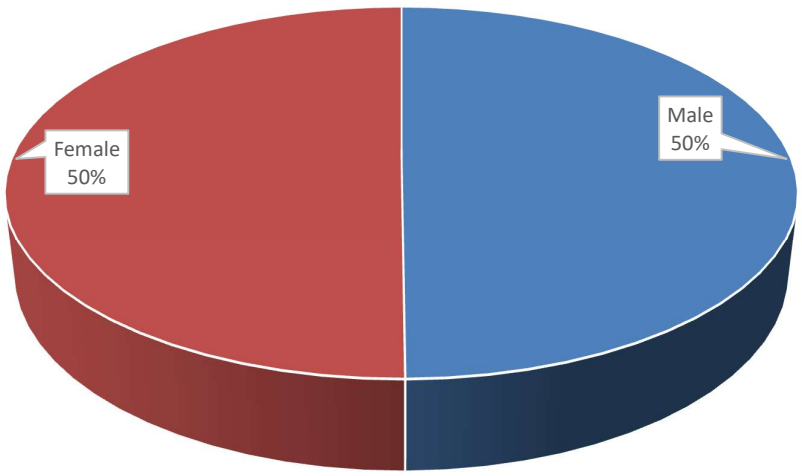
Questionnaire Response and validity

Demographic Characteristics of respondents

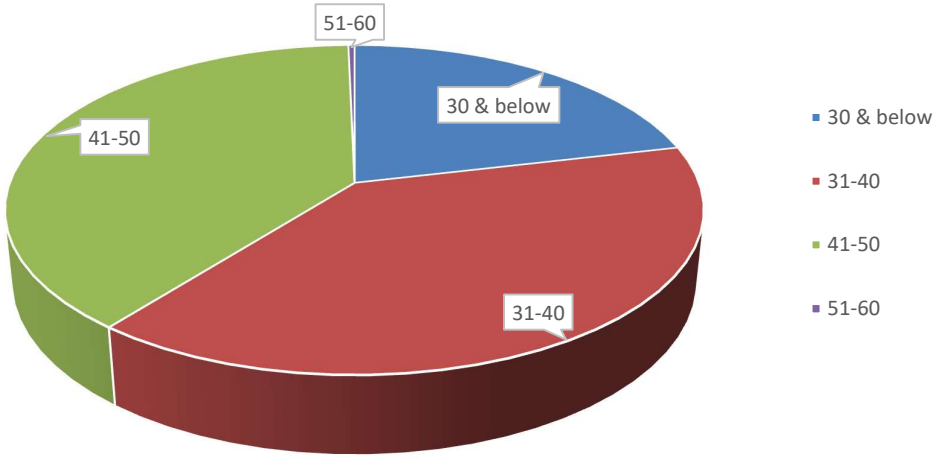
Variable	Frequency	Percentage
Gender		
Male	124	49.9
Female	125	50.1
Age		
30 & Below	46	18.5
31-40	85	34.1
41-50	85	33.8
51-60	34	13.6

Source: SPSS Output from Field Data (2022)

The table above, showed the demographic characteristics of the respondents. It showed that 49.9% of the respondents were male while 50.1% were female. This is further illustrated in the chart below:



The table also showed that 34.1% of the respondents falls in the age bracket of 31-40 years whereas 13.6% of the respondents are within age 51 and 60.

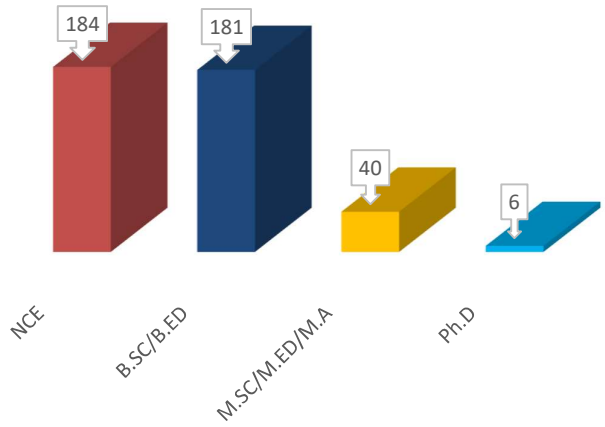


Age Distribution of Respondents

Demographic Characteristics of respondents		
Educational Qualification		
NCE	112	44.8
B.SC/B.ED	110	44.0
M.SC/M.ED/M.A	24	9.7
PHD	4	1.5
No. of years in Organization		
2 years & below	44	17.8
3-6 years	88	35.3
7-10years	81	32.4
Above 10years	37	14.6

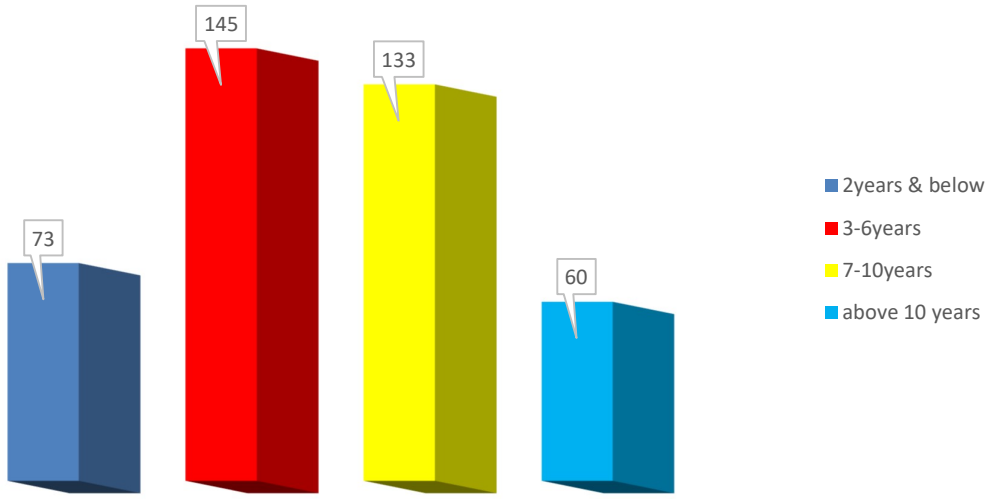
Source: SPSS Output from Field Data (2022)

The table above revealed that 44.8% of the respondents had NCE, 44.0% had B.Sc/B.Ed while 9.7% had M.Sc/M.Ed/M.A and 1.5% had PhD. This is further illustrated in the chart below:



Educational Attainment of Respondents

Also, the above table further presented the number of years the respondents have spent in their various organizations. It showed that 35.3% of the respondents had spent 3-6 years in their present job and 32.4% of the respondents had spent 7-10 years. Further illustration of this data is shown below:



Respondents' Years in Organization

Univariate Analysis

Descriptive measurement of Forward weeks of supply

S/N	Variables	N	Mean	Std. Deviation	Decision
1	We allow the planner to plan for the appropriate level of stock on a weekly level.	250	3.37	1.347	Accept
2	We help to link stock directly to the across time sales trend	250	3.44	1.366	Accept
3	Help to incorporate a statement of what should happen in case forward sales in the plans are not available	250	3.29	1.339	Accept
4	My organization meet up with target and are available	250	3.43	1.342	Accept
	Mean set		**3.37**	**1.158**	**Accept**

Source: SPSS Output from Field Data (2022)

The entries obtained in the table above showed the mean values $\bar{x}$= 3.37, 3.44, 3.29, 3.43 and 3.30 for item 1-5 respectively. These are all above the criterion mean hence, they are all accepted. Also, the table showed a mean set ($\bar{x}$) of 3.37 which indicated the presence of forward weeks of supply to a high extent.

Descriptive measurement of Stock to sales ratio

S/N	Variables	N	Mean	Std. Deviation	Decision
5	We help to minimizes the potential for an overstock situation	250	3.21	1.522	Accept
6	We help planner with guideline of what the annual stock turnover will be	250	3.02	1.360	Accept
7	Management gives moral support to employees	250	2.93	1.284	Accept

8	We give the most logical key performance measure to plan inventory values in a month level plan	250	3.13	1.405	Accept
	Mean Set		**3.08**	**1.094**	**Accept**

Source: SPSS Output from Field Data (2022)

The entries obtained in the table above showed the mean values x̄= 3.21, 3.02, 3.13 and 3.12 for item 6, 7, 9 and 10 respectively which are all above the criterion mean hence, they are all accepted. Whereas, item 8 had x̄= 2.93 which is slightly below the criterion mean. Also, the table showed a mean set (x̄) of 3.08 which indicated the presence of stock to sales ratio to high extent.

Descriptive measurement of Inventory turnover

S/N	Variables	N	Mean	Std. Deviation	Decision
9	Number of times the firm has sold off or used up its complete inventory	250	3.29	1.339	Accept
10	Number of days inventory is available in the store room	250	3.43	1.342	Accept
11	Strategies are employed to vary inventory speed	250	3.30	1.274	Accept
12	The overall rate of inventory turnover in the firm is	250	3.36	1.350	Accept
	Mean Set		**3.37**	**1.139**	**Accept**

Source: SPSS Output from Field Data (2022)

The entries obtained in the table above showed the mean values x̄= 3.29, 3.43, 3.30 3.36 and 3.43 for item 11-15 respectively which are all above the criterion mean hence, they are all accepted. Also, the table showed a mean set (x̄) of 3.37 which indicated the presence of Inventory turnover to a high extent.

Descriptive measurement of Profitability

S/N	Variables	N	Mean	Std. Deviation	Decision
13	My organization records high return on assets	250	3.45	1.195	Accept
14	My organization record high return on investment	250	3.56	1.306	Accept
15	My organization record high return on equity	250	3.43	1.236	Accept
16	My organization records high gross profit margin	250	3.67	1.219	Accept
	Mean Set		**3.48**	**1.008**	**Accept**

Source: SPSS Output from Field Data (2022)

The entries obtained in the table above showed the mean values x̄= 3.45, 3.56, 3.43, 3.67 and 3.27 for item 16-20 respectively which are all above the criterion mean hence, they are all accepted. Also, the table showed a mean set (x̄) of 3.48 which indicated the presence of profitability to a high extent.

Descriptive measurement of Productivity

S/N	Variables	N	Mean	Std. Deviation	Decision
17	In my organization, absenteeism is reduced to the minimum	250	3.56	1.313	Accept
18	Management provides employees with information they require to carry on with jobs	250	2.95	1.305	Reject
19	Management gives moral support to employees	250	2.78	1.257	Reject
20	Employees in my organization meet up with target and are productive	250	2.88	1.385	Reject
	Mean Set		**3.05**	**.977**	**Accept**

Source: SPSS Output from Field Data (2022)
The entries obtained in the table above showed the mean values $\bar{x}$= 3.56, 2.95, 2.78, 2.88 and 3.09 for item 21-25 respectively. Although only item 21 and 25 had means that are above the criterion mean, however, the table showed a mean set ($\bar{x}$) of 3.05 which indicated the presence of productivity to a high extent.

Descriptive measurement of Customer Satisfaction

S/N	Variables	N	Mean	Std. Deviation	Decision
21	Our customers are retained after doing business with us.	250	3.42	1.423	Accept
22	Our customers are very loyal to the organization.	250	3.01	1.347	Reject
23	Customers of our organization keep increasing.	250	2.91	1.289	Reject
24	We satisfy our customers a lot.	250	3.14	1.413	Reject
	Mean Set		**3.20**	**1.017**	**Accept**

Source: SPSS Output from Field Data (2022)
The entries obtained in the table above showed the mean values $\bar{x}$= 3.42, 3.01, 3.14 and 3.52 for item 26, 27, 29 and 30 respectively. Which are all above the criterion mean Item 28 had $\bar{x}$= 2.91 which is slightly below the criterion mean. Also, the table showed a mean set ($\bar{x}$) of 3.20 which indicated the presence of Customer Satisfaction to a high extent.

Bivariate Analysis
The bivariate analysis was used to examine the relationships between the dependent and independent variables as earlier operationalized and hypothesized as follows:
This section seeks to determine the extent to which Forward weeks of supply correlates with the measures profitability of Drilling Fluid and Chemical Industry Ltd.
H_{o1}: There is no significant relationship between Forward weeks of supply and profitability of Drilling Fluid and Chemical Industry Ltd.

Analysis of Relationship Between Forward weeks of supply and Profitability

		Forward weeks of supply	Profitability
Transactional	Rho	1.000	.210**
	Sig.	.	.000
	Mean	3.37	3.48
	N	250	250
Decision			Reject H_{o1}

Source: SPSS Output from Field Data (2022)
The table above showed that Forward weeks of supply when compared against various measures of profitability yielded rho value of 0.210. The result showed that Forward weeks of supply has a low positive relationship with profitability.
Also, a p-value <0.05 depicts a significant relationship, therefore, the null hypotheses H_{o1} was rejected and alternatively restated as follows:
H_{a1}: There is a significant relationship between Forward weeks of supply and profitability in Drilling Fluid and Industry Ltd.

HYPOTHESIS 2:

This section seeks to determine the extent to which Stock to sales ratio correlates productivity of Drilling Fluid and Industry Ltd.

H_{o2}: There is no significant relationship between Stock to sales ratio and productivity of Drilling Fluid and Industry Ltd.

Analysis of Relationship Between Stock to sales ratio and productivity

		Stock to sales ratio	Productivity
Hybrid	Rho	1.000	.346**
	Sig.	.	.000
	Mean	3.36	3.05
	N	250	250
Decision		Reject H_{o2}	

The table above showed that Stock to sales ratio when compared against productivity yielded rho value of 0.346. The result showed that stock to sales ratio has a positively low relationship with productivity. Also, the p-value <0.05 depicts a significant relationship. Based on this result, the null hypotheses H_{o2} was rejected and alternatively restated as follows:

H_{a2}: There is a significant relationship between Stock to sales ratio and productivity of Drilling Fluid and Industry Ltd.

HYPOTHESIS 3:

This section seeks to determine the extent to which inventory turnover correlates customer satisfaction in Drilling Fluid and Chemical Industry Ltd.

H_{o3}: There is no significant relationship between Inventory turnover and Customer Satisfaction of Drilling Fluid and Chemical Industry Ltd.

Analysis of Relationship between Inventory turnover and Customer Satisfaction.

		Inventory turnover	Customer Satisfaction
Relational	Rho	1.000	.162**
	Sig.	.	.000
	Mean	3.08	3.20
	N	250	250
Decision		Reject H_{o6}	

Source: SPSS Output from Field Data (2022)

The table above showed that Inventory turnover when compared against Customer Satisfaction yielded rho value of 0.162. The result showed that Inventory turnover has a low positive relationship with Customer Satisfaction.

Also, these rho value showed a p-value <0.05. Based on this result, the null hypotheses H_{o3} was rejected and alternatively restated as follows:

H_{a3}: There is a significant relationship between Inventory turnover and customer satisfaction in Drilling Fluid and Chemical Industry Ltd.

Discussion of Findings

The research investigated the inventory planning dimensions and organizational performance among of Drilling Fluid and Chemical Industry Ltd. It found that there is a moderate existence of all dimensions and measures of both dependent and independent variables. This is evident by the emergent mean values that are all above the criterion mean. These variables were used as indices in measuring the relationship between the predictor and outcome variables by cross correlating the variables.The study investigated the extent of association between Forward weeks of supply and profitability. The result of the study revealed a statistically significant relationship between the predictor and independent variables. The result further revealed that

the existence Forward weeks of supply will positively increase profitability in Drilling Fluid and Chemical Industry Ltd

The study also investigated the extent of association between Stock to sales ratio and productivity. The result of the study revealed a statistically significant relationship between the predictor and independent variables. The result further revealed that the existence Stock to sales ratio will significantly reduce profitability among Drilling Fluid and Chemical Industry Ltd. Hence, it was revealed that Stock to sales ratio statistically predicts profitability which implied that the presence of Stock to sales ratio will negatively influence profitability among Drilling Fluid and Chemical Industry Ltd.

More so, the study investigated the extent of association between inventory turnover and customer satisfaction. The result of the study revealed a statistically significant positive relationship between the dependent and independent variables. The result further revealed that the existence Inventory turnover will significantly increase customer satisfaction among Drilling Fluids and Chemical Industries.

CONCLUSION

It was concluded based on empirical results suggest that inventory planning have a statistically significant relationship with organizational performance. Moreover, the empirical evidence showed that the association between Stock to sales ratio and productivity is progressive. On the whole, the findings from this study suggest that organizations can increase the average level of performance by evaluating and improve on their inventory planning. This study further supported that the type of inventory planning an organization may adopt can influence the degree to which its performance improves.

RECOMMENDATIONS

Based on the findings from this study, the following recommendations are put made:

1. Management should make policies that will improve on the existing inventory planning types in the Drilling Fluid and Chemical Industry Ltd. This will in return influence the profitability.
2. Drilling Fluid and Chemical Industry Ltd should embrace efficient inventory management practices that could ensure optimal investment in inventories as strategy for gaining competitive advantage over competitors
3. Drilling Fluid and chemical Industry Ltd should adopt more modern sophisticated techniques such as the forward weeks of supply, stock to sales ratio and inventory turnover, and so on in their operations to ensure control of inventory so as to obtain cost efficiency and effectiveness
4. That management should implement policies that will improve inventory planning in Drilling Fluid and Chemical Industry Ltd Port Harcourt.

REFERENCE

Agha, N. C. (2010). Inventory management and cost control in manufacturing industries in Nigeria. *The Nigeria Journal of Management Research, 5*(2), 173-188.

Arnold, D. (2000). Seven rules of international distribution. *Harvard Business Review, 78*(6), 11-21.

Benedict, C. & Margeridis, H. (1999). Chain reaction. *Charter*, *70*(2), 464-479.

Benedict, C. & Margeridis, H. (1999). Chain Reaction. *Charter*, *70*(2), 464-479.

Caplice, C. and Sheffi, V. (1994). A review and evaluation of logistic metrics. *The International Journal of Logistics Management, 5*(2), 23-37.

Coleman, B. (2000). Determining the correct service level target. *Production and Inventory Management Journal*, *41*(1),169-176.

Coleman, B. (2000). Determining the correct service level target. *Production and Inventory Management Journal, 41*(1), 169-176.

Colling, D. (1990). *Industrial Safety: Management and technology*. Englewood Cliffs, NY: Prentice Hall.

Dervitsiotos, K. N. (1981), *Operations management*. New York: McGraw-Hill.

Elsevier North-Holland. Upton, D. (1994). The Management of Manufacturing Flexibility. *California Management Review*, 36(1), 180-190.

Ghosh A. K. & Kumar, P. (2003). *Production management*. New Delhi: Anmol Publication Pvt. Ltd.

Holander, T. (2000). *Accounting information technique and business solutions*. London: McGraw-Hill.

Inyama, B. J. (2006). *Management theory: Principle and practices*, New York: Harcourt Branch Jovanovich Publishers.

Jay, H., & Barry, R. (2006). *Principles of operations management*. 6th Edition. New Jersey; Pearson Prentice Hall, Eduation Inc.

Jay, H., & Barry, R. (2006). *Principles of operations management*. 6th Edition. New Jersey; Pearson Prentice Hall, Eduation Inc.

Jossop, D. (1986). *Storage and control stock*. London: Pitman.

Kotler, P. (2002). *Marketing management*. 2nd Edition. New Delhi: Prentice Hill.

Kuku, G. (2004). Effectiveness of Ventor-Managed Inventory in the Electronics Industry: Determinants and Outcomes. *Information and management, 41*(5), 365-472.

Miller, R. (2010). *Inventors control: Theory and practice*. New Jersey: Prentice Hall.

Peterson, R. & Silver, E. (1998). *Decision systems for inventory management and production planning*. New York: John Wiley and Sons.

Potilen, T. & Goldsby, T. (2003). Vendor-Managed inventory and supplier-managed inventory programs: how economic value added can help sell the change. *International Journal of Physical Distribution and Logistics Management, 33*(7), 689-707.

Rosenablatt, B.S. (1997). *Modern business- a system approach*. (2nd edition.) Boston: Houghton Muffin Co.

Smaros S. J., Lehtonen, J. M. Appelquist, P. & Holmstrom, J. (2003). The impact of increasing demand visibility on production and inventory control efficiency, *International Journal of Physical Distribution and Logistics, 33*(4), 445-465.

Smaros S. J., Lehtonen, J. M. Appelquist, P. & Holmstrom, J. (2003). The impact of increasing demand visibility on production and inventory control efficiency, *International Journal of Physical Distribution and Logistics, 33*(4), 445-465.

Stock J.R. & Lambert, D.M. (2001). *Strategic logistic management*. New York: McGraw-Hill.

Tersine, R. J. (1994). *Principles of inventory and materials management*, 4th ed. New York:

Vickery, S. Calutone, R. & Droge, C. (1999). Supply Chain Flexibility: An Empirical Study. *Journal of Supply Chain Management, 35*(3): 71-83.

Walter, M. Johnson, E. & Davis, T. (1999). Vendor Managed Inventory in the Retail Supply Chain. *Journal of Business Logistics, 20*(1), 479-498.

Zhang, Q. Vonderembse, M. A. & Lom, J. S. (2005). Logistic flexibility and Its impact on Customer Satisfaction. *The International Journal of Logistics Management, 16*(1), 89-96.
Zipkin, P. (2000). *Foundations of inventory management*. New York: Irwin/McGraw-Hill.