Inventory Management and Productivity of Manufacturing Organizations in Anambra State

[1]Ijeoma, Agnes Oduonye; [2]Azuogalanya Charles Chiagozie & [3]Igbanugo Amaka Ndidi

[1]Department Of Business Administration
Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Nigeria

[2,3]Department Of Entrepreneurship Studies
Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus, Nigeria

ABSTRACT
This study is on the "Inventory Management and Organizational productivity: A study of two selected manufacturing firms in Anambra State". The study examined the relationship between inventory management and organizational productivity and to evaluate the nature of correlation between inventory management and organizational profitability among others. Descriptive research survey method was employed; population of the study is fifteen thousand two hundred and five. Sample size of two hundred and fifty (250) was derived using the Godden's formula for sample size determination from 5,205 populations. Data were generated using questionnaire, oral interviews, observations, books, journals and the internet. Data were presented in tables and analyzed using simple percentages. Pearson product moment correlation coefficients were used in the hypotheses testing. From the analyses, it was discovered that retain investment and share dividends are positively related to profit while market share and share dividends are negatively related to dependent variable. However, irrespective of the fact that the organizations studied, painted the picture that they were applying the tenets of good inventory management, but they from time to time run into the problems of inventory inadequacy. This consequently affected their production, leading to the scarcity of one brand of their products or the other, thereby affecting their profitability and consequential effectiveness negatively. The Findings indicate that there is significant relationship between good inventory management and organizational effectiveness and inventory management has a significant effect on organizational productivity. The study concluded that Inventory Management is very vital to the success and growth of organizations. The entire profitability of an organization is tied to the volume of products sold which has a direct relationship with the quality of the product against this background the study recommended that Organizations should diversify their inventory system to suit specific needs of production, and that management should closely monitor and manipulate their inventory system to maintain production consistency for organizational profitability and effectiveness and Cost minimization techniques should be employed in the keeping and allocation of inventory among others.
Keywords: Cost minimization techniques, organizational profitability,

INTRODUCTION
Inventory is one of the resources that are managed by business organizations and it was first recorded in 1601. The need for inventory management cannot be overemphasized as it is a means for improving the performance of manufacturing industries (Agha, 2010). Inventory can be defined as a record of a business current assets including property owned, merchandise on hand and the value of work in progress and work completed but not sold and it is classified as a current asset because it can be turned into liquid cash within a short period of time (Azizul and Anton, 2019). Inventory has created a great impact on the

profitability of the manufacturing firms which resulted to the deep research of this topic. Inventory plays a major role in the operation of many businesses and manufacturing companies (Cachon and Terwiesh, 2015). In manufacturing, inventories of raw materials allow companies to operate independently of their sources of supplies. Day to day operation are not dependent on deliveries from supplies since stock of the necessary materials are maintained and used needed (Hossein and Ajeet, 2018). Without inventory control, millions of naira could be lost yearly because of non-accountability of stocks and inaccurate checks and balances.

Lawal (2013) describes as inventory detailed list of stock kept for future use in companies warehouse or stores. The reason for this study is to keep records and effectively compare the amount of stock kept that will keep the company with steady supply, as can be compared with other companies to enable it meet standard of performance; now and in future. With this, proper inventory control and management, it will keep the company in business for a long time, even at times of scarcity and low production of raw material.Also this gave opportunity for the firms to train skilled personals that can keep records of goods that are needed for administrative consultations. It also brought management into another important aspect of inventory that made it possible to allocate, co-ordinate and future production rates, thereby keeping the organization at a better standard, if valued economically.It also aids in the development of economic activities, thereby keeping the market steady with supplies of goods and services. Making it possible to evaluate the income and expenditures in the Companies accounts records. This is to improve the image of the company due to its consistency in supplies; it also made it easier to promote the company's products (Temeng, 2020).

Inventories are vital to the successful functioning of manufacturing and retailing organizations. They may consist of raw materials, work-in-progress, spare parts/consumables, and finished goods. It is not necessary that an organization has all these inventory classes. But, whatever may be the inventory items, they need efficient management as, generally, a substantial share of its funds is invested in them. Different departments within the same organization adopt different attitude towards inventory. This is mainly because the particular functions performed by a department influence the department's motivation. For example, the sales department might desire large stock in reserve to meet virtually every demand that comes. The production department similarly would ask for stocks of materials so that the production system runs uninterrupted. On the other hand, the finance department would always argue for a minimum investment in stocks so that the funds could be used elsewhere for other better purposes (Vohra, 2018).

Inventory represents an important decision variable at all stages of product manufacturing, distribution and sales, in addition to being a major portion of total current assets of many organizations. Inventory often represents as much as 40% of total capital of industrial organizations (Moore, Lee and Taylor, 2013). It many represent 33% of company assets and as much as 90% of working capital (Sawaya Jr. and Giauque, 2016). Since inventory constitutes a major segment of total investment, it is crucial that good inventory management be practiced to ensure organizational growth and profitability.

Statement of the Problem

This study focus on the needs for proper management of inventory and effects of such on organizational performance. The purpose of this study is to consider the issue associated with inventory and stock takings as compared to other organizations ways of doing things. Okeke, (2015) stated that the problems of inventory management have been around for a very long time. The need to collect food when it is readily available and then store it for times of shortage is perhaps the fundamental stock holding problem, which was tackled long ago by man. Nowadays, we usually think of stocks being held by organizations to allow efficient and continuous operations.

Managers are aware of the vital roles inventory plays in the activities of organizations. In most organizations, direct materials represent up to 50% of the total product cost, as a result of the money entrusted on inventory, thereby affecting the profitability of the organization. Organizations at times do not control their inventory holding, resulting in under stocking and causing the organizations to stay off production, thereby resulting to organizational in productivity. This therefore creates relationship problems between inventory management and organizational productivity, profitability and productivity

(Izuogu, 2016).This study also identifies and makes vital contribution to solving some of the problems of stores management development and productivity in the manufacturing industries. This research work will be significant to manufacturing companies in developing policy frameworks that will facilitate faster implementation of the best inventory management practices. The elements of the study problem are illustrated by answering the following questions:

1. What are the nature of relationship between inventory management and organizational productivity?
2. Are there any correlation between inventory management and organizational profitability?
3. How could inventory management be harnessed for organizational production sustainability?

Objectives of the Study

The broad objective of this study is to evaluate the effects of inventory management on the productivity of manufacturing organizations in Anambra state, while the specific objectives are:-

1. To examine the nature of the relationship between inventory management and organizational productivity.
2. To evaluate the nature of correlation between inventory management and organizational profitability.
3. To determine how inventory management could be harnessed for organizational production sustainability.

Research Hypotheses

The following research hypotheses were formulated for the study;

1. **Ho:** There is no significant relationship between inventory management and organizational productivity.
2. **Ho:** There is no correlation between inventory management and organizational productivity
3. **Ho:** There is no means by which inventory management could be used in harnessing organizational production sustainability.

REVIEW OF RELATED LITERATURE

Inventory Management

According to Chopra (2017) and Sople (2010) inventory exist in businesses because of a mismatch between demand and supply. Inventory could be in form of raw materials, work-in-progress or finished products. Inventory is therefore important in anticipating future demand and avoiding lost sales. However, the critical decisions in inventory control are when to order and how much to order so as to meet customer requirements, working capital requirements and profitability. Ideally inventory management is about reduced inventory levels, reduced costs, improved customer service levels, improved operations and improved profitability (Hatten, 2012; Christopher, 2012; Hamisi, 2010; Sople, 2010; Chopra, 2017).

Inventory Costs on Inventory Management

This study assumed that determination, location and control of costs related to inventory are a major challenge facing effective and efficient inventory management. Sople (2010) indicated that a lot of working capital is tied in inventory. Similarly, Chase (2019) showed that inventory control is vital as it holds up money. Calculating and balancing costs of inventory with appropriate level of responsiveness is very difficult so companies tend to limit costs. This cost containment may lead to low service levels thereby compromising on the competitive ability of an organization. Inventory costs could emanate from holding costs, costs of stock outs, acquisition costs. First, acquisition costs: acquisition costs include preliminary costs for preparing requisition, vendor selection, negotiation costs; placement costs such as order preparation, stationery costs and post-placement costs which include receipt of goods, material handling, inspection and payment of invoices. Secondly, holding costs are storage costs-space, rates, light, heat and power costs; labour costs that relate to handling, clerical and inspection; cost of insurance; interest on capital tied up; costs of deterioration, obsolescence and pilferage. Other costs relate to stock outs: costs associated with lack of inventory. These costs are; loss of product on output, costs of idle time, loss of customer goodwill and costs of rectifying the stock out.

Demand Variability on Inventory Management

It was also assumed that change in demand or demand distortion directly affects the management of inventory. According to Tersine (2012), the demand variations affect inventory levels and costs and ultimately the profits. When demand forecast is about low demand but the demand is high, stock outs will be realized therefore compromising on customer responsiveness (Hamisi, 2010). Inversely, high stock levels during low demand period results in high inventory costs. Demand distortion is basically due to inaccurate information on supplies, inaccurate demand forecasts, batch ordering, price variations and promotions which stimulate forward buying (stock up). Lack of coordination among supply chain members through information sharing creates demand variation throughout the supply chain. This is often referred to as a bullwhip effect. Generally, high demand variability leads to deterioration of inventory management and performance.

Inadequate Information-Sharing on Inventory Management

Chopra (2017) stated that "The lack of information sharing between stages of the supply chain magnifies the bullwhip effect." Accurate information on orders, stock levels and customer feedback is vital in decision-making. In addition, Hamisi (2010) indicated that information flows allow the various partners to coordinate both their long-term and short-term plans. This therefore means that inadequate information- sharing among the supply chain network members on the demand patterns, anticipated shortages, price variations and government policies was assumed to create a major challenge in the management of inventory. Information-sharing is the key to supply chain coordination and integration which maximizes supply chain profitability through cost containment and responsiveness. Effective inventory management depends heavily on accurate information sharing on stock levels, shipment, customer preferences and costs across suppliers, manufacturers, distributors, wholesalers, retailers and customers. The study assumes that MSEs rely on information from both their suppliers and customers to make decisions on what to stock and levels of stock to hold. Since most MSEs deal in variety of SKUs from different suppliers, the information flow and management is erratic and uncoordinated. Hence, a challenge to the MSEs inventory management.

Theoretical Review

The two main inventory theories in inventory management are: inventory management theory which is also known as mathematical inventory theory and the theory of constraints. There are several mathematical models/theories in inventory management depending on the predictability of demand (Heizer and Render, 2016). The two common models in scientific inventory theory are deterministic and stochastic inventory models. According to Morgenstern (2017), when demand in future can be determined through forecasting with some precision, deterministic model would be used to set inventory policy. Stochastic, on the other hand, is used where the demand in a given period is variable- cannot be predicted.

Theory of Constraints (TOC) is a management philosophy developed by Goldratt (1984) in his book, *The Goal*. It postulates that an organization is a system, and every system has at least one constraint limiting it from achieving its goal of making (more) money. In order to improve the performance of the system, these constraints must be identified (described) and corrective measures taken (a prescription). Identifying the constraints help to focus the limited resources to the weakest part for the system to improve. However, three ways to the ultimate goal are as follows: throughput (T), inventory (I) and operating expenses (OE). A system can, therefore, be evaluated and controlled by the three. Throughput is defined as the rate at which the system generates revenue through sales. Inventory is all the money that the system has invested in purchasing things which it intends to sell. Goldratt defined operational expense as all the money the system spends to change inventory into throughput.

A constraint is anything that prevents a system from achieving its goal. The theorist suggests two types of constraints; internal constraints. An internal constraint exists when the system cannot produce/deliver enough for the market while an external one exists when the system delivers/produces more that the market can take. Internal constraints could be physical or policy constraints. From Goldratt's three measurement dimensions, an organization has three different ways of improving the organizational

output: increasing the T, reducing the I or reducing the OE. This research is concerned with inventory as constraint that can be focused on to cause system improvement. The approach uses certain parameters to ensure appropriate levels of inventory. These parameters are: a) inventory is held as close as possible to the demand and source to ensure quick shipping of goods. b) Upper limits of stock are kept by having buffer inventory. c) Quick placement of orders whenever inventories decrease d) buffer inventory should always be adjusted to reflect changes in the rates of demand.

There are constraints that complicate successful inventory management: uncertain demand, costs lead times, production prices etc (Gunus and Guneri, 2007). Underlying this research is the belief that inventory management in MSEs is faced with some challenges such as escalating inventory costs, untrained personnel, inaccurate record keeping and demand variability.

Empirical Literature

In a study done by Kolias (2011), in order to test inventory-performance link using construction firms listed in Bursa Malaysia, it was found that there is a positive correlation between inventory turnover and capital intensity as a result of the nature of investments.

A study by Fullerton (2013) provides empirical support that manufacturing firms that implement higher degrees of modern inventory management techniques should outperform competitors; it was found that a positive relationship exists between firm's profitability and the degree to which waste reducing production practices such as reduced set up times, preventive, maintenance programs, and uniform workloads are implemented. These findings indicate that manufacturing enterprises employing modern inventory management techniques are consistently more profitable than their counterparts.

Lazaridis & Dimitrios (2015) highlighted the importance of firms keeping their inventory at an optimum level by analyzing the relationship between working capital management and corporate profitability and stressed that its mismanagement will lead to excessive tying up of capital at the expense of profitable operations. A similar study by Rehman (2016) empirically established a strong negative relationship between the inventory turnover in days and the profitability of firms.

Sushma & Phubesh (2017) in their study of 23 Indian Consumer Electronics Industry firms established that businesses" inventory management policies had a role to play in their profitability performance.

Lazaridis & Dimitrios (2015) in their study of 131 companies listed on the Athens Stock Exchange showed that mismanagement of inventory will lead to tying up excess capital at the expense of profitable operations and suggested that managers can create value for their firms by keeping inventory to an optimum level.

Also, Rajeev (2018) in his study of 91 Indian Machine Tool Enterprises to evaluate the relationship between inventory management practices and inventory cost established that effective inventory management practices have a positive impact on the inventory performance of businesses and also have an eventual effect on the performance of the overall businesses processes.

METHODOLOGY

A survey research design was employed in carrying out the work. The study was carried out from two manufacturing firms in Anambra state Nigeria which include Cutix Cable Plc, Nnewi, Winco Foam Plc, Agu Awka. The population of the study comprises all staff of the two companies under study, which include both skilled and unskilled workers who are supplying better information as regards the topical issue. This population comprises of about 5,205. Since the population of the study is large, the study cannot conveniently cover the entire population. Hence the sample size will be determined through the use of Godden's (2004) formula. A total number of 250 staff was selected from two (2) firms under study through the use of Simple random sampling technique. The data collected for the purpose of analysis and consequently testing of the formulated hypotheses were primary data gathered from selected company under study. The data collected for the purpose of analysis and consequently testing of the formulated hypotheses were primary and secondary data gathered from selected company under study. The primary data were collected using oral personal interviews and simple questionnaires administered to the higher and lower care of Cutix cable Nnewi and WINCO Foam, Agu Awka, while secondary source were from

Nigerian exchange market where detailed about company performance were revealed through various data related to this mentioned company under study were revealed.

Method of Data Analysis

The methods of data analysis adopted in this study include the simple percentage to exhaust and revealed the truth concerning the firm under study and OLS regression were also adopted to relate the effect of inventory on the performance of the organization through SPSS statistical package version 21. To ensure a high level of confidence is our test significance level of 0.0 and 0.05 were used. A simple correlation analysis also through the means of OLS method were also employed and the reliability which was found to be r = 0.96 showing that there is consistency in the items of the variable related within the model. This method was adopted to determine the relationship between inventory and firm productivity. In other words, the annual profit of the firms was used to determine the contribution of inventory management on productivity.

DATA PRESENTATION AND ANALYSIS

This area deals with data presentation, analysis and interpretation. Thus the data collected from the field survey will be presented using frequency percentages and tables; while the hypotheses will equally be tested.

Test of Hypotheses

In testing the hypotheses, hypothesis 1 and 2 were tested with OLS method through SPSS method while 3 were tested with the use of Pearson correlation method.

Test of Hypotheses

In this study, each of the hypotheses would be statistically tested using the Pearson correlation coefficient table 4.3.0 and 4.4.0 will be used against all the variables derived from them respectively.

Hypothesis one

Statement of Hypotheses

The formulas for this are as follows:

Ho: There is no significant relationship between inventory management and organizational productivity.

H_i: There is significant relationship between inventory management and organizational productivity.

Table 1: Data Related To Inventory Management and Organizational Productivity

Year	Profit	Market Share	Return on Investment	Profit Merging	Share Dividends
2010	1219.55	796	1299.69	10.06	85
2011	938367	850	857.46	9.14	106
2012	11754.00	1175	2610.00	22.21	383
2013	10606.18	1229	5602.05	52.82	378
2014	4832.17	1193	2870.85	57.30	331
2015	10005.81	15553	2870.85	28.69	273
2016	53522.86	2007	17543.09	32.78	313
2017	41265.50	1764	7549.23	18.29	656
2018	21291.41	1532	11679	54.85	357
2019	28400.86	2352	4071	14.33	498
2020	17965	3380	4517	25.14	531
2021	221947.01	17831	49689.04	26.12	3911

Profit = Prof

Market Share = Makshar

Return on Investment = Retinves

Profit Merging = Profmerg

Share Dividends = Shardiv

$PROFIT = a_0 + a_1Makshar + a_2Retinves + a_3Shardiv + e_t$

The objective is to examine the nature of the relationship between inventory management and organizational productivity and to determine how inventory management could be harnessed for organizational production sustainability.

The researcher carried out a standard multiple regressions to assess the relative contribution of market share (MKSHAR), Return on investment (RETINVES), Profit Margin (PROFMERG) and Share Dividends (SHARDIV) with a view of discovering the extent of the firm productivity.

The f = 0.05 (n = 12, df_1 = 4 df_2 = 8) = 1.5

Thus f cal of 9.076 > f critical of 2.87

Then Ho is rejected

Hi: is accepted

Table 4.2 Regression result

		Prof	Makshar	Retinves	Profmerg	Shardiv
Pearson Correlation	PROF	1.000	-.020	.026	-.392	.055
	MAKSHAR	-.020	1.000	.651	-.061	.714
	RETINVES	.026	.651	1.000	.073	.939
	PROFMERG	-.392	-.061	.073	1.000	-.039
	SHARDIV	.055	.714	.939	-.039	1.000
Sig. (1-tailed)	PROF	.	.475	.468	.104	.432
	MAKSHAR	.475	.	.011	.425	.005
	RETINVES	.468	.011	.	.411	.000
	PROFMERG	.104	.425	.411	.	.452
	SHARDIV	.432	.005	.000	.452	.
N	PROF	12	12	12	12	12
	MAKSHAR	12	12	12	12	12
	RETINVES	12	12	12	12	12
	PROFMERG	12	12	12	12	12
	SHARDIV	12	12	12	12	12

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.410[a]	.168	-.308	3.04905E5	.168	.353	4	7	.835	2.711

a. Predictors: (Constant), SHARDIV, PROFMERG, MAKSHAR, RETINVES

b. Dependent Variable: PROF

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.311E11	4	3.279E10	.353	.835[a]
	Residual	6.508E11	7	9.297E10		
	Total	7.819E11	11			

a. Predictors: (Constant), SHARDIV, PROFMERG, MAKSHAR, RETINVES

b. Dependent Variable: PROF

Coefficients

Model		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
		Unstandardized Coefficients		Standardized Coefficients			Correlations		
1	(Constant)	300947.492	197656.316		1.523	.172			
	MAKSHAR	-6.433	22.239	-.143	-.289	.781	-.020	-.109	-.100
	RETINVES	2.823	20.822	.144	.136	.896	.026	.051	.047
	PROFMERG	-6415.229	5695.502	-.411	-1.126	.297	-.392	-.392	-.388
	SHARDIV	1.526	292.337	.006	.005	.996	.055	.002	.002

a. Dependent Variable: PROF

Preliminary analysis conducted on the variables entered to ensure no violation of the assumptions of normality, linearity and multicollinearity as seen in the regression output data (Correlations) showed that independent variables were not highly correlated (r< 0.9).

Using the least square method (enter), the model summary indicates:

$R^2 = 0.168$

Adjusted $R^2 = -0.308$

f-stats: 0.353

Prob(F-stata): 0.835

Durbin-Watson = 2.711

Given that the n = 12, the variance in the dependent variable (PROF) will be explained by the adjusted R square (0.168). Thus, 16% of the variance in the PROF was explained by the model. The ANOVA table indicates that the model is not statistically significant (sig. = 0.835, this means P > 0.005).

Again at 0.05 level of significance f-statistic (0.353) is less than the f= 0.835 (critical) (df1 = 4, df2 =8 n = 12) = 1.5. We have reason to accept the hypothesis that there is relationship between inventory management and organizational productivity.

The contribution which each of the independent variables made in predicting the productivity was assessed.

All the variables MAKSHAR, RETINVES, PROFMERG and SHARDIV are not statistically significant, thus each are not making statistically unique contribution to PROF. Their sig. values are more or less than 0.05.

There are other variables/factors that are making statistically unique contribution to PROF.

However, the beta values that indicate the contributions of each regressed variables in the model showed that variables making higher contributions are as follows;

RETINVES   = 0.98 (1st)

SHARDIV   = 0.006 (2nd)

MAKSHAR   = 0.110 (3rd)

PROFMERG   = 0.20 (4th)

DISCUSSION OF RESULTS

From the analysis above it is discovered that the regression result reveals that about 99.8% of the systematic variation in the dependent variables is explained by the four independent variables i.e. Market share (MAKSHAR), Retain investment (RETINVES), Profit merging (PROFMERG) and Share Dividends (SHARDIV).

The F value is significant at the 5% level showing that there is a linear relationship between the PROF and the four independent variables. On the basis of apriori expectation, RETINVES and SHARDIV are positively related to profit while MAKSHAR and SHARDIV are negatively related to dependent variable. In fact a unit increase in RETINVES and SHARDIV results in an increase in the PROF by 2.823 and 1.526 units respectively while MAKSHAR and SHARDIV decrease the level of PROF by -6.433 and -6415.229 unit respectively. The implication is that the productivity of the firm under study could be

determined through all variables under study. The t-value of MAKSHAR of 6.433 and SHARDIV of 6415.229, has not made any significant impact on the productivity.

It was found that the value transaction and total listing had positive but insignificant impact on the productivity. However, the total listing and value of transaction was positively signed and also statistically significant. The findings agree with Ariyo and Adelegan (2015) and Ewah(2019) who found that the productivity of any firm in Nigeria are liable to grow if market share increase and profit merging increase equally but has not contributed meaningfully to the firm productivity.

Statement of Hypothesis

Ho: There is no correlation between inventory management and organizational productivity

H$_i$: There is a correlation between inventory management and organizational profitability

B. Level of Significance is 0.05

C. Decision rule state that , null hypothesis shall be rejected if and only that computer value of X^2 is greater than calculated value of X^2, we reject Ho and accept Hi, otherwise we do not reject the Ho

Accept if calculated value of t greater than tabulated value, otherwise reject the said hypothesis

$F^{tab} = 0.835 > F^{cal} 0.353$

Statistical Decision: Since calculated value of "F-tab" is greater than F-cal, therefore reject null hypothesis and accept alternative hypothesis.

f. Research/Administrative decision: Since computed value is greater than tabulated value, therefore we reject null hypothesis and accept alternative hypothesis, which says there is a significant correlation between inventory management and organizational profitability, and therefore state that there is a significant relationship between inventory management and organizational productivity.

Hypothesis Three

We use table 4.4.0 and 4.3.0

Ho: There is no means by which inventory management could be used in harnessing organizational production sustainability.

H$_i$: Inventory management could be used in harnessing organizational production sustainability.

X	Y	X²	Y²	XY
286	289	81796	83521	82654
265	269	70225	72361	71285
67	19	4489	361	1273
81	88	6561	7744	7128
67	85	4489	7225	5695
Σ X=766	Σ Y=750	Σ X²=167560	Σ Y²=171212	Σ XY=168035

<u>Interpretation of Table</u>

$$r = \frac{n\sum xy - \sum x \sum y}{\left(\sqrt{n\sum x^2 - (\sum x)^2}\right)\left(\sqrt{n\sum y^2 - (\sum y)^2}\right)}$$

$$r = \frac{5(168035) - (766)(750)}{\left\{\sqrt{5(167560) - (766)^2}\right\}\left\{\sqrt{5(171212)-(750)^2}\right\}}$$

$$r = \frac{840175 - 574500}{\left\{\sqrt{837800-586756}\right\}\left\{\sqrt{856060 - 562500}\right\}}$$

$$\frac{265675}{\left\{\sqrt{251044}\right\}\left\{\sqrt{293560}\right\}}$$

$$\frac{265675}{(501.04)(541.8)}$$

$$\frac{265675}{271463.47}$$

r =0.978

Thus the correlation coefficient is 0.98, which indicates strong relationship linear association between Inventory management and organizational production sustainability.

Degree of Freedom: The hypothesis in this study will be tested using 0.5 degree of freedom.

Test of Hypothesis:

Ho: There is no means by which inventory management could be used in harnessing organizational production sustainability.

d. Computation of X^2 - value

$r = |t| = 0.79$

Computed value of $t^c = 0.79$

Accept if calculated value of t greater than tabulated value, otherwise reject the said hypothesis which say inventory management could be used in harnessing organizational production sustainability

$t^t = 1.895 > t^c = 0.79$

Statistical Decision: Since calculated value of "t" is lesser than tabulated value of t, therefore reject null hypothesis and accept alternative hypothesis.

Critical value: (7, 005), under the t table the critical value was ascertained.

f. Administrative decision: Since computed value is greater lesser than tabulated value, therefore we reject null hypothesis and accept alternative hypothesis, which says inventory management could be used in harnessing organizational production sustainability.

FINDINGS

The findings that emerged from the study showed that

1. There is a significant relationship between effective inventory management system and organizational performance and that inventory management could be used in harnessing organizational production sustainability.
2. Inventory management could increase share market of manufacturing company.
3. Inventory management could leads to high returns on investment which could be achieved through effective inventory.

CONCLUSION

Inventory Management is very vital to the success and growth of organizations. The entire profitability of an organization is tied to the volume of products sold which has a direct relationship with the quality of the product. Management does a lot to present a good organization to the public in terms of quality production.

Good inventory management in any manufacturing organization saves the organization from poor quality production, disappointment of seasoned customers, loss of profit and good social responsibility. This is done by ensuring timely delivery of raw materials to the factory and distribution of finished goods, in order of production to the warehouse. If inventory management is not adequately maintained, production cannot meet the aspirations of customers which are loss of revenue to the organization. Right from procurement to the time of processing, quality of raw material is the chief determinant of the productive efficiency of any manufacturing concern. This varies from organization to organization.

Manufacturing Company in Anambra State, the raw materials are volatile which are procured locally and internationally. The processing machines and technology are, however imported. Various manufacturing company in Nigeria are source their material both locally and internationally but up to 60% are sourced internationally. Special chemicals are however, imported. In Nigeria manufacturing company, the main raw materials are colour and Reagent and some other chemical which could need

better preservation and proper handling which is imported. Other raw materials are water and sucrose which are locally sourced. The organizations combine the First-in-First-out (FIFO) and Average Methods in their inventory allocations.

RECOMMENDATIONS

1. It is recommended that organizations adopt the inventory keeping method that best suits their operation. Here, just-in-time method could be considered as an option as it has been proven to be effective in maintaining the right level of inventory and also prevent stock-outs.
2. There is also the need for organizations to train their personnel in the area of inventory control management.
3. The organizations should diversify their inventory system, to suit specific needs of production.

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