Effect of Automated Inventory Management System on Productivity in Selected Consumable Goods Manufacturing Firms in Ilorin, Kwara State

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ABSTRACT

In today's highly competitive business environment, organizations from all industries are striving to achieve effectiveness, cost efficiencies and economies of scale. Most of these organizations hold inventory so as to meet their customers' needs. However, managing these inventories in order to achieve their objectives has posed a great challenge to the firms. This study was to examine the effect of automated inventory management system on productivity in selected consumable goods manufacturing firms. Survey research design was adopted for the study. The study population comprises of 600 out of which sample of 240 was selected and copies of questionnaire were administered to the respondents to obtain the necessary primary data. Multiple regression was used in testing the formulated hypothesis. The result of the analysis revealed that automated inventory system has significant influence on organizational productivity (R2 = 0.721 and p-value less than

0.05) The study concluded that there was a significant effect of automated inventory system on organizational productivity. Therefore, the study recommended that firms The organization should embrace efficient inventory management practices that could ensure optimal investment in inventories as strategy for gaining competitive advantage over competitors and that organizations should also adopt more modern sophisticated techniques such as the Just-In-Time systems, Economic Order Quantity model, and so on in their operations to ensure control of inventory so as to obtain cost efficiency and effectiveness.

Keywords: *Automated, Inventory, Manufacturing, Productivity, Ilorin.*

Background to the study

Today, most companies face dilemma in competitive market environment, where on one hand, customers demand customized products and services which require that their orders are fulfilled quickly, and on the other hand they do not want to pay a premium for this customization and availability (Graman and Magazine, 2006). Therefore, organizations are exploring ways toward postponement strategy in response to constantly changing demands. Graman and Magazine (2006) argued that today, the cost of holding inventory, extensive product proliferation and the risk of obsolescence, especially in rapidly changing markets, make the expense of holding large inventories of finished goods excessive and that high demand items naturally have safety stock assigned to them, but in many organizations there are so many very-low-demand items that keeping any stock of these items is unreasonably expensive, so they argue that companies must now provide good service while maintaining minimal inventories.

Inventory management has been seen to be a critical management issues for most companies which may include large companies, medium-sized companies, and small companies. This entails cost reduction of holding stocks by maintaining enough inventories in the right place, at the right time and cost to make the right amount of needed products. The challenge in inventory management is to balance the supply of inventory with demand. A company would ideally want to have enough inventories to satisfy the demand of its customers so as to avoid loss of sales due to inventory stock-outs. On the other hand, the company does not want to have too much inventory staying at hand because of the cost of carrying inventory (Coyle, Bardi and Langley, 2003). Thus, the need for inventory management comes in.

In traditional settings, inventories of raw materials, work-in-progress components and finished goods were kept as a buffer against the possibility of running out of needed items. Hence, high levels of inventory held in stock affect adversely the procurement performance out of the capital being held which

affects cash flow leading to reduced efficiency, effectiveness and distorted functionality (Koin, Cheruiyot & Mwangangi, 2014). This study therefore aimed to investigate the effect of automated inventory system management on organizational productivity.

Statement of the problem

Inventory is a pivotal part of current assets mainly in manufacturing firms. Inventory management, therefore, plays a crucial role in balancing the pros and cons associated with holding inventory. Efficient and effective inventory management is crucial in successful running and survival of a business enterprises, this is because when organizations fail to manage their inventory efficiently when they are bound to experience stock out, the decline in productivity and profitability, customer dissatisfaction etc.

However, poor inventory management had become a main concern since efficient and effective performance is the main necessity for development of organizations. A truly effective inventory management system minimizes the complicacies involved in planning, executing and controlling a supply chain network which is important to organizational success. Opportunities become available when an organization improves its inventory management which can significantly enhance the bottom line of the organizational performance. However, organizations have ignored the potential savings from proper inventory management, treating inventory as a necessary evil and not as an asset requiring management.

Nowadays, managers think of holding stocks so as to ensure efficient and continuous operations. Organizations at times do not pay proper attention to inventory control which can result in under stocking and causing the organizations to stay off production, thereby resulting to organizational ineffectiveness. This therefore creates relationship problems between automated inventory system management and organizational productivity.

Research Questions

The study was guided by the following research questions:
How does automated inventory system influence organizational productivity?

Research Objectives

To examine how automated inventory system influence organizational productivity;

Research Hypothesis

Ho_1: Automated inventory system does not have any significant influence on organizational productivity.

Literature review

Conceptual Clarifications

Concept of Inventory

Inventory as defined by Arnold (2008) refer to the materials and supplies that a business or institution carries either for sale or to provide inputs or supplies to the production process. According to Ramakrishma (2003), an inventory is any stored resources that are used to satisfy a current or a future need. Inventories are important to the success of manufacturing and retailing organizations. They comprise of raw materials, work-in-progress, spare parts, and finished goods. It is any stock that a firm or business keeps to meet its future requirement. (Arti & Dhawal, 2013).

Types of Inventories

Ile (2002), opines that inventory is classified into three types which include;

1. **Raw Material inventory:** This includes all items purchased by an organization for processing. For instance, Flour, yeast, eggs etc. are all part of raw materials inventory of a confectionary organization.
2. **Work-In-Progress Inventory:** This is also called goods-in-progress inventory. This is an intermediate stage of raw material inventory that is yet to be finished by the plant to enter into another stage of processing. These are materials that have been partly processed but are yet uncompleted.
3. **Finished Goods Inventory:** This is the stock of finished goods. These could be stock of goods awaiting shipment or in the warehouse, the level of finished goods stock is a matter of co-ordination between the production and sales departments of the organization.

Motives for Holding Inventory

Miller (2010) also identified three general motives for holding inventories. They are:

- **Transaction motive:** This refers to the need of maintaining inventory to facilitate smooth production and sales operations.
- **Precautionary motive:** Precautionary motive for holding inventory is to provide a safeguard when the actual level of activity is differ than anticipated. This inventory serves when there is an unpredictable changes in the demand and supply forces.
- **Speculative motive:** This motive influences the decision to increase or decrease the levels of inventory to take the advantage of price fluctuations.

Concept of Inventory Control

Inventory control refers to "all aspects of managing a company's inventories: purchasing, shipping, receiving, tracking, warehousing and storage, turnover, and reordering. Ondari and Muturi (2010) argued that if inventory is unavailable when customers request for it or if inventory is unavailable when it

is needed for production, a stock out occurs. A stock out of an item demanded by customer can result in lost sales or demand, loss in good will and cost associated with backorders processing such as extra paper work expediting special handling and higher shipping costs.

Methods of Inventory Control

- According to Ile (2002), the methods that are used for the control of inventories include;
- Perpetual inventory method,
- Physical inventory method,
- Materials-control cycle method.

❖ **Perpetual Inventory Method:** This is also called balance of stores record. The balance of stores record plays the central role in the inventory control system, particularly in a job-order-plant. It controls the movement of each item of inventory as it goes in and out of stock and shows the current balance at hand.

❖ **Physical Inventory Method:** Some discrepancies between inventory records and quantities at hand cannot be ruled out. An actual count of all items at hand is periodically necessary for effective inventory control. The method selected depends upon the size and diversity of stock, the degree to which work process is standardized and the processing methods employed in a particular plant.

❖ **Material Control Cycle Method:** An efficient system must be designed for the control of material from the time of requisitioning of purchase to the storage of the finished product. A step by step standard routine must be developed, authority and responsibility for the execution of each step, must be clearly delegated to specific individuals.

From the above, one can observe that the three methods of inventory control are interwoven. This is from the point of view that physical inventory items cannot be determined without the material control cycle method which monitors the step-by-step movement of inventory from entry point to exit point and the material control cycle cannot be effective without the application of the perpetual inventory method. Therefore the three methods of inventory control are complementary, (Ile, 2002).

A good inventory control system minimize the possibility of delays in production that are caused by lack of materials, permits a company to exercise economics in purchasing, essential for an efficient accounting system in factory which is desirable to expedite the production of financial statement which allows for possible increase in output, insure advantage of quality discount, creates buffer between input and output; insures against scarcity of materials in the market and avoid inventory build-up (Choi, 2012). Some techniques of

inventory management are:

Economic Order Quantity (EOQ)

Dave (2001) defines Economic Order Quantity as an accounting formula that determines the point at which the combination of order costs and inventory costs are the least. Economic order quantity is the number of units that a company should add to inventory with each order to minimize the total cost of inventory, such as holding costs, ordering costs and stock out costs.EOQ is used as part of continuous review system in which the level inventory is monitored at all times and fixed quantity is ordered each time the inventory reaches a specific reorder point (Lysons & Farrington, 2012).

Lysons and Farrington (2012), discussed that EOQ model was determined by minimizing the total annual cost incurred by the company by virtue of its ordering cost and carrying cost. The expression for total annual cost is:

TC= q/2 h +D/Q s

Where,

TC=total annual cost

Q=order quantity

D=annual demand

S=ordering cost

H=annual carrying cost per unit.

Lysons and Farrignton (2012) also said that the first component of this equation represented the inventory management costs and the second component represents the ordering cost. EOQ minimizes the sum of holding and setup costs. Differentiating with respect to order quantity, the expression for EOQ was obtained as indicated in the equation below;

Q = 2DCo/Ch

D = annual demand

Co= ordering/setup costs

Ch= cost of holding one unit of inventory

The Economic Order Quantity or EOQ offers solution to inventory problems.

ABC analysis

ABC inventory control technique is a principle recognizes a small portion of items which may typically represent the bulk amount in value of the total inventory used in the production process, while a relatively large number of items may form a small part of the money value of stores. Each item of inventories is given either A, B or C denomination depending on the amount spent for a particular item. “A” or the highest value item must be under the tight control and under responsibility of the most experienced personnel, while “C” or the lowest value may be under simple physical control (Fuller, 2000).

The ABC stock control technique relies on that the decision a little bundle of the things may usually address the weight of money estimation of the total stock. It is used as a part of the era method, while a tremendous number of things may happen from a little part of the money estimation of stores. Accordingly, to manage stock control, high regard things are more solidly controlled than low regard things. Most organization attempts and oversights are depleted on managing A things. C things get the base thought, and B things are in the centers. The ABC approach ranks using the following criteria: A things represent 70–80% of the firm's annual consumption approximation and just 10–20% of aggregate stocked items. B things represent 15–25% of annual use esteem and 30% of aggregate the stock, and C things characterize 5% of the annual application of esteem and half of total stocked items.

Just in time technique (JIT)

JIT is a production scheduling and inventory control technique that is implore to indicate what customer wants, when, and quantity needed using the minimum human resource and materials resources (Wanjohi, Mugo & Wagoki, 2013). Mazanai (2012) also state that the Just-In-Time (JIT) inventory technique is a method wherein materials, parts, and different items are ordered handiest in portions required to fulfill on the spot manufacturing desires. These gadgets are then cautiously scheduled to be acquired at exactly the time they are needed. This will ensure effective performance, waste reduction, minimize cost in managing inventory and assists lead time expenses. Just-In-Time refers to a group of practices that cast off waste. It also emphasizes that manufacturing ought to create gadgets that arrive whilst wished, neither in advance nor later.

Concept of Automated Inventory System

Vijay (2004) defines automation as a technology dealing with the application of mechatronics and computers for the production of goods and services. Automation is broadly classified into manufacturing and service automation. A computerized inventory control system is the integration of sub-functions involved in the management of inventory into a single cohesive system. It is software installed on the computer systems that enables a firm to keep a check on the inventory levels by performing the automatic counting of inventories, recording withdrawals and revising the stock balance. It is simply an inventory management system that is automated.

Inventory is an important asset if a company wants to achieve a balance between efficiency and responsiveness. David (1996) explains that inventory management is crucial to maximizing customer service, maximizing the efficiency of purchasing and production, maximizing inventory investment and maximizing profit. Whether used to provide customer service or to achieve efficiencies, the need to carry inventories conflicts with the management's desire to minimize inventory investments. Reconciling these conflicting objectives

is a primary goal of inventory management. Inventory Management systems and inventory control processes provide information to efficiently manage the flow of materials, effectively utilize people and equipment, coordinate internal activities and communicate with customers (Wolcott, 2000).

The main reasons why many firms automate is to curb the problems of shortage of labour, high cost of labour, need to increase productivity and to reduce the manufacturing lead-times. In order to effectively automate inventory management, several systems have been developed so as to ensure that organizations hold the right quantities of stock so as to strike a balance between the costs involved and customer satisfaction and also to solve inventory related problems in manufacturing industries. Such systems include Materials Requirement Planning (MRP), Radio Frequency Identification (RFID), Bar-coding, and E-Procurement which are further explained below.

Materials Resource Planning (MRP)

The materials resource planning is a computerized technique that aids the control of inventory and production planning. Gbadamosi (2013) described the MRP as a computer based planning and control system designed to handle large volumes of data so as to produce more timely and accurate information for decision making purposes. Its aim is to make available, purchased or company manufacturing assemblies just before they are required by the next stage of production or for delivery (Gbadamosi, 2013; Owoeye, *et al.,* 2015). MRP is applied to manage material movement in the enterprise and based on the production requirements and scheduling (Sople, 2010). Lysons and Farrington (2006), mentioned that MRP system has the following elements:

- **Master production schedules (MPS):** The MPS uses the inputs from marketing and sales to forecast demand for quantities of the final product over a planned time horizon known as time buckets.
- **The bill of materials (BOM**): also known as the product structure, this lists all the items that comprise each assembly and subassembly that make up the final product.
- **The inventory file:** This is the record of individual items of inventory and their status.

Radio Frequency Identification (RFID)

RFID systems use tiny tags with embedded microchips containing data about an item and its location to transmit radio signals over a short distance to special. RFID readers pass data over a network to a computer for processing. The RFID tag is electronically programmed with information that identifies an item plus other information about its location during production. The rest of the tag is an antenna that transmits data to the reader (Ken *et al.,* 2010). In inventory control, RFID systems capture detailed information about items in production and if a large number of items are shipped together, RFID systems

truck each pallet, lot or even unit item in the shipment. This helps the firm to improve their ability to see exactly what stock is stored in warehouses. The following are two types of RFID technology to manage inventory movement; active and passive technology.

- **Active RFID technology:** uses fixed tag readers assigned throughout a warehouse such that anytime an item with an RFID tag passes the reader, the movement of the item is recorded in the inventory management software (Ebunobi, 2012). Active systems work best in environments that require real time inventory tracking or where inventory security problems exist.
- **Passive RFID technology:** requires the use of handheld readers to monitor inventory movement (Ebunobi, 2012). Because RFID technology has a reading range of up to 40 feet using passive technology and 300 feet using active technology, it greatly increases the accuracy of moving inventory around a warehouse.

Bar-coding

A barcode is an optical machine readable representation of data about the object to which it attaches. Barcodes are used for identification, handling, retrieval and storage of goods in warehouses and stores. It is the most popular technology in many applications. Individual inventory items, cartons or unitized packages are affixed with a barcode that can be read by a barcode scanner attached to an online computer system. Barcode is assigned to a particular inventory item to show its identity during storage, retrieval and dispatch. Barcodes are further used for communication of dispatched items for the preparation of bills by accounts departments and making periodic reports on inventory status and sales (Kitheka, 2010). The most familiar example is Electronic Point of Sale (EPOs). The major use of barcode identification system is to track inventory automatically. It also accelerates the flow of products and information throughout an enterprise (Wanjoi et al., 2013).

Enterprise Requirement Planning (ERP)

According to Ken *et al.* (2010), ERP is a business system that, supported by multi-module application software integrates all the departments or functions of an enterprise. ERP is applicable to all organizations and allows managers to have a consolidated view of what is taking place throughout the organization. Most of ERP systems are designed around a number of modules, each of which can be stand alone or combined with others. Some of the modules are finance, logistics, manufacturing, supplier management and Human Resources Management.ERP systems collect data from various key business processes in manufacturing and production, finance and accounting, sales and marketing, and human resources and storing the data in a single central data depository. Information that was previously fragmented in different systems can be easily shared across the firm to help different parts of the business work more closely

together.

Organizational Production Efficiency
The organizational production efficiency proposed to be used for this study is expressed by cost effectiveness, organizational productivity and organizational efficiency.

Cost Effectiveness
Effectiveness oriented companies are concerned with output, sales, quality, creation of value added, innovation, cost reduction. It measures the degree to which a business achieves its goals or the way outputs interact with the economic and social environment. According to Kinyugo (2014), "cost effectiveness consists of those actions that are taken by managers to reduce costs, some of which are prioritized on the basis of information extracted from the accounting system."

Productivity
Productivity is the quantitative relation between what an organization produce and what it use as resources to produce them i.e., an arithmetic ratio between the amount produced (output) and the amount of resources used in course of production (input). Kamau (2011) argue that the concept of productivity is linked closely with the issues of efficiency and encompasses several efficiency elements such as price efficiency, allocative efficiency, technical efficiency and scale efficiency. The overall productivity level of an organization depends on all these elements (Kamau, 2011).

Efficiency
Efficiency is often measure of ability to avoid wasting materials, energy, efforts, money and time in doing something or in producing desired result. According to Pinprayong and Siengthai (2012) there is a difference between business efficiency and organizational efficiency. Business efficiency reveals the performance of input and output ratio, while organizational efficiency reflects the improvement of internal processes of the organization, such as organizational structure, culture and community. Excellent organizational efficiency could improve entities performance in terms of management, productivity, quality and profitability. The Pinprayong and Siengthai (2012) introduced seven dimensions, for the measurement of organizational efficiency:

- ❖ Organizational strategy;
- ❖ Corporate structure design;
- ❖ Management and business system building;
- ❖ Development of corporate and employee styles;
- ❖ Motivation of staff commitment;

- ❖ Development of employee's skills;
- ❖ Subordinate goals.

Theoretical Review

Resource Based View Theory (RBV)

The RBV theory is one of the fundamental principles for the competitive advantage of a firm. Developing and maintaining this competitive advantage depends on whether the firm is able to identify, develop, deploy, and protect the internal resources (Barney, 1991). It adopts two assumptions in analyzing sources of competitive advantage Firstly, this model assumes that firms within an industry (or within a strategic group) may be heterogeneous with respect to the bundle of resources that they control. Second, it assumes that resource heterogeneity may persist over time because the resources used to implement firms' strategies are not perfectly mobile across firms (i.e., some of the resources cannot be traded in factor markets and are difficult to accumulate and imitate).

Adaptive Structuration Theory (AST)

Structuration theory was first proposed by Anthony Giddens in his constitution of the society in 1984, which was an attempt to reconcile social systems and the micro/macro perspective of organizational structure. Desanctis & Poole (1994) borrowed from Giddens in order to propose Adaptive Structuration theory and the rise of group decision support systems. Adaptive Structuration theory provides the model whereby the interaction between advancing information technologies, social structures, and human interaction is described, and which social structures, rules, and resources provided by information technology as the basis for human activity. Adaptive Structuration theory is a viable approach in studying how information technology affects inventory management because it examines the change from distinct perspectives.

Theory of Constraints (TOC)

The theory of constraints (TOC) was invented by Dr. Eliyahu M. Goldratt in 1984 in his book 'The Goal'. TOC is evolved from the OPT (Optimized Production Timetables) system and was later known under the commercial name of Optimized Production Technology (OPT). Central to the TOC philosophy was that any organization or system has a constraint or a small number of constraints which dominate the entire system. There are constraints that complicate successful automated inventory system management: uncertain demand, costs lead times, production prices and so on (Gumus & Guneri, 2007). Underlying this study is the belief that automated inventory system management in organisations is faced with some challenges such as escalating inventory costs, untrained personnel, inaccurate record keeping and demand variability. Therefore, Theory of Constraints is of great importance to

companies in inventory management.

In view of the above theories and discussions, this study will adopt theory of Constraints (TOC) and Adaptive Structuration theory as baseline theories. This is because Theory of Constraints (TOC) is appropriate for Organizational Production Efficiency while Adaptive Structuration Theory deals with the adoption of Information Technology and its influence effective inventory management and productivity.

Empirical Evidence

Imeokparia (2013) studied on "Inventory management system and performance of food and beverages companies in Nigeria". The study revealed that the three key qualities that are essential in inventory management decisions for manufacturing organization from the perspective of the third party logistics provider are customer satisfaction, on time delivery and order fulfillment.

Adeyemi and Salami (2010) also investigated how empirically inventory management as a tool of optimizing resources in a Nigeria manufacturing industry and they found out that inventory management constitutes the most significant part of current assets of larger majority of Nigerian manufacturing industries. The findings further revealed that inventory usage depends on sales that means as sales increases, inventory usages should also be on the increase. In another study conducted by Chase (2009), explained the concept of inventory management brings in the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through factories and warehouses to end the user/customer. The study confirms that a firm's success depends on how they manage their materials effectively.

Methodology

A descriptive research design was used in this study. The study population consists of employees and management of the selected consumable goods manufacturing companies in Ilorin, Kwara state which comprises of 600 made up managers at each department and their supporting staff. The sample size for this study was determined using Taro Yamani (1964) formula as shown below;

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

Where;

n= sample size required

N= number of people in the population = 600

e= $\frac{N}{1+N(e)^2}$ le error (%) $\frac{600}{1+600(0.05)^2}$

n= = = 240

The research instrument used for the purpose of the study was questionnaire as this was an efficient way of gathering data within the resources and time constraints. The Regression analysis was adopted to test the hypothesis

formulated in the study. The data was summarized, coded and tabulated using Statistical Package for Social Sciences (SPSS).

Testing of Hypothesis and interpretation of Result

Ho_1: Automated Inventory System does not have significant effect on Organizational Productivity

Statistical tool: Multiple Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.849[a]	.721	.719	.28225

a. Predictors: (Constant), Automated_inventory_system

Source: SPSS Printout, 2020

The model summary revealing the extent to which automated inventory system influence organizational productivity. The table shows Correlation coefficient (R) and R-square to be 0.849 and 0.721 respectively. This explains that automated inventory system have significant effect on organizational productivity and automated inventory system explain for about 72.1% of the variations in organizational productivity and the remaining 27.9% was explained by other factors not included in the model.

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.889	1	48.889	613.677	.000[b]
	Residual	18.960	238	.080		
	Total	67.849	239			
a. Dependent Variable: Organizational_productivity						
b. Predictors: (Constant), Automated_inventory_system						

Source: SPSS Printout, 2020

The analysis of variance of automated inventory system. The result shows the F-statistic calculated to be 613.677 and P value of .000 which is less than 0.05 level of significance. This signifies that there is a significant effect of automated inventory system on organizational performance.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.692	.142		4.875	.000
	Automated_inventory_system	.839	.034	.849	24.773	.000

- Dependent Variable: Organizational_productivity

Source: SPSS Printout, 2019

The co-efficient table reveals the coefficient values of automated inventory system, with a constant value of 0.692 which implies that there will always be 0.692 units of change in automated inventory system. Equally, a unit change in collaboration channels will result in 0.849 units in organizational productivity provided other variables remain constant, though significant as P value of 0.000 is greater than 0.05.

Decision rule:
Since the F-calculated value of 613.677 is greater than F critical and P value of 0.00 is less than 0.05, the null hypothesis is rejected while the alternative hypothesis which states that automated inventory system influence organizational productivity is accepted.

However, this study achieved the objective one through the outcome of hypothesis I. Hence, automated inventory system does have significant influence on organizational productivity. This necessitates the rejection of the null hypothesis and accepting the alternative hypothesis. This outcome was in line with the work of Chase (2009), explained the concept of inventory management brings in the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through factories and warehouses to end the user/customer. The study further confirms that a firm's success depends on how they manage their materials effectively.

The findings from this study shows that automated inventory system have significant effect on organizational productivity. This effect was evidenced from R square value of 0.721 which depicts that automated inventory accounted for 72.1% in organizational productivity. This was statistically significant as the probability value is less than 0.05.

Conclusions and Recommendations

The study therefore conclude that Automated inventory system had a strong and significant influence on organizational productivity putting into consideration all automated inventory system factors. Manufacturing companies should ensure that there are sufficient stocks to meet production

requirements and customer demands at all times. Based on this conclusion, the study recommend that;

i. Manufacturing companies should avoid holding unnecessary surplus stocks that may increase holding costs and enhanced organization production efficiency. Effective access controls should also be put in place to ensure that only authorized personnel access and remove stocks.
ii. The organization should embrace efficient inventory management practices that could ensure optimal investment in inventories as strategy for gaining competitive advantage over competitors.
iii. The organization should also adopt more modern sophisticated techniques such as the Just-In-Time systems, Economic Order Quantity model, and so on in their operations to ensure control of inventory so as to obtain cost efficiency and effectiveness.

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