

# An Empirical Review of Inventory Management and Control System in International Breweries Plc

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**Abstract:** - This study evaluated the inventory management and control system in International Breweries Plc using a survey research design. The study highlighted the adequacy and effectiveness of the company's inventory management and control system. Primary data were sourced through administered questionnaire. The result generated from the study showed that the company operates an effective, efficient, adequate and properly implemented inventory management and control system as responses were in 100% affirmative of that. The study thus concluded that efficient inventory management and adequate accounting practice employed for recording inventories by International Breweries Plc, contribute significantly towards ensuring reduction in ordering and carrying cost of inventory. The appropriateness of inventory valuation employed by the company was evaluated.

**Keywords:** Inventory Management, Control, International Breweries Plc

## I. INTRODUCTION

Business organizations in emerging economies like Nigeria require proper inventory management and control techniques to be put in place. Inventory management is the economics of stockholding (Adeyemi & Salami, 2010). Investment in inventories is one major component of cost in many manufacturing organizations which should be managed efficiently to ensure profitability. Good inventory management system will advise company management on lowest possible total cost of maintaining and handling of inventories. Bad inventory decisions can however, reduce an organization's profitability, whittle away at its market share, and generally wreak havoc on its supply chain. The goal of inventory management is to have goods in stock when you need them. Morris (1995) posit that inventory management in its broadest perspective is to keep the most economical amount of one kind of asset in order to facilitate an increase in the total value of all assets of the organization – human and material resources. It is therefore, imperative to manage inventories efficiently and effectively in order to avoid and prevent wastage of investment.

A company must maintain a suitable level of inventory because its excess or shortage could be detrimental to the company. This was buttressed by Schroeder (2000). The study asserted that inventory management has an impact on all business functions, particularly operations, marketing, accounting, and finance. Many manufacturing companies have too much of their limited capital resource tied up in inventory. Hence, the issue of how to manage inventory

effectively and efficiently can pose challenge for most manufacturing concerns as capital of some companies may be tied in wrong inventories. Inventory may be old, worn out, shopworn, obsolete, or the wrong size or colour, or there may be an imbalance among different product lines that reduces the customer appeal of the total operation. Accurate information on the cost of stock is necessary for management control of working capital requirement. Poor inventory management is some of the challenges that affect most companies. Problems associated with inventory management are; unavailability of raw material, determination of optimal level of stock as well as the discrepancy between policy and practice in stock management. This study considers how inventory in manufacturing companies are being managed. The research seeks to increase knowledge on the inventory management system and techniques employed by International breweries plc. The broad objective of this study is to appraise the inventory management system in International Breweries plc. The specific objectives were to:

- i. Examine the operational efficiency of inventory management & control system of International Breweries Plc in ensuring optimum stock level and reduction in ordering & carrying cost;
- ii. Assess the adequacy of accounting practice in use by International Breweries Plc for recording inventory; and
- iii. Appraise the appropriateness of method of inventory valuation employed by the company

The research study will be beneficial to manufacturing companies in evaluating their efforts with regards to stock control and maintaining production capacity thereby reducing loses and wastages that may occur through deterioration and obsolescence.

## II. REVIEW OF RELATED LITERATURE

### 2.1 Inventory management policies

Inventory management policies as noted by Reid & Sanders (2010) affect all functional areas of an organization in that accounting is concerned with the cost implications of inventory; marketing is concerned with how stocking decision affect the level of customer service and information systems tracks and controls inventory records. Inventory Management is considered imperative as it provides acceptable level of customer service (i.e. on-time delivery), allow cost-efficient operations and minimize inventory investment. Egberi and

Egberi (2011) further noted that it is not unnecessary to have an appropriate set of policies concerning the items to carry in inventory, the level of inventory control and management of stocks since it constitutes a significant part of current assets of manufacturing companies. It comprises the raw materials, component parts, work-in-process, and/or finished products that are held at a location in the supply chain backed by considerable amount of funds committed to them. Therefore, the basic goal of a manufacturing concern is to maintain a level of inventory that will provide optimum stock at lowest cost. Inventory management provides the materials and supplies needed to support actual manufacturing or service operations. Inventory replenishment policies guide the master production scheduler when determining which jobs and what quantity should be scheduled. Inventory management policies also affect the layout of the facility. A policy of small lot sizes and frequent shipments reduces the space needed to store materials while longer throughput times reduce an organization's ability to respond quickly to changing customer demands. Each organization thus designs applicable policy for determining appropriate order quantity per period.

### 2.2 Reasons, Costs and Motives for holding inventory

Lucey (2003) identified different the following reasons for holding inventory; to ensure that sufficient good are available to meet anticipated demand; to absorb variation in demand and production; to provide a buffer between production processes; to take advantage of bulk purchasing discounts; to meet possible shortages in the future; to absorb seasonal fluctuations in usage or demand; to enable production processes to flow smoothly and efficiently; as a necessary part of the production process; and as deliberate investment policy particularly in times of inflation or possible shortage.

Rosenblatt (1977) however, pointed out that the cost of maintaining inventory is included in the final price paid by the consumer. Holding cost refers to money incurred to keep and maintain a stock of goods in storage. These costs are also known as carrying costs and includes the opportunity cost of reduced responsiveness to customers' changing requirements, slowed introduction of improved items, and the inventory's value and direct expenses, since that money could be used for other purposes. Costs of obtaining inventory include the following; the clerical and administrative costs associated with the purchasing, accounting and goods received departments; transport costs and the set up and tooling costs associated with each production run for goods manufactured internally. Stock out costs are associated with running out of stock which include; lost contribution through the lost sale caused by the stock out; loss of future sales because customers go elsewhere; loss of customer goodwill; cost of production stoppages caused by stock outs of W.I.P. or raw materials; labour frustration of stoppages; extra costs associate with urgent replenishment purchases; back order handling, and lost sales.

Drury (1996) described inventory as a stock of goods that is maintained by a business in anticipation of some future demand. According to Schroeder (2000), there are three motives for holding inventories namely; transaction, precautionary and speculative motives. The transaction motive occurs when there is a need to hold stock to meet production and sales requirements. A firm might also decide to hold additional amounts of stock to cover the possibility that it may have under estimated its future production and sales requirements. This represents a precautionary motive, which applies only when future

### 2.3 Effective Inventory Management

Inventory management is a critical component of profitability. It can be deemed to be effective when it is premised upon a system to keep track of inventory, a reliable forecast of demand, adequate knowledge of lead times, reasonable estimates of holding costs, ordering costs and shortage costs. A good classification system should be in place as any lapses observed in inventory management could cause losses due to shrinkage or pilferage. A company's management has the responsibility to ensure control of its inventory through application of techniques such as: good personnel selection, training, and discipline, tight control on incoming shipments and effective control on all goods leaving facility. Inventory control helps to match supply and demand in the most cost effective way to hedge against uncertain demand, ensure smoothing and economize on ordering costs. Some of its benefits are; it assures proper execution of policies covering procurement and use of materials and makes possible rapid shifts in business to meet changes in market conditions; it obtains economies through a reduction in needless variety of items carried in stock; it eliminates delays in production caused by non-availability or required materials and tools; it avoids over accumulation of inventories and tools and thereby maintains the minimum investment consistent with production needs and procurement; it reduces inventory losses caused by inadequate inspection of incoming materials, damage, deterioration, obsolescence, waste or theft; and it provides balanced stores records to serve as a reliable basis for effective production planning, economical procurement, cost accounting and preparation of financial reports.

### 2.4 ABC Classification System and Cycle Counting

This involves classification of inventory according to some measure of importance and allocating control efforts accordingly in order to determine level of control and frequency of review of inventory items. It is also referred to as ABC analysis where; A is very important, B is moderately important, and C is least important. The classification system is used to establish policies that focus on the few critical parts and not the many trivial ones while other criteria such as anticipated engineering changes, delivery problems, quality problems, high unit cost may be used. Such policies employed may include: more emphasis on supplier development for A

items; tighter physical inventory control for A items and more care in forecasting A items

Cycle counting is often used with ABC analysis to determine cycle inventory cycle by conducting physical count of items in inventory where and recording items counted on a periodic basis (Heyl, 2011). Cycle counting management addresses the questions of how much accuracy is needed, when should cycle counting be performed and who should do it? This ultimately eliminates shutdowns and interruptions, annual inventory adjustment by ensuring maintenance of accurate inventory records through trained personnel while causes of errors are detected and corrected early. An organization can employ any of the following inventory counting systems to substantiate the cycle counting; Physical count of items made at periodic intervals; System that keeps track of removals from inventory continuously, thus monitoring current levels of each item; two containers of inventory to allow for reorder when first becomes empty; and universal bar code printed on a label that has information about the item to which it is attached.

### 2.5 Review of Empirical Literature

Anderson, Fitzsimons & Simester (2006), investigated the effectiveness of different responses that firms can offer to mitigate the cost of stock outs by reporting on the findings of a large-scale field test that measures the short- and long-run opportunity cost of a stock out. Findings from the study confirmed that the adverse impact of a stock out extends to both other items in the current order as well as future orders. The study revealed how inability to account for the long-run effects of a stock out will lead to suboptimal inventory decisions. The findings have important implications for retailers considering the use of discounts as a response to stock outs. Saygin (2007) conducted a study on adaptive inventory management using RFID data. The study compared three inventory management models that rely on RFID data on the basis of service level, cost, inventory and waste reduction, and decision-making complexity. The study conducted by Adu-Bobi (2009) on inventory management practices of Soap Manufacturing Firms in Ghana showed that the company operated a periodic review system as well as a just- in-time environment as regards inventory management practices. Kim, Kwon and Kwak (2010) studied a multi-stage inventory control with nonstationary customer demand under a customer service-level constraint. The study proposed a multi-agent based model for distributed inventory control systems. You-jun, Liang, and Yi-qian (2011) investigated the optimal inventory model with many orders and permissible shortage. The study employed stationary ordering policy while Lagrange Multiplier Method was used to prove that the stationary ordering policy is the optimal ordering policy. Imeokparia (2013), explores the relationship between inventory management and control and performance in Food and Beverages companies in Nigeria. Findings from the study showed that there is significant relationship between inventory management and control and the

performance of Food and Beverages companies in Nigeria. Gokhale, and Kaloji (2018) conducted a Study on Inventory Management and Its Impact on Profitability in Foundry Industry at Belagavi. The study established that inventory management covers the efficient and effective use of raw materials and spares which are consumed in producing the finished goods in manufacturing concern. The study noted that long run profitability of firms could be jeopardised when management of inventories is ignored.

### III. METHODOLOGY

This study employed a survey research design. The study population consisted of International Breweries Plc's staff members. Fifty (50) copies of questionnaire were administered to elicit information from randomly selected staff members of International Breweries Plc on the inventory management system and techniques put in place by the management. Only twenty-five (25) were returned valid. Face validity was used to validate the research instrument. A convenience sampling technique was adopted to give equal chance of consideration to the population size. The sample size chosen is a balance between obtaining a statistically valid representation, and the time and access available. Accounting practice and procedures of the company were also observed to ascertain its adequacy.

### IV. RESULTS AND DISCUSSION OF FINDINGS

The study employed descriptive statistics to analyse data obtained.

#### Objective One

This objective was to specifically examine the operational efficiency of inventory management & control system of International Breweries Plc in ensuring optimum stock level and reduction in ordering & carrying cost.

Table 4.1 Operational Efficiency of Inventory Management & Control System of International Breweries Plc

	A	SA	D
Inventory management & control system exist in the company and its properly implemented	17 (68.0)	8 (32.0)	
Inventory management & control system of the company is constantly reviewed for effectiveness	19 (76.0)	4 (16.0)	2 (8.0)
The company's inventory management & control system is effective to track receipts & removals from inventory	15 (60.0)	8 (32.0)	2 (8.0)
Inventory management ensure that sufficient materials & goods are available to meet anticipated production and customer demand	16 (64.0)	9 (36.0)	
Production control unit of the company have control over stock of finished goods	16 (64.0)	7 (28.0)	2 (8.0)
Goods returned by customers are accepted in line with the company's policies	17 (68.0)	8 (32.0)	
Production process to flow smoothly in the company due to good inventory management	15 (60.0)	10 (40.0)	

Inventory are properly classified into raw materials, work in progress and finished goods	17 (68.0)	8 (32.0)	
Storage facilities of the company are adequate	12 (48.0)	12 (48.0)	1 (4.0)
Adjustment to inventory price or quantities are recorded in a timely manner and within the appropriate period	16 (64.0)	8 (32.0)	1 (4.0)
Effective control efforts are employed in monitoring each category of inventories	13 (52.0)	12 (48.0)	
Inventory are frequently monitored to ascertain reorder level per time	13 (52.0)	10 (40.0)	2 (8.0)
Reorder point of inventory is adequately determined based on production capacity and customer demand	16 (64.0)	7 (28.0)	2 (8.0)
There are competent personnel entrusted with the responsibility of implementing inventory management & control policies	18 (72.0)	7 (28.0)	
Sufficient inventory are constantly maintained to avoid stock out cost	18 (72.0)	7 (28.0)	
Computer system are in use for material ordering and tracking	18 (72.0)	7 (28.0)	
Inventory control & management in place is adequate to meet possible shortages in the future	13 (52.0)	12 (48.0)	

Source: Author's computation, 2019

Table 4.1 revealed the existence of inventory management and control system in International breweries plc. All (100%) the respondents affirmed that the inventory management system put in place by the management is adequate and properly implemented. Majority (92%) of respondents agreed that the inventory management system of the company is constantly reviewed for effectiveness and it is effective in tracking receipts and removals from inventory continuously. This is indicative of the functionality of inventory management system of the company. Also, all (100%) the respondents confirms that the company's inventory is properly classified into raw materials, work in progress and finished goods; that sufficient materials and goods are available to meet anticipated production and customer demand; and that material ordering and tracking procedures of the company are processed efficiently through the use of computer system. Furthermore, 92% of the affirmed that stock of finished goods are adequately controlled and monitored to ascertain in reorder per time; and that the company maintains adequate re order point as determined based on production capacity and demand. This is an indication of the efficiency of the company's inventory management system. Moreover, 96% of the respondents confirmed the adequacy of the storage facilities in use for all components of the inventory as well as the timely record of adjustment made to inventory price or quantities of the company in the relevant period. This is commendable. All (100%) the respondents confirmed that the company's personnel saddled with the responsibility of implementing policy issues regarding proper control and management of inventory are competent and well trained.

### Objective two

The focus of this objective was to assess the adequacy of accounting practice in use by International Breweries Plc for Inventory Records.

Table 4.2 Accounting practice in use by International Breweries Plc

	A	SA	D
Materials are properly identified through the use of bin card	13 (52.0)	6 (24.0)	6 (24.0)
Periodic inventory counts are regularly checked by a responsible personnel	16 (64.0)	9 (36.0)	
Discrepancies between physical counts and inventory records are reconciled prior to posting any adjustments to accounting records	15 (60.0)	10 (40.0)	
Physical counts are reconciled to the general ledger	12 (48.0)	13 (52.0)	
Procedures are in place to adjust slow moving, obsolete or damaged items to their expected realisable value	17 (68.0)	8 (32.0)	
There is proper control over the receipts and issuance of materials	18 (72.0)	7 (28.0)	
Proper documentation of inventory receipts and issues are done through stock cards, goods received notes and store issue vouchers	10 (40.0)	13 (52.0)	2 (8.0)
All transfer of raw materials to production are recorded accurately on real time basis and in the appropriate period	12 (48.0)	13 (52.0)	
All transfers of completed units of production to finished goods inventory are recorded completely and accurately in the appropriate period	9 (36.0)	16 (64.0)	

Source: Author's computation, 2019

Table 4.2 revealed that 76% of the respondents agreed that company's materials are properly identified through the use of bin card. Although, 24% of the respondents disagreed, yet, it can justifiably conclude that the company uses bin card system in its operation. All (100%) the respondents confirmed that the company performs periodic inventory counts through assigned responsible personnel. Also, all (100%) the respondents confirm that any discrepancies resulting between physical counts and inventory records are regularly reconciled prior to posting the adjustments to accounting records including general ledger used in capturing the inventory value during any financial period. The study also showed that there exist instituted effective procedures to adjust for slow moving, obsolete or damaged inventory to their expected realizable value as shown from the responses of the respondents in table 26 above. This indicates that the company adjusts for any impairment on the inventory items in their books as required by the accounting standards. From table 27, it can be noted that all the respondents agreed that receipts and issuance of materials are properly controlled by the company. From table 28 above, it can be noted that 92% of the respondents agreed that the company maintains proper documentation of inventory receipts and issues through stock cards, goods received notes and store issue vouchers while 8% of the respondents disagreed with the position. All the respondents

agreed that transfer of raw materials to production are recorded accurately by the company on real time basis and in the appropriate period. Based on responses from table 30 above, there is adequate and complete record of all transfers of production to finished goods as all respondents affirmed this.

### Objective three

This objective was specified to appraise the appropriateness of method of inventory valuation employed by International Breweries Plc

Table 4.3 Method of inventory valuation in use by International Breweries Plc

Inventory valuation method	FIFO	Weighted Average
Method of inventory valuation in use by the company	7 (28.0)	18 (72.0)

Source: Author's computation, 2019

Table 4.3, 72% of the respondent confirmed that the International Breweries Plc mostly employ weighted average method of inventory valuation but rarely use first in first out (FIFO) method for its inventory valuation. The two methods are suitable and appropriate in line with the requirement of International Financial reporting standards (IFRS). International accounting standard (IAS) 2 specifies the method of inventory valuation that can be used by companies.

## V. CONCLUSION AND RECOMMENDATIONS

This study empirically investigated the inventory management and control system in International Breweries Plc to determine its adequacy and effectiveness. Findings from this study showed that; the system is being managed to ensure reduction in company's ordering and carrying cost; inventory are frequently monitored to ascertain reorder level per time while production capacity and customer demand provide basis for determining the reorder point; the company mostly employ weighted average method for its inventory valuation; the company's accounting practice to record inventories is adequate; periodic inventory counts are regularly conducted by responsible personnel and any observed discrepancies reconciled before posting to accounting records; the company also operates a system that adjusts for slow moving, obsolete or damaged items to their expected realizable value in line with impairment requirement of accounting standards. The study concluded that the company operates an effective, efficient, and properly implemented inventory management and control system. The study recommended that fully automated inventory

management system should be adopted by management of International Breweries Plc which should be well integrated with other departments the company. Consequently, the study established that properly implemented inventory management system are significant in monitoring, tracking and recording receipts and issuance of inventory due to its direct effect on survival, growth and stability of the company. The results thus bring evidence on the dynamic role of inventory as a core component in the manufacturing industry.

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