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Effect of Strategic Inventory Management on Performance of Small-Scale Manufacturing Firms in Lagos State, Nigeria

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Abstract:

The aim of the study is to investigate the effect of Strategic Inventory Management on the Performance of Small-scale Manufacturing Firms. The study used primary data to obtain necessary information from the firms. The population size includes 31 Small-Scale manufacturing firms situated in Ikeja, Lagos State, Nigeria. A simple random technique was used to select 220 respondents from the departments of Production, Marketing and Administration.

Data on variables such as Inventory Management tools, Strategic decision policy and performance variables were sourced from the respondents with the questionnaire, and analyzed using descriptive and inferential statistics.

The study showed that Strategic Inventory Management influences better performance of the small scale manufacturing firm if appropriately used. Inventory management tools like the ABC system, Two-way bins, EOQ, Production Lot Size and Quantity discount Model should form the bedrock of their inventory management practices. The study concluded that inventory management facilities should be provided by small scale manufacturing firms to support their performance technically which will bring about improved performance.

Keywords: Strategic, inventory, management, performance, small-scale, and manufacturing

1. Introduction

Inventory Management is useful in commercializing work ideas and implementations successfully. Therefore, it could be fatal for companies to ignore the importance of good Inventory Management, (Lawal, 2012). Many companies have failed because their inventories tied up too much capital (funds), or the items in inventory became obsolete, impaired or lost, (Amogu, 2005). It is evident that the profitability of any business organization depends largely on the ability of management to exercise effective purchasing and efficient material control. However, the problem of most companies is the lack of "know-how" in this area of operations. This may be part of the reason why many businesses failed.

Strategic inventory management deals with inventory control system design for a long period (Ajiebefun, 2009). It consists of the analysis, decisions, and actions that organizations undertake for management of their stock. The inventory policies are made in order to create and sustain competitive advantages, (Wikipedia, 2014). The definition captures two main elements that are central to the concept of strategic inventory management. First, the strategic inventory management of an organization entails three ongoing processes: analysis, decisions, and actions. That is, it is concerned with the analysis of strategic goals (vision, mission, and strategic objectives) along with the analysis of the internal and external environment of the organization. The leaders must make strategic decisions about their stock holding policy. These decisions, broadly speaking, address two basic questions: What quantity of stock should we hold for the long run and when should we hold them? Small-scale enterprises are called small businesses. Fabayo (2009), defines small-scale enterprise as a business that employs a small number of workers and does not have a high volume of sales. Such enterprises are generally privately owned and are operated by a sole proprietorships, corporations or partnerships in some instances.

This study intends to solve problems associated with strategic inventory management by small-scale manufacturing companies and their operational performance which act as a fundamental concept behind the present study.

1.1. Problem Statement

Inventory management and control have long been recommended as a way of improving organization effectiveness and performance by many researchers in the field. Asaolu, Agorzie and James (2012) after a research into material management in Food and Beverage Manufacturing Industry came up with the conclusions that: Material management by those organizations will help them in saving cost hence increasing their overall profit. Material management by those organizations will help in improving their production efficiency. The opinion was not totally in line

with the work of Ayo, Oladeji, and Oke (2004) that said inventory management work mostly for big manufacturing companies. These make viable inventory management very challenging, particularly for the small scale businesses in the manufacturing industry. In most cases peculiar to the small scale manufacturing organizations, inventory constitutes 60-75% of their working capital as a result the money entrusted on inventory is much, thereby affecting the operational performances of the business (Temeng and Eshun, 2010). Most of the small scale manufacturing organizations practice inventory management informally or unconsciously. Researchers have not considered the Strategic inventory management and control adopt by the small scale manufacturing organizations. Hence; this study looks into how small scale manufacturing companies can manage their inventory effectively and how it affects their organizational performance.

1.2. Research Objectives

- To determine the level of awareness of inventory management at operational level by small-scale manufacturing companies in Nigeria.
- To examine the effect of strategic inventory management on operational performance of small-scale manufacturing companies in Nigeria.

1.3. Justification of the Study

The study will be of help to small-scale business owners and entrepreneurs in the small-scale manufacturing segment of the economy. It will help them in the area of stock management in their operational activities. The study will also extend the knowledge of inventory management and control policy of organizations by assessing the operations performance of small-scale manufacturing companies in line with strategic inventory management.

1.4. Scope of the Study

The study focused on the small-scale segment of the manufacturing industry. Small-scale manufacturing companies situated in Lagos-state, southwest part of Nigeria are studied to know the effect of inventory management on their operational performance. Small-scale companies that have the certificate of operation from the corporate affairs commission in Lagos-state, southwest Nigeria are considered for this study.

2. Literature Review

Inventories are stock of item or resource used in an organization. On the other hand, management is an act of organizational design. Osotimehin (2006), defines Inventory as stock or store of goods. Osotimehin definition see inventory as stock that are currently un-used in an organization. The currently un-used stock can be finished goods, raw-materials or work in progress. Inventories can also be sub-assembled product. For instance, a gear-box of a vehicle kept in an organization can only constitute part of the materials that would make-up the vehicle. The sub-assemble inventories are the same as dependent inventories because of their nature while finished goods inventories are independent.

Inventory management is defined as a science based art of ensuring that just enough stock is held by an organization to meet their demand (Cunningham, 2000). The above definition shows that in managing inventory, a scientifically based approach is used so as to ensure balance in inventory hold and cost of holding it. Nweze, (2004) defines inventory management as a form of administration control that is particularly essential in all manufacturing, wholesale and retail organizations.

2.1. Reasons for Inventory Management

Inventories are sensitive items that can make or mar the success of an organization. Inventories constituted the larger part of some organization raw-materials. Further, Cooper, (2006) argue that to meet customer demand, firms have to ensure that stock-outs are avoided without incurring high inventory costs. The vital part that inventories play in the success of an organization makes it a sensitive issue for organizations. Plossl (2005), identified three major reasons for holding inventories which are transactionary motives; precautionary motives and speculative motives. The transactionary motive has to do with the need to maintain inventory to facilitate the smooth production or sales operation of day to day transaction. The precautionary motive of inventory holding is to guard against the risk of unpredictable change in demand and supply forces and other factors. The speculative motive influences the decision to increase or decrease inventory level to take advantage of price fluctuation.

2.2. Types of Inventory

Inventory managed by organization depends on the nature of product and operations. We have organizations with unfinished products as their raw-materials while some make use of both finished and unfinished products as their raw-materials. Omolehinwa, (2000) tries to elucidate this concept when he says inventories can be raw materials, Semi-finished materials or finished good. In 1980s 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 (Temeng, &Eshun, 2010). However, large buffer inventories consume valuable resources and generate hidden costs (Temeng, &Eshun, 2012). Too much inventory consumes physical space, creates a financial burden, and increases the possibility of damage, spoilage and loss (Oba, 2008). On the other hand, too little inventory often disrupts business operations (Vohra, 2008). The rationale behind this is to identify the different types of inventories that can be held by organizations which can be summarized into four types. Ile (2002), opines that inventory is classified into four types which include; raw material inventory, work-in progress inventory, finished goods inventory and maintenance inventory.

2.3. Inventory Control System

The cardinal objective of inventory management is the maintenance of an optimum level of inventory necessary to support the production system at any time and at least cost possible.

2.3.1. The Fixed-Order Quantity System

In the fixed-order size system, orders for a fixed quantity of items are placed for each inventory order cycle. The time of ordering may vary but the quantity ordered per period is always the same. This system is sometimes referred to as the (Q,R) system. When inventory level gets as low as point R (reorder point), an order is placed for Q units of inventory.

2.3.2. The Fixed-Order Interval System

The fixed-order interval system examine the status of inventory level at a specific period and tries to bring the inventory level to a desired point, if the inventory level has gone below the minimum required point in-between the time of the periodic reviews.

2.3.3. The ABC Inventory Analysis

ABC analysis is also refers to as "Always better control". The system sorts out items in order of their important to organization operations. The items are arranged in ABC form and monitored so as to ensure proper management at different categories of the inventories.

2.3.4. FSN Inventory Analysis System

FSN Inventory Analysis System is another system of inventory management which is common in organizations that produces perishables product or event using perishable inventories. The analysis is used to control the system at which they manage those perishable items. The item is classified to fast-moving (F), slow-moving (S) and Non-moving (N) items. The Non-moving takes a lengthy time in the stock and can be accommodated for long or even disposed in some cases if not used for a long time. The other two that are fast and slow are easily classified for proper arrangement in stores and handling methods.

2.3.5. SDE Inventory Analysis

SDE Inventory Analysis is known as spare availability system that is based on spares availability of items. Omolaja (2012) explains that the "S" refers to items that are scare to acquire. They are necessary in the production activity but can only be gotten through difficult means. Most of such items are always imported and are too expensive. "D" are difficult items that requires stiff competition before being acquired such items are always advisable to be acquired in excess and keep for future operations. The "E" items are easily gotten materials that can be acquired without much stress.

2.3.6. Universal Serial Code" (USC) System

Osoimehin (2006), shed more lights on how organizations uses a serial code number to monitor the inflow and out flow of their inventories. The uniqueness of this system is that, it is highly computerized and is used by many modern day organizations.

The conceptual reviewed work all came-up with their understanding of what inventory management really means. Inventory management is a science based art of ensuring that just enough inventory stock is held by an organization to meet demand (Coleman, 2000; Jay and Barry, 2006). Banjoko (2000), classified inventory to be either raw-material, work-in-progress or finished good. Uzoagulu, (2011), said most of the reasons for inventory management by organizations are to safeguard against shortage and meet anticipated demand among other.

2.4. Small-scale Manufacturing Business

There is no single criterion for classifying business enterprises as small or medium scale globally. In a study carried out by International labour Organization (2005), over 50 definitions were identified in 75 different countries. However, evidence from literature shows that in defining small- scale business, reference is usually made to some quantifiable measures such as: number of people employed by the enterprises, investment outlay, the annual turnover (sales) and the asset value of the enterprise or a combination of these measures. Ajiebefun and Daramola (2003) defined small scale enterprises as commercial enterprises that have ten or fewer employees. According to CBN (2014) small-scale business is an organization that have a capital of N250,000 and below and can employ between 2-50 workers. In the western part of the world (Europe) a small enterprises are those that have 250 employees or less (small business act for Europe). The reality about small-scale businesses is that they are organizations that serve as backbone to the economics development of a nation.

Small scale enterprises have contributed immensely in diverse ways to the Nation's economy. Oba (2008) and Nweze (2004) observed include: innovation and flexibility, employment creation, promotion of even development and reduction of income disparities, output expansion, production of intermediate goals, increase in revenue base of government, transformation of indigenous technology, utilization of local resources, contribution to consumer interest, keeping larger firms competitive, maintaining close relationship with customers and community, providing comprehensive learning experience, developing risk takers and contributing to the balance of payment.

2.5. Operational Performance

Business involves various activities that satisfy the needs of people which has been identified. The implementation involves activities like research, production, marketing, transportation etc Cooper (1998). The final outcome of such activities is of paramount to the owner. Operational performance of the businesses is measure in terms of its material management, product quality, customers' satisfaction, labour productivity and sustainable production run system.

GEM, (2004) defined Performance as the act of performing; of doing something successfully; using knowledge as distinguished from merely possessing it. However, performance seems to be conceptualized, operationalized and measured in different ways thus making cross-comparison difficult. Cooper et al (1998) examined various factors which influence operational performance such as: as experience, education, occupation of parents, gender, race, age, and entrepreneurial goals. Hisrich (2004) after a study conducted on Israeli women entrepreneur categorized the factors that affect their performance into five perspectives.

2.6. Inventory Management Theories

2.6.1. Economic Order Quantity (EOQ)

The EOQ model is one of the notable theories that can be used in managing inventories. The theory was developed by Ford Harris in 1915. This theory was justified in the study of Adeloye (2010) in manufacturing companies on the relationship between their profitability and inventory management. The theory is a derivation of the deterministic model used in inventory management. It is deterministic in nature because of some fundamental assumptions about the behavior of the parameters or component variables that are eliminated. The assumptions that guide the EOQ model include; That there is a known, constant, stock holding costs; That there is a known, constant ordering costs; That the rates of demand are know, That there is a known constant price per unit, That replenishment is made instantaneously, that is the whole batch is delivered at once, No stock-outs are allowed.

The model tries to establish the relationship between inventory holding cost and ordering cost. Inventory ordering and usage occur in cycles. The cycle begins with getting of order that is used at a constant rate over time. The order for more items or quantity is submitted to the supplier when the quantity at hand is enough for production activities within the time the order is placed and the time the order will be received. The model of EOQ sees Q as the quantity order that will minimize the sum of inventory holding and or ordering cost. The average inventory would simply be the half of the order Quantity $\frac{Q}{2}$. The derivation of total inventory cost can be represented by the equation;

$$T_c = C_i D + C_o \frac{D}{Q} + C_c \frac{Q}{2}$$

If EOQ minimize this cost, then $D \frac{(T_c)}{d_0} = 0$

$$\therefore \text{EOQ} = \sqrt{\frac{2C_o D}{C_c}}$$

The question of how much order to make has been easily solved by the EOQ model above and other questions about when to order, how frequently to request for an order can be easily determined.

2.6.2. Economic Production Lot Size

The reality about life is that not all the time that stock or inventory will be received in bulk in contrast to the assumption of instantaneous replenishment by Ford Hairs in the EOQ model. There may be time which stock for production would be received in batches. Omolaja (2012), says that some inventory is received in batches especially in organization that combine material production and product user together. The units of inventory will be supplied at a constant rate i.e. usage and production over many days or weeks and not once. The model sees the constant rate supply as part of the production activities until the period has been completed. In a situation like this, inventories is build-up when production or supply rate exceed the usage rate ($P > U$). The build-up continues until when production cease and inventory will be at maximum. The organization total cost can thus be s implified as;

$T_{c_{\min}} = \text{Carrying cost} + \text{setup cost}$

$$T_c = \frac{Q}{2} C_c \left[1 - \frac{u}{p} \right] + \frac{DS}{Q}$$

$$\text{Economic Run size Quantity } Qp^* = \sqrt{\frac{2DS}{C_c}} \times \sqrt{\frac{p}{p-u}}$$

It must be noted that the average inventory for this model will now be $\left[\frac{Q}{2} \left[1 - \frac{u}{p} \right] \right]$ and the maximum inventory level is $Q \left[1 - \frac{u}{p} \right]$. The Economic production lot size model is a model that helps the supplier in satisfying the requirement or pattern of the model base on a specific duration.

2.6.3. Quantity Discount Model

A good strategy for attracting customers to buy more is by giving them discount on number of quantity bought (Jonah, 2012). It must be noted that the assumptions of the EOQ dis-allowed discount whereas in real-life situation, vendors use discount to keep their customers happy. Egbetokun et al(2013) after a thorough investigation in supply chain operations ascertained the fact that quantity discount always influence the purchase decision of firms as they tends to buy more at a given quantity discount rate. The quantity Discount model goes further than only determining the order

quantity that minimizes cost alone but the quantity that would also put quantity discount into consideration with cost. The effects are Lower item price and larger order quantity which result in less order so that ordering cost is reduced. Another effect is increased carrying cost arising from the extra stock holding as a result of average stock levels that has becomes higher due to larger quantity order to take advantage of price discount given. The model derives the normal economic order Quantity [EOQ] with the detailed information given using all the different price-break. The total cost for each feasible quantity of the different price-break is now computed before the decision on number of order to place is made. The total cost (T_c) computation is represented by the equation:

$$T_{cQ} = C_1D + C_0 \frac{D}{Q} + C_c \frac{Q}{2}$$

The Quantity Discount Model also uses holding cost that are constant at different price-break and holding cost that are in percentage of purchase price at different price-break in some instances.

2.6.4. EOQ with Shortage

The assumption of no-stock out by the EOQ model can be violated in some cases if situation or some factors caused a stock-out in an organization which may have adverse effects on their production activities. The assumption of no-stock-outs appears to be restrictive in inventory system since it is sometimes costly to operate at 100% service level without shortages or stock-outs. Orga (2006) investigating back order in a service company ascertained the fact that some customers and service providers might concur with this arrangement especially in situation where the service/product concern are scarce. They however justified the fact that the back order arrangement would have customer's preference when those order arrived. The customer is promised and also given the priority with immediate delivery upon the arrival of the goods. The model now extends the total cost by including the stock-out cost. The total cost equation can then be represented with the equation below.

$$T_c = C_1D + C_0 \frac{D}{Q} + C_c \frac{Q}{2} + C_b$$

The economic order Quantity will then be represented as;

$$Q^* = \sqrt{\frac{2DC_0}{C_c} \left[\frac{C_c + C_b}{C_b} \right]}$$

The average inventory for this model will then be $\left(\frac{Q-s}{2}\right)$ and the constant daily demand is $\frac{(Q-s)}{d}$ days.

2.6.5. Probabilities Models

The deterministic inventory models assumed that there is no uncertainty i.e. the demand and usage rate are known and when they are at buffer-stock they are known. The time to order is much easier in the deterministic model of inventory. The issue of variability in annual demand and usable brings about uncertainty and therefore render the deterministic model irrelevant in such situation. The probability of stock-out during lead-time will come into play. The use of standard distribution of lead time demand will give the probability of stock-out during the lead time. The inventory decision is made on probabilistic terms because the exact demand is unknown. This model also refers to as a stochastic inventory model (Lucey, 1992). The knowledge and experience of historical data together with some judgment are used to obtain the lead time demand distribution. It is usually assumed to be a normal distribution with some values. The distribution is represented in the diagram below if our mean is denoted by μ and standard deviation denoted by σ .

$\mu = x_1$ and $\alpha = x_2$. Then the distribution shape may appear like the shape below where x_1 is the mean value for the distribution and x_2 is the standard deviation value for the distribution.

2.7. Operational Performance Theories

2.7.1. Theory of Constraints

The theory of constraints is a management philosophy that seeks to increase manufacturing throughput efficiency or system performance measured by sales through the identification of those processes that are constraining the manufacturing system (Goldratt, 2004). Kazim, (2008), argues that theory of constraints is based on the principle that a chain is only as strong as the weakest link or constraint and to elevate and manage the constraint as necessary.

2.7.2. Lean Theory

Lean theory is an extension of ideas of just in time. (Kros, Falasca, & Nadler, 2006), elaborate just in time as a pull-based system designed to align the production and business processes throughout the supply chain. (Green & Inman, 2005), assessed the impact of lean theory on financial performance. They say that theory may eliminate buffer stock and minimize waste in production process. (Eroglu & Hofer, 2011), found that leanness positively affects profitability of a business firm. They argue that inventory leanness is the best inventory control tool.

2.7.3. Material Requirements Planning (MRP)

Material requirements planning is standard system for calculating the quantities of components, sub-assemblies and materials required to carry out a production programme for complex products (Rushton, Phil, & Baker, 2011). The MRP process starts with a production programme which schedules the products to be completed week by week during the planning period. It is based on customer orders, sales forecasts and manufacturing policy (Farrington & Lysons, 2006).

2.7.4. Continuous Replenishment (CRP) System

Continuous Replenishment is an inventory control system that can be adopted by a small-scale manufacturing company. The aim of continuous replenishment is to develop free flowing order fulfillment and delivery systems, so that pipeline inventories can be substantially reduced (Baily, Farmer, Barry, Jessop, & David, 2008).

2.7.5. Distribution Resource Planning (DRP) System

Distribution Resource Planning is a system for forecasting or projecting requirements for finished products at the point of demand (Farrington & Lysons, 2006). DRP systems are designed to take forecast demand and reflect this through the distribution system on a time-phased requirement basis (Baily, Farmer, Barry, Jessop, & David, 2008).

2.7.6. Vendor Managed Inventory (VMI)

Vendor Managed Inventory (VMI) is where the manufacturer is given responsibility for manufacturing and controlling inventory level at the retailer's distribution centre and in some instances at the retail store level as well (Baily, Farmer, Barry, Jessop, & David, 2008). VMI is a process that falls under the 'push' stock management processes Irungu & Wanjau (2011).

2.7.7. Operational Performance Determinant in Manufacturing Firms

According to Bourne, Kennerley, & Franco-Santos (2005) performance measurement is traditionally concentrated on monetary indexes. However, operational performance is a measure of change of operations of small-scale manufacturing firms or their outcome resulting from use of inventory control systems. It is significant that what measured is not only important to the business firm but should also cover all core areas.

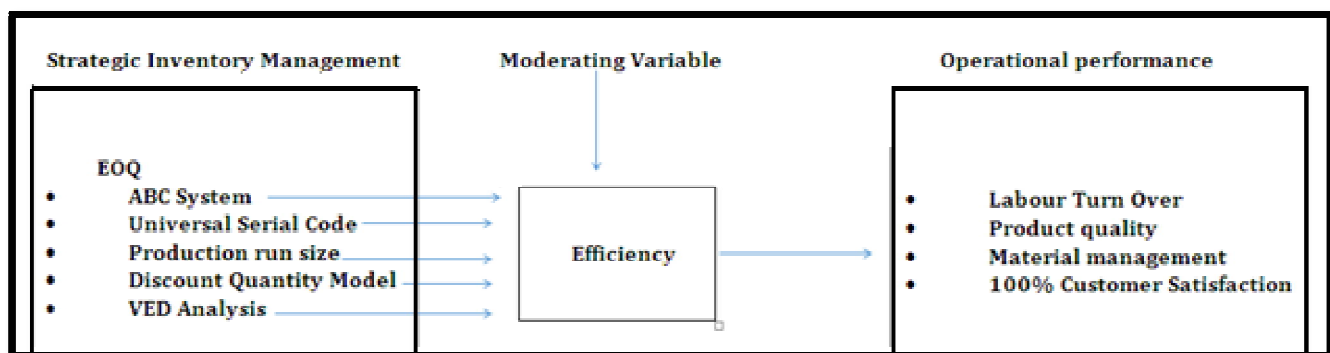


Figure 1: Conceptual Frame Work
Source: Researcher Conceptual Framework

3. Methodology

The study was carried out in Lagos-State, southwest geopolitical zone of Nigeria. Ikeja the state capital is the major location where the small-scale companies for this study were selected. A convenience sampling technique was used to select 31 small-scale manufacturing companies out of the three hundred and eleven registered small-scale manufacturing companies with the Lagos chamber of commerce. A total number of 220 respondents were selected with a systematic sampling technique from the population. This study adopt an applied research and the setting was a field work research. Investigations on this study were done through data gathered. The data for the study consists of both primary and secondary data. The primary data employed for the study are raw information that was gotten directly from the respondent by the researcher through a structured questionnaire. Copies of the questionnaire were administered to the respondents but 214 (99.1%) of them were returned from field.

4. Findings and Discussions

Table 1 below shows that male respondents exceeded female respondents. 118 (55.1%) male respondents against 96 (44.86%) female respondents. All the respondents to the study are working in a registered company. Total number 214 respondents which are 100% of the overall respondents are in a registered company. The distribution of the respondents on age basis shows that 27 (12.62%) respondents were above the age of 40 years, 148 (69.16%) were in between the age group 26-40 years with while 39 (18.22%) were at the range of 18-25 years. It can be inferred from the above that majority of the respondents fall within the youthful age category. The mean age of the respondent is 23years with standard deviation of 7.85. The table also indicates that 118 (55.14%) of the respondents are from the administration departments, 78 (36.45%) are in production department and 18 (8.41%) are from marketing/sales department. This shows that most of the respondents are responsible for the day to day administration of their organizations.

The distribution of the respondents on academic qualifications in Table 1 reveals that 96 (44.86%) of the respondents have OND certificate while 88 respondents possess HND/B.SC certificate (41.12%), 12 (5.60%) respondents have M.SC certificate and 18 (8.41%) respondents have professional qualifications. It can be inferred from the above that majority of the respondents fall within the OND and B.SC certificate category. The distribution of the firms workers shows that the range of 2-10 work strength is 39 (18.22%), company were their work force is 11-30 are 148 (69.16%) and 27 respondents have the workforce above 30 in their organization. Respondents that their company practice inventory

management are 139 (64.95%) and the non-users respondents are 75 (35.05%). All the above information is presented in Table 1.

Gender Distribution of Respondents FREQUENCY		
Gender	Absolute	Relative (%)
Female	96	44.86
Male	118	55.14
Total	214	100
Age Distribution of Respondents FREQUENCY		
Age	Absolute	Relative (%)
18 – 25	39	18.22
26 – 40	148	69.16
Above 40	27	12.62
Total	214	100
Distribution of Respondents by Department FREQUENCY		
Department	Absolute	Relative (%)
Administration	118	55.4
Production	78	36.45
Marketing	18	8.41
Total	214	100
Distribution of Respondents by Academic Qualification FREQUENCY		
Academic Qualification	Absolute	Relative
OND	96	44.86
HND/B.SC	88	41.12
M.sc	12	5.60
Professional certificate	18	8.41
Total	214	100
Distribution of Firms according to Number of Workers FREQUENCY		
Number of Workers	Absolute	Relative (%)
2 – 10	39	18.22
11 – 30	148	69.16
Above 30	27	12.62
Total	214	100
Distribution of Respondents by Company legal status FREQUENCY		
Company Legal Status	Absolute	Relative (%)
Registered	214	100
Non registered	-	0
Total	214	100

*Table 1: Socio-Demographic Characteristics of Respondents
Source: Field Survey, 2018*

4.1. Awareness of Inventory Management among Small-Scale Organization

The opinion of respondents in relation to awareness on stock keeping as shown in Table 2 reveals that most of the small-scale manufacturing companies are aware of inventory management with weighted mean response 4.23. This shows that the organisations often keep proper record of their stocks to have a smooth run production process. For instant, out of the six questions on the research instrument reflecting inventory management awareness a grand total of 746 respondents chose always which is 58.09%, 307 respondents which is 23.91% chose often and 125 respondents that is 9.74% chose sometime which shows that most of the small-scale manufacturing organization have a good background on keeping of stocks for future production. However, grand total of 41(3.19%) respondents cannot rate the items in the research instrument, grand total of 21 respondents which is 1.64% never do any of them and 44 (3.43) practice them seldomly an indication that those that falls into that categories did not have a good knowledge about how to manage their unused stocks in the organization.

S/N	Statements	CR	N	S	ST	O	A	WM	Total
1	Unused stocks in your organization is being kept to smooth run future production.	9	7	4	36	77	81	3.84	214
2	Stocks that you keep in your organization are basically for future production.	22	0	9	14	40	129	4.04	214
3	To some extent, you count the number of stock that you keep for your future production to control the stocks that you hold in your organization.	7	0	17	20	23	147	4.30	214
4	Stock keeping methods are applied in your organization because they help to reduce your operation cost by not holding too much stock with the business capital.	3	0	13	24	47	127	4.30	214
5	The stocks you hold for production are always determined by a method or techniques in your organization.	0	9	0	11	43	151	4.52	214
6	The method that you always adopt on stock management in your organization helps you to overcome the issue of over-stocking and under-stocking in your organization.	0	5	1	20	77	111	4.35	214
Grand Totals		41	21	44	125	307	746	4.32	1284
Percentages		3.1	1.6	3.4	9.7	23.9	58.09		100

Table 2: Awareness on Inventory Management

Source: Field Survey, 2018

Key: CR= Cannot Rate, N= Never, S= Seldomly, ST=Sometime, O= Often, A=Always, WM= Weighted Mean

4.2. Effects of Strategic Inventory Management on Operational Performance

Table 3 shows the operational performances of small-scale manufacturing companies that practice inventory management. Respondents were asked to rate the performance level of their operational variables in line with the stated behavioral variables.

The findings show that the commodity price reduction benefits and administrative effectiveness of such organizations is static with weighted mean of 2.75 and 2.73 respectively. It was also revealed that labour-turnover, operation cost, capacity utilization and product lines of such organizations are decreasing with weighted averages of 1.94, 1.97, 1.96 and 2.28 respectively. The analysis of operational performances of firms using inventory management shows that the level of customer's satisfaction for their products is increasing with weighted average of 3.65 and product quality is also increasing with a mean response of 3.50.

The wastage of materials and product volume are decreasing steadily in companies that practice inventory management with weighted average of 1.46 and 1.41 respectively. However, the overall weighted average for operational performance of firms that uses inventory management is 3.53. This indicates that their operational performance level is increasing as a result of the application of inventory management tools in managing their unused stock.

Performance Variables	Behavioural Variables							TOTAL	AW	Rating
	NI	DS	D	S	I	IS				
Labour-Turnover	37	29	12	40	8	13	139	1.94	Decreasing	
Operation Cost	12	59	23	21	14	10	139	1.97	Decreasing	
Commodity price reduction benefits	25	17	4	44	20	29	139	2.75	Static	
Customer's satisfaction	7	3	4	8	62	45	139	3.65	Increasing	
Production quality	18	2	7	31	29	52	139	3.50	Increasing	
Material Wastage	23	21	72	17	1	5	139	1.36	Decreasing steadily	
Product Volume	29	31	46	22	7	4	139	1.71	Decreasing steadily	
Administration effectiveness	17	21	12	49	12	28	139	2.73	Static	
Capacity utilization	42	17	21	32	17	10	139	1.96	Decreasing	
Product lines	20	21	30	39	26	3	139	2.28	Decreasing	
Totals	230	221	231	303	196	199	1390	3.53	Increasing	
Percentages	16.5	15.9	16.6	21.8	14.1	14.3	100			

Table 3: The Effect of Inventory Management on Operational Performance of Users Companies

No Idea NI= 0, Decreasing Steadily DS = 1, Decreasing D= 2, Static S= 3, Increasing I= 4, Increasing Steadily SI= 5.

Source: Field Survey, 2018

Table 4 reveals the operational performances of small-scale manufacturing companies that are not practicing inventory management. Respondents were asked to rate the performance level of their operational variables in line with the stated behavioural variables.

The findings show that the labour-turnover, customer satisfaction, product quality, product volume, capacity utilization and product line of firms that are not practicing inventory management is static with weighted averages of 2.69, 2.68, 2.85, 2.56, 2.52 and 2.81 respectively.

The analysis also reveals that the benefits they ought to gain from commodity price is decreasing due to the fact that they are not practicing inventory management with a weighted average of 2.34 and their administrative effectiveness of such organizations is decreasing also with weighted average of 2.46 an indication that they are not performing well. The analysis of operational performances of firms not using inventory management shows that material wastage in such organizations is increasing because they are not being efficient enough with a weighted average of 3.57. Their operation cost is also increasing based on the findings in the analysis as a result of their inefficiency. The weighted average for operation cost for organizations that are not practicing inventory management is 3.50 which means increasing. However, the overall weighted average for operational performance of firms that are not using inventory management tools is 2.81. This shows that their operational performance level is static.

Comparing the operational performances of small-scale manufacturing companies that uses inventory management tools and those that does not based on the above analysis, it can be inferred that firms that uses inventory management tools which has an overall performance rating of increasing are performing better than their counterparts that are not using inventory management tools which the overall performance level is rated as static.

Performance Variables	Behavioural Variables								
	NI	DS	D	S	I	IS	TOTAL	AW	RATING
Labour-Turnover	12	2	12	30	9	10	75	2.69	Static
Operation Cost	0	3	9	20	33	10	75	3.50	Increasing
Commodity Price Reduction Benefits	5	16	27	10	9	8	75	2.34	Decreasing
Customer's Satisfaction	7	13	12	18	15	10	75	2.68	Static
Production Quality	10	2	7	31	20	5	75	2.85	Static
Material Wastage	7	4	7	8	19	30	75	3.57	Increasing
Product Volume	12	9	11	21	12	10	75	2.56	Static
Administration Effectiveness	2	13	34	9	8	9	75	2.46	Decreasing
Capacity Utilization	15	7	12	15	17	9	75	2.52	Static
Product Lines	6	11	10	19	16	13	75	2.89	Static
Totals	75	70	133	223	167	102	750	2.81	Static
Percentages	10	9.3	17.3	29.7	22.3	13.6	100		

Table 4: The Effect of Strategic Inventory Management on Operational Performance of Nonusers Companies
 No Idea Ni= 0, Decreasing Steadily Ds = 1, Decreasing D= 2, Static S= 3, Increasing I= 4, Increasing Steadily Si= 5.
 Source: Field Survey, 2018

5. Conclusion

The awareness level of small-scale manufacturing companies in managing their stock is high especially at the operational level. Most of such organizations are aware of the need for them to ensure that unused stocks did not tie down much of their capital and at the same time they are available at the right time when they are in need of them. The best method of managing inventory at operational level among small-scale manufacturing companies varies and the appropriate inventory management tools for this ranges from the ABC system, Two-way bins, EOQ, Production Lot Size and Quantity discount Model.

Strategic inventory management has an effect on the operational performance of small-scale manufacturing companies. By implication, the way and manner through which the small-scale manufacturing companies manage their inventories will determine their operational performance.

6. Recommendations

Inventory management tools should be made available in small-scale manufacturing companies. Also, such organizations should organise seminars and training programmes for their staff on how to use the inventory management tools effectively. This will improve the applicability level of inventory management tools among the small-scale manufacturing companies which automatically leads to improved operational performance.

All the inventory management methods should be made formal at the operational level among small-scale manufacturing companies. Inventory management tools like the ABC system, Two-way bins, EOQ, Production Lot Size and Quantity discount Model should form the bedrock of their inventory management practices.

Since strategic inventory management has an effect on the operational performance of small-scale manufacturing companies, sufficient inventory management facilities should be provided by such organizations to support the operational performance technically which will bring about improved performance.

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