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Capacity Development and Inventory Management in Small Scale Enterprises (Sses): A Study of Selected Metal Fabrication Enterprises in Onitsha, Anambra State, Nigeria

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Abstract

The main problem that called for this research is that in recent times, a number of inventory issues have arisen which had affected capacity development of small scale enterprises. One of them is poor inventory management. The purpose of this study was to identify the relationship between inventory management and capacity development in small scale enterprises. This is because inventory forms the major resource of the organization and significant investment, especially in the manufacturing sector. Wherein, inventory management is the independent variable; capacity development is the dependent variable. Improved production, cost reduction and meeting customer demand served as indicators that was employed to measure the capacity development of SSEs (the dependent variable) whereas, control of materials flow, coordination of purchases and demand forecasting served as measures for inventory management (independent variable). This study was conducted in Onitsha, Anambra State. A survey design was adopted and a total sample of 150 respondents was randomly selected from the 240 registered and functional small scale metal fabrication enterprises operating at Onitsha. Only 139 properly completed questionnaires were used for the analysis. A five point's likert-scale designed questionnaire formed the major tool for data collection. Collected data were presented using percentage frequency tables and analyzed accordingly. Formulated hypotheses were tested using Pearson's Product Moment Correlation aided by Statistical Package for Social Sciences. The result of data analysis shows that inventory management has positive and strong correlation with capacity development in small scale enterprises. The policy implication of this study is that small scale enterprises should employ inventory management practice which helps to achieve improved production, cost reduction and meeting customer demand.

Keywords: Lean inventory; Just-in-time inventory; Material-requirement-planning; Capacity development.

1. Introduction

Materials are the chief determinant of the productive efficiency of any manufacturing concern, as well; inventory which is material held in stock forms the major part of manufacturing organizational resources. Inventory management systems are developed by organizations to allow efficient and continuous operations because lack of inventory management affects stock control methods, proper handling of supply and response to market demand.

Inventory management is considered as one of the most important management functions in the overall context of materials management systems (Shafie, 2014). This is because .inventory is among the significant financial assets of a firm. Underscoring the importance of inventory, Lee and Kleiner (2001) opine that the majority of successful retailers look at inventory management as a tool to improve customer satisfaction through refined merchandise assortments and in-stock position. By focusing on customer satisfaction eventually, according to Shafie (2014) it will result in increased revenues, lower inventory levels, greater liquidity, and improved return on investment.

Inventory management is very vital in the performance and growth of an organization especially a manufacturing company. This is because, entire profitability of any manufacturing organization is tied to the volume of products produced and sold (Agu *et al.*, 2016). In addition, it plays a key role in the successful completion of a production process and influences an organization's financial strength and competitive position.

Efficient inventory system resolves "a few, adequate/enough and too many" inventory issues. This means that the issue of inventory management lies on optimizing between under stocking and overstocking cost. Accordingly, excess inventory will adversely affect the net cash flow of a firm. On the contrary, enough inventories are necessary to ensure continuous flow of production and customer satisfaction. Lending support to the assertion above, (Kolias *et al.*, 2011) posit that inventory management encompasses financing, purchasing and selling policies; their implementation involves contradictory functional objectives.

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For instance, the effort of the financial manager to minimize the level of inventory contradicts the effort of the marketing manager to minimize the possibility of inventory shortage. This is to say, different departments within the same organization adopt different attitude towards inventory. For example, the sales department might desire large stock in reserve to meet virtually every demand that comes. The production department similarly would ask for stocks of materials so that the production system runs uninterrupted. On the other hand, the finance department would always argue for a minimum investment in stocks so that the funds could be used elsewhere for other better purposes, (Vohra, 2008).

Undoubtedly, good inventory management in any manufacturing organization including Small and Medium Scale Enterprises (SMEs) saves the organization from poor quality production, disappointment of seasonal customers, loss of profit and good social responsibility (Johnson, 2008). If inventory is not managed, production cannot meet the aspiration of customers and this causes loss of revenue to the organization. Thus inventory management system does a lot to present a good company to the public in terms of quality production. Fundamentally, good inventory management in any manufacturing organization saves the organization from poor quality production, disappointment and loss of customers, loss of profit and good social responsibility (Johnson, 2008).

1.1. Statement of Problem

Current research has shown that lack of access to fund is not the only snag hindering the growth of small scale enterprises but operators are confronted with know-how on proper inventory management (Kolias *et al.*, 2011). In consonance with Kolias *et al.* (2011) is Roel and Perakis (2006) who assert that many companies or firms are faced with the challenges of increased loss in inventory due to poor inventory management. This is exactly the situation with most Small Scale Enterprises (SSEs) in Nigeria today. SSEs play a significant role in promoting industrial development; it does a lot to present a good company to the public in terms of quality production. Surprisingly, today, many small scale enterprises in Nigeria run into the dreaded 'stock out' situation more than often against their wish. On the flip side, some have so much excess inventory on-hand that affects their profit margins. Besides, others do not have the game plan to get their order and inventory processes under control. In other words, they do not carry out demand forecasting, the proper way to truly control inventory and coordinate purchases is lacking.

This may have informed Temeng *et al.* (2010) to say that organizations have ignored the potential savings from proper inventory management, treating inventory as a necessary evil and not as an asset requiring management, a view supported by Ogbo, Onekanma and Wilfred. Perhaps, the operators of SSEs feel that their market is predictable and underdeveloped, and there may not be the need to manage inventory.

A careful observation shows that some SSEs apply inventory management based on arbitrary rules; they follow the rule- of-thumb approach. Rajeer (2008) succinctly captured this by saying that several major problems in the context of inventory management in machine tool enterprises including the use of rule-of-thumb for inventory management, a low importance given to forecasting, random ordering of materials, low levels of training and development, and low computer use as well as a low importance given to purchasing and variable lead-time.

Additionally, many of the SSEs may be finding it difficult to ascertain the rate of materials consumption, time necessary to obtain new deliveries of the materials, amount of capital necessitated and available; availability of storage space, risk of changing specification or of obsolescence and inability to meet customer demands; an assertion supported by Temeng *et al.* (2010). Worst still, they may be having challenges arising from inability to control materials flow, lack of coordination of purchases and inability to carry out demand forecasting. Beside, from the evaluation of other research previously done, inventory management techniques are applied mostly by larger firms, no study was found covering inventory management in Nigeria as it affects SSEs; a sector that contributes significantly to the growth of the economy and this creates a research gap. It is in an attempt to fill in the research gap that this study was designed.

1.2. Objectives of the Study

The broad objective of the study is to see if inventory management has relationship with the capacity building for SSEs.

The specific objectives of the study are:
i.   To ascertain if control of materials flow has relationship with increased production in SSEs.
ii. To identify if coordination of purchases has relationship with reduction in cost in SSEs.
iii. To ascertain if demand forecasting has relationship with meeting customer demand in SSEs.

1.3. Research Questions

With the above objectives, the research questions developed for this study are as follows:
i.   Does control of materials flow have relationship with increased production in SSEs?
ii. Does coordination of purchases have relationship with reduction in cost in SSEs?
iii. Does demand forecasting have relationship with meeting customer demand in SSEs?

1.4. Research Hypotheses

These null hypotheses were proposed for the study:
i.   Control of materials flow has no relationship with increased production in SSEs.
ii. Coordination of purchases has no relationship with reduction in cost in SSEs.
iii. Demand forecasting has no relationship with meeting customer demand in SSEs.

1.5. Significance of the Study

The management of inventory needs to be given a particular attention by all organizations irrespective of their size (big or small). However research focusing on inventory management in Nigeria as it affects SSEs is still lacking, therefore this study is built to fill in the gap and to contribute additional information to the body of knowledge in the inventory management field. Theoretically, the study will add to the inventory management literature. Practically, it will also provide useful information to public and private firms, particularly manufacturing companies, as well as other organizations in order to improve their inventory management systems.

The result of this study will benefit the SSEs in Nigeria because, the effect of inventory management on the capacity development of firms in a developing economy like Nigeria may be different from the results from developed economies such as Germany, U.S.A, Japan, etc. Thus the findings of the study will bring to the attention of operators of SSEs and other classes of business in Nigeria on how to promote and sustain their activities.

2. Conceptual Framework
2.1. Meaning of Inventory

Inventory represents an important decision variable at all stages of product manufacturing, distribution and sales, in addition to being a major portion of total current assets of many organizations. Bailey (2009), defined inventory as the goods purchased from sources out of the organization that are used to produce finished products.

According to Stukhart (2007) inventories are items that are used to produce a product and which include raw materials, part, suppliers and equipment items. Ghosh and Kumar (2003), viewed inventory as a stock or goods that is maintained by a business in anticipation of some future demand. The Webster's dictionary defines inventories as "the elements, constituents, or substances of which something is composed or can be made."

2.1.1. Importance of Inventory

i. The control of inventory is a very important and vital subject for every organization and should be handled effectively for successful production.

ii. Inventory accounts for a big part of product and production costs. The cost represented by inventories fluctuates and many comprises between 20-50% of the total production cost and sometimes more (Stukhart, 2007).

iii. Materials are critical in the operations in every industry since unavailability of inventories can stop production. In addition, unavailability of inventories when needed can affect productivity, cause delay and possible suspension of activities until the required inventory is available.

iv. Efficient inventory management process in the public sector would enhance minimized ordering costs (Silver et al., 2008).

v. According to Nwando (2006) the essence of inventory management is "to have the right goods, quality and quantity at the right place and time".

vi. Maintaining inventory also involves holding or carrying costs along with opportunity cost. Inventory management, therefore, plays a crucial role in balancing the benefits and disadvantages associated with holding inventory.

Vii. Efficient and effective inventory management goes a long way in successful running and survival of a business firm, when organizations fail to manage their inventory effectively they are bound to experience, stock out, the decline in productivity, profitability and customer dissatisfaction.

Viii. Inventory often represent as much as 40% of total capital of industrial organizations (Moore et al., 2003). It many represent 33% of company assets and as much as 90% of working capital, (Sawaya and Giauque, 2006).

2.1.2. Major Classifications of Inventory

Ile (2002), classified inventory into three major types as listed below:

(1) Raw material inventory: These are inputs or items purchased by an organization for processing. For instance, angle iron, welding rod, flash bar etc., are all part of raw material inventory for a metal construction firm.

(2) Work in progress: These are materials that are partly processed but are yet uncompleted. This is also known as goods in progress inventory.

(3) Finished goods inventory: This is the stock of finished goods. These could be stock of goods awaiting shipment transportation.

2.1.3. Meaning of Inventory Management

Inventory management can be defined as the science and art of ensuring that enough inventory or stock is held by an organization to meet demand (Coleman, 2000; Jay and Barry, 2006). Ogbo et al. (2014), see inventory management as the activities that relates to the availability of any stock or material used by an organization or in an organization.

Ogbo et al. (2014), defined inventory management as the set of policies that controls and monitor inventory level and determine what level should be maintained, how large orders should be made and when stock should be replenished. According to Miller (2010), inventory management is the supervision of the storage supply and acceptability of items to ensure an adequate supply without excessive over supply.

Christopher (2005), says inventory management refers to all the activities involved in developing and controlling the inventory level in the form of raw materials, semi-finished materials or finished goods. Miller (2010) also defined inventory management as activities put in place to ensure that customers has needed products and services and it coordinate the purchasing, manufacturing and distribution function to meet the marketing needs and organizational needs of availing the product to the customers.

Inventory management involves managing the replenishment lead time, replenishment of goods, returns and defective goods, demand forecasting and quality management with the balance of these requirements (Ghosh and Kumar, 2003). In the words of Benedict and Margeridis (2000), inventory management means the availability of materials whenever, and where ever required by stocking adequate number and kinds of stock. Orga (2006), sees inventory management as the process of insuring that the right quality of the relevant stock is available at the right time and in the right place.

Nweze (2004), on his own part defined inventory management as the means of ensuring that the actual flow of inventory in an organization conformed to plan. Inventory management according to Lee and Kleiner (2001) is defined as a blueprint of the inventory management system and includes the physical infrastructure, the planning and control structure, the management information architecture as well as the organisational embedding of the inventory system.

To Vohra (2008), inventory management entails the specification, retention and control of desired inventory level, on the one hand, and minimization of the total inventory cost, on the other hand. What seems to be a more suitable definition of inventory management is the one provided by Nwando (2016). According to him, inventory management involves making sure that the balance of stock or items are maintained at the right time, place as well as quality and quantity in an organization or firm to ensure the organizational prosperity.

Inventory management, in short, implements the high level policy decision in a best sense. Good decision regarding the timing of replenishment of the order quantity and forecast considerations. It involves planning to organize and controlling the flow of materials from their initial purchases unit through internal operation to the service point through distribution Smaros *et al.* (2003). They maintained that the task of inventory management is to control through the selection of the time order and quantity of orders, taking into account the likely future requirement (demand) and maintaining their estimate.

In order to manage inventory successfully, the enterprises should understand customer needs, vendor partnerships, technology, data integrity, and performance measurements (Lee and Kleiner, 2001). In this study, the indicators used for measuring inventory management are: control of materials, coordination of purchases and demand forecasting. For capacity development, the indicators are: improved production, cost reduction and meeting customer demand as schematically presented below:

Figure-1. Relationship between Inventory Management and Capacity Development
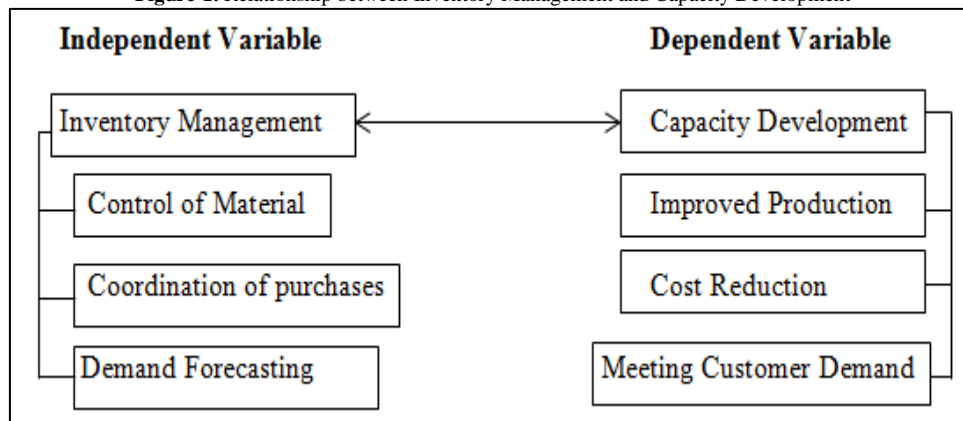
Source: Authors' Conceptualization

2.1.4. Inventory Management Strategies

The inventory management strategies are:

1. **Lean inventory system:** This production principle was pioneered by Womack *et al.* (2003).This was linked with reduced inventories. The argument is that as this inventory is reduced there will be profit improvement due to the interest savings as well as reduction in storage fees handling and waste. This saving has been estimated to be the rank of 20-30% (Brigham and Gapeski, 2010). The proponent of lean inventory system argues that excess inventory will adversely affect the net cash flow of the firm. On the cost side, most obvious is the cost of holding inventory which include the capital costs (interest or opportunity) the physical cost (storage insurance and spoilage). Lean inventory system according to the advocates is suitable for organizations operating in highly competitive environment such as the SMEs.

2. **Management oriented system include**: This is made up of: just in time (JIT) and material requirement planning system (MRP).

(a) **Just-in-time (JIT):** Just in time refers to the collection of practice that eliminates waste. It emphasizes that production should create items that arrived when needed, neither earlier nor later (Cynthia and Amuhaya, 2015). The element of just in time (JIT) include: shared product design with suppliers and customer movement towards single searching proximate suppliers, reduced machine set-up time and total preventing

maintenance. It is an inventory strategy that is implemented to improve return on investment of a business by reducing inventory and it associated carrying cost.

3. **Material requirement planning system (MRP):** Material requirement planning system (MRP) is defined as product oriented computerized technology which aims at minimizing inventory and maintaining delivery schedules (Lysons and Gillingham, 2003). This system is based on the recognition that demand for an item may be dependent on the demand for other inventory items, i.e., demand for pen and paper, or nail and wood. The emphasis is on the end product into which related parts are incorporated.

(a) Minimum and Maximum Inventory System: It is essential for companies to find ways and means of determining the right quantity of raw material it should maintain. Companies therefore, establish maximum and minimum inventory level to ensure smooth operations (Onyeaghala, 2017). This is a conventional inventory management practice available for many businesses.

Maximum inventory level: It is that level which stock should not normally be allowed to rise. **Minimum inventory level:** The minimum inventory level is that below which inventories should not normally be allowed to fall. If inventories go below this level there is the very real danger of shortage of supplies, which may cause a stoppage in production.

Emphasis in using maximum and minimum inventory system is on reduction in waste, shortening of lead time, improvement and smooth flow in operations. It is expected that inventory should not be allowed to fall below the minimum level as such reorder level has to be established at which point to replenish stock.

(b) Reorder level: This is the point fixed between maximum and minimum stock level, at which it is essential to initiate purchase requisition for fresh supplies of the material. This point will usually be slightly higher than the minimum stock, to cover such emergencies as abnormal usage of the material or unexpected delay in delivery of fresh supplies (Onyeaghala, 2017).

Whichever method one adopts, the task of inventory management is to control through the selection of the time order and quantity of orders, taking into account the likely future requirement (demand) and the maintaining their estimate, Inventory management, in short, implement the high level policy decision in a best sense. Good decision regarding the timing of replenishment of the order quantity and forecast considerations (Ankitdutta, 2016).

2.1.5. Reasons or Purposes of Inventory Management

According to Banjoko (2004) manufacturing organization or firms carry inventories for a variety of reason. Inventory performs significance function in the total production system and since it is physically impossible and economically impracticable for each stock of items to arrive exactly where and when it is needed, there is need to keep some amount of inventory at any point in time. In view of the above statement, Banjoko (2004), Kuku (2004), Ogbo *et al.* (2014), Lieberman *et al.* (2002), and Brag (2005) provided the reasons for holding inventory which include:

I. To enhance uninterrupted flow of production and sales (transactional motive).
II. To meet variation in production or uncertain demand (precautionary motive).
III. To allow flexibility in production schedule.
IV. To decouple successive stage of operation.
V. To level production activities.
VI. To provide a means of hedging against failure price.
VII. To provide means of obtaining economic lot size and quantity discount.
VIII. To accommodate lead time and delivery uncertainty
IX. To take advantage of economics of large scale purchases and quantity discount

2.1.6. Steps to Achieve Effective Inventory Management

According to Hiller and Lieberman (2001); Barry and Company (2019) firms should follow the following step in order to have effective inventory management:

i. Developed a mathematical model which describes the behavior of inventory.
ii. Design and adopt an optimal inventory policy/model that suites firm.
iii. Developed a computerized information processing system that would provide information on the current inventory level
iv. Use the current inventory level information to apply the optimal inventory policy to replenish existing inventory level.
v. Apply lot tracking which allows one to know which of those items are in stock and need to be pulled from your inventory, which customers have already, or are about to receive, a product from that lot and notify them to ensure the safety of customers.
vi. Have a direct integration to your accounting package from an order and inventory management system. This enables you to easily post to your General Ledger account and keep track of all your other business expenses outside of inventory.
vii. Use demand forecasting; this is a key to planning what to order so that one spend resources wisely. With the proper tools in place, one can learn which products are selling and which channels are performing.

2.2. Meaning of Capacity Development

Capacity development is the process by which individuals and organizations obtain, improve, and retain the skills, knowledge, tools, equipment and other resources needed to do their jobs competently or to a greater capacity (larger scale, larger audience, larger impact, etc) (Anonymous). It involves planned development of (or increase in) knowledge, output rate, management, skills, and other capabilities of an organization through acquisition, incentives, technologyand/ortraining.

Capacity development encourages organizations to evaluate their abilities to perform in a complex environment, because the evaluation process coupled with the implementation component help ensure organizational success and sustainability. Anonymous In addition capacity development helps to make organizations a lot more efficient in the future and stronger as well. It makes business to be prepared and ready to reach new heights at all times. It also helps to maximize team productivity, drive breakthrough innovation, and secure a competitive edge for an organization. (Nwankwo *et al.*, 2017), affirm that capacity development has a strong effect on the performance of the organization. Performance, according to Kappe (2017) refers to the cost concept that draws the relationship between input and output. Nongo (2005), describes performance as the extent to which material, time, effort, are used conservatively to achieve the intended purpose. Organizational performance therefore is the optimal way of using the resources of the organization by minimizing waste or cost, using improved technological tools and training of staff and motivating them to accept responsibility so as to achieve the objective of the organization. From the foregoing, it means that anything that affects the capacity development of an organization affects its performance.

2.2.1. Factors Affecting Capacity Development

Monczka (2008), Ogbo *et al.* (2014), Roel and Perakis (2006) identified the critical factors influencing organizational performance and since capacity development correlates with organizational performance, the factors will affect capacity development. The factors are as follows:

Increased Production: organization may have achieved increased production when they improve their internal production processes in order to stay ahead of competition. As organization capability improves further in the 1990s managers began to realize that material and service input from suppliers had a major impact on their ability to meet customers demand. This led to increased focus on inventory and getting to keep and manage inventory at sufficiently high level to perform production and sales activity smoothly, but also to minimize investment inventory at minimum level to maximize profitability (Monczka, 2008).

Inventory Cost: There are costs involved in carrying inventory. Ogbo *et al.* (2014), point out that the theory of inventory and production consider and uses the following information which represents inventory carrying costs:

i. Holding Cost: These are cost associated with storing inventory that remains unsold. A firm's holding costs include the cost of goods damaged or spoiled, as well as the cost of storage space, labor and insurance.

ii. Ordering Cost: These are the expenses incurred to create and process an order to a supplier. These costs are included in the determination of the economic order quantity for an inventory item. Example, cost to prepare a purchase requisition or order.

iii. Shortage Cost: This is the cost of having a shortage and not being able to meet demand from stock. Shortage of stocks may result in the cancellation of orders and heavy losses in sale which in turn may result to loss in goodwill and profit even the business itself.

Customers Demand: A firm stays in business when he has the product the customer wants on hand when the customer wants them. If not, the firm will have to back order the product. If the customer can get the goods from some other source, he or she many chose to do so rather than wait in order to allow the original customer to meet demand later (through back-order). Hence sales are lost forever if goods are not in stock (Ogbo *et al.*, 2014).

Cost Control: This cost includes the actual price of the goods or freight cost to pay to receive the item (Roel and Perakis, 2006). Effective cost management and reduction in inventory management can be road map to achieving most critical organizational objectives. With careful and good cost reduction techniques and planning purchases by use of inventory management can save big amount of company's budget.

Reduce Loss: Many companies or firms are faced with the challenges of increased loss in inventory due to poor inventory management. In obsolete merchandise, a company takes a physical inventory count at the end of a period it may discover obsolete or out of date merchandise. When this happens these differences in the costs need to be recorded in it books to keep the inventory account as accurate as possible. If the company has 100 items recorded in the book for N10 each, but it figures it items are really worth N6 each, an adjusting entry need to be made in this case, an entry of N400 would be debited to the cost of goods sold account. And N400 would be credited to the inventory account. This reduces the cost of inventory shown in the book keeping record (Roel and Perakis, 2006). It was from the foregoing that we derived the performance indicators of this study, which are: increase in production, reduction in inventory and meeting customer demand.

2.3. Theoretical Framework

This study is anchored on the two theories: the production theory and economic order theory.

2.3.1. Production Theory

The theory of production is described especially in operations research and is commonly referred to as mathematical theory of inventory and production (Hiller and Lieberman, 2001). The theory is concerned with development and adoption of inventory and production system that are effective and that will result in minimization of institutional cost.

2.3.2 Economic Order Theory

Economic order theory is the cost of inventory that minimizes the total cost of inventory management. Coleman (2000), and Ogbo (2011) defines economic order quantity as the ordering quantity which minimizes the balance of cost between inventory holding cost and re-order cost. Economic order quantity is the number of units that a firm or a company should add to inventory with each order while minimizing the total costs of inventory such as; holding cost, ordinary cost and stock out cost.

Economic order quantity is used as part of continuous review system in which the level of inventory is monitored at all time and fixed quantity is ordered each time the inventory reaches a specific recorder point (Lyson, 2012). Muckstadt *et al.* (2010), say that economic order quantity is 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/2h + D/Qs

Where:

TC = Total annual cost.

Q = Order quantity.

D = Annual demand.

s = ordering cost.

h = Annual carrying cost per unit.

2.4. Empirical Review

Anichebe and Agu (2013), studied the effect of inventory management on organizational effectiveness in selected organization in Enugu. The study involved a sample size of two hundred and forty-eight (248). Data generated using questionnaire, oral interview were presented in a table and analyzed using simple percentage. Pearson Product Moment Correlation and Linear Regression were used in the hypotheses testing. The finding indicates that there is a significant association between inventory management and organizational effectiveness. (i.e there is a highly positive correlation between good inventory management and organizational profitability). The study concluded that inventory management is very vital to the success and growth of organization.

Edwin and Florence (2015), carried out a study on the effect of inventory management on profitability on Cement Manufacturing Companies in Kenya. A cross sectional data from 1999-2014 was gathered for the analysis of the annual report for the three (3) sampled firm listed at Nairobi Security Exchange (N.S.E). The Ordinary Least Square (O.L.S) and multiple regression models were applied in the data analysis. The variable used include; inventory turn-over, inventory conversion period, inventory levels, storage cost, size of firms, gross profit margin, return on asset and growth of the firm. The result provided a negative relationship between inventory turn-over, inventory conversion period, inventory levels, storage cost, with the profitability of the company. In addition, inventory level was found to be directly related to the firm size and storage cost. The study therefore recommended that the Cement manufacturing firms in Kenya should strive to ensure that the right stock is kept in their warehouse to hedge against excessive holding cost and stock out.

Koin *et al.* (2014), conducted a study on inventory management on organizational performance. A sample size of 56 employees was obtained from targeted population. Data was collected from the company supply chain department in Liaison with the various integrated function in the chain using questionnaire. The data was analyzed using descriptive statistics and this was done using Statistical Package for Social Sciences (SPSS). Finding indicates that inventory management system, supply relation affects the supply chain effectiveness in the manufacturing sector to a great extend while other management and warehouse management affect it to a moderate extend.

Ogbo *et al.* (2014), carried out a study on the effect of effective inventory management on organizational performance in the Seven up Bottling Company, Enugu. A total of 83 respondents constitute the sample for the study. Four research questions and four hypotheses were generated and tested at 10% (that is 0.10) significant level using descriptive statistics and a non-parametric test (chi-square that is X^2). Findings show that there is relationship between operational feasibility, the utility of inventory control/management in the customer related issue of the organization and cost effectiveness techniques are implemented to enhance the return on investment in the organization. It was recommended that management of organizations should acquire effective inventory control/management capability and adopt the inventory keeping method that best suits their operation.

Zuikov (2008), carried out a study on the influence of inventory management on organizational competitiveness with a particular focus on Safaricon Ltd Kenya. A descriptive research design was used in the study. The target population comprised of Safariconkenya Ltd senior personnel as they were better placed to answer questions relating to inventory control and the company's competitiveness. Stratified random sampling was applied to select a sample of 80 respondents. The study collected primary data using drop and pick later method. Both descriptive and inferential statistics were used to analyze the result interpreted in percentages and means score and presented in tables and figures. The study found that inventory shrinkage; inventory investment and inventory return affects the competitiveness of Safaricon Ltd. The study concluded that inventory management practices are very vital to competitiveness of organization.

In Greece, Koumanakos (2008) studied the effect of inventory management on a firm performance in manufacturing firms operation in three (3) industrial concerns in Greece. Food textile and chemical were used in the study covering the period of 2000-2002. The hypothesis that lean inventory management leads to an improvement in a firm's financial performance was tested. The findings suggest that the higher the level of inventory reserved (departing from lean operations) by a firm the lower the rate of return.

In the same light, Oko *et al.* (2008) carried out a research on the association of inventory control and business growth in Nigeria. A survey of 5 selected manufacturing companies in Port- Harcourt Metropolis. They made use of simple percentage and chi-square. The analysis revealed that there is a significant relationship between inventory control and business growth. Supporting the above findings, Brag (2005) stressed that, inventory management has an impact on all business functions particularly operations, marketing, accounting, and finance.

Eroglu and Hofer (2011), examined inventory types and firm performance, using data of 885 firms from 27 US manufacturing industries, for the period 2003 to 2008. With the use of vector autoregressive and vector error correction models, their findings indicate that the level of inventory and firm performance relationship differs across the industries based on the inventory types. They also found that raw material inventory (RIM) have the most vital influence on firm performance compared with work in progress inventory (WIPI) and finished goods inventory (FGI).

In addition, the inter-temporal interactions that exist among the types of inventory showed that RMI and FGI asymmetrically influence each other over the periods. They concluded that each inventory types may have both direct and indirect influence on firm financial performance. This means that the influence of a certain inventory type on firm performance can be mediated by any other inventory type.

Chen *et al.* (2005), examined the inventories of listed American manufacturing firms between 1981 and 2000 and found that RMI and WIPI decline each year during these periods, but FGI did not decline.

Furthermore, Capkun *et al.* (2009) examined the relationship between inventory and performance of US-based manufacturing firms for the period 1980 to 2005 with 52,254 firms. Their findings indicate that total inventories, RMI, WIPI and FGI significantly influenced performance of firms in the manufacturing industries. Though, their influence varies but RMI have the most vital influence on firm performance profit margins and earnings before interest and tax.

Irungu and Wanjau (2011), report that Kenyan supermarkets are increasingly adopting inventory management systems in order to enhance their operational efficiency, customer service and performance.

3. Methodology
3.1 Research Design
This study adopted the survey research design. Survey research was considered appropriate since data would be collected from the elements or subjects representing the population without imposing any condition or special treatment on them.

3.2. Area and Population of the Study
The area of study for this research was all registered and functional metal construction enterprises in Onitsha, Anambra State of Nigeria which comprised of 240; a figure supplied by Association of owners of metal construction enterprises (2019).

3.3. Sample Size Determination and Sampling Techniques
In this study, a sample of 150 was randomly selected from the population.

3.4. Source of Data/ Data Collection Method
In carrying out this research, primary data were collected by using five points Likert-scale designed questionnaire ranging from strongly agree to strongly disagree.

3.5. Validity and Reliability of Research Instrument
To enhance the instrument's validity, the content and face validity were used. Reliability of the research instrument was established through a pilot test on selected respondents.

3.6. Analysis Techniques
Of the 150 questionnaires administered to respondents, only139 were properly completed thus, analysis was based on the 139 respondents. Data were presented in frequency tables and percentages were used to analyze the data. Formulated hypotheses on the other hand were tested using Pearson's Product Moment Correlation, aided by the Statistical Package for Social Science (SPSS).

3.7. Decision Rule
Reject Null Hypothesis if P-value is less than 0.05 (P < 0.05) and accept Null Hypothesis if P-value is greater than 0.05 (P > 0.05).

4. Data Presentation and Analysis

Table-1. Control of Materials Flow has Relationship with increased Production in SSEs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	50	36.0	36.0	36.0
	Agree	38	27.3	27.3	63.3
	Undecided	17	12.2	12.2	75.5
	Disagree	20	14.4	14.4	89.9
	Strongly Disagree	14	10.1	10.1	100.0
	Total	139	100.0	100.0	

Source: Field Survey, 2019

From table1 above, 50 respondents representing 36.0% strongly agreed that control of materials flow has relationship with increased production in SSEs, 38 representing 27.3% agreed, 17 representing 12.2% undecided, 20 representing 14.4% disagreed and 14 representing 10.1% strongly disagreed.

Table-2. Coordination of Purchases has Relationship with Reduction in Cost in SSEs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	36	25.9	25.9	25.9
	Agree	35	25.2	25.2	51.1
	Undecided	11	7.9	7.9	59.0
	Disagree	24	17.3	17.3	76.3
	Strongly Disagree	33	23.7	23.7	100.0
	Total	139	100.0	100.0	

Source: Field Survey, 2019.

i. From table 2 above, 36 respondents representing 25.9% strongly agreed that, coordination of purchases has relationship with reduction in cost in SSEs: 35 representing 25.2% agreed, 11 representing 7.9% undecided, 24 representing 17.3% disagreed and 33 representing 23.7% strongly disagreed.

Table-3. Demand Forecasting has Relationship with Meeting Customer Demand in SSEs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	65	46.8	46.8	46.8
	Agree	31	22.3	22.3	69.1
	Undecided	2	1.4	1.4	70.5
	Disagree	19	13.7	13.7	84.2
	Strongly Disagree	22	15.8	15.8	100.0
	Total	139	100.0	100.0	

Source: Field Survey, 2019

Table 3 above shows that, 65 respondents representing 46.8% strongly agreed that demand forecasting has relationship with meeting customer demand in SSEs: 31 representing 22.3% agreed, 2 representing 1.4% undecided, 19 representing 13.7% disagreed and 22 representing 15.8 strongly disagreed.

4.1. Testing of Hypothesis One

H_{01}: Control of Materials Flow has no Relationship with Increased Production in SSEs.

Table-4. Correlation for Hypothesis One

		Inventory management	Increased production in SMEs
Control of materials flow	Pearson Correlation	1	.824[**]
	Sig. (2-tailed)		.001
	N	139	139
[**]. Correlation is significant at the 0.01 level (2-tailed).			

Source: SPSS Result, 2019

On the test of the first hypothesis, the correlation analysis in Table 4 above shows a high positive significance value (r-value) of 0.824[**] and probability value (p-value) of 0.001. These results fail to support the acceptance of the stated null hypothesis since the p-value is less than 0.05 (p = 0.001 < 0.05) significance value (r-value). We therefore uphold the alternative hypothesis. This implies that control of materials flow has relationship with increased production in SSEs; it means that control of materials flow has relationship with increased production in SSEs.

4.2. Testing of Hypothesis Two

H_{02}: Coordination of Purchases has no Relationship with Reduction in Cost in SSEs.

Table-5. Correlation for Hypothesis Two

		Inventory Management	Reduction in cost in SMEs
Coordination of purchases	Pearson Correlation	1	.765**
	Sig. (2-tailed)		.003
	N	139	139

**. Correlation is significant at the 0.01 level (2-tailed)
Source: SPSS Result, 2019

For the test of the second hypothesis, the correlation analysis in the table under 5 above gives a positive significance value (r-value) of 0.765** and a probability value (p-value) of 0.003. Thus, because the p-value is less than 0.05 (p = 0.000 < 0.05) r-value which is the minimum level of null hypothesis acceptance, the null hypothesis is rejected and the alternative hypothesis accepted. This signifies that, coordination of purchases has relationship with reduction in cost. It means that there is relationship between inventory management and reduction in cost of operation in SSEs.

4.3. Testing of Hypothesis Three

$H_{03:}$ Demand Forecasting has no Relationship with Meeting Customer Demand in SSEs.

.**Table-6.** Correlation for Hypothesis Two

		Inventory Management	Customer demand in SMEs
Demand forecasting	Pearson Correlation	1	.680**
	Sig. (2-tailed)		.000
	N	139	139

**. Correlation is significant at the 0.01 level (2-tailed)
Source: SPSS Result, 2019

For the test of the third hypothesis, the correlation analysis in the table under 6 above gives a positive significance value (r-value) of 0.680** and a probability value (p-value) of 0.000. Since the p-value is less than 0.05 (p = 0.000 < 0.05) r-value which is the minimum level of null hypothesis acceptance, the null hypothesis is rejected and the alternative hypothesis is accepted. This is an indication that there is a relationship between demand forecasting and meeting customer demand in SEEs.

5. Discussion of Findings

In the test of hypothesis one, it was found that control of materials flow has relationship with increased production in SSEs. The relationship is significant and a positive one. This study is in confirmation of the findings of Capkun *et al.* (2009); Brag (2005) which indicates that total inventories, RMI, WIPI and FGI significantly influence performance of firms in the manufacturing industries and impact on all business functions particularly operations, marketing, accounting, and finance.

On test of the second hypothesis, the researchers found that there is relationship between coordination of purchases and reduction in cost SSEs. The relationship is significant and positive which implies that, if purchases is coordinated, the cost of operation will be reduced. Supporting the above finding is Koumanakos (2008) whose findings shows that the higher the level of inventory maintained (departing from lean operations) by a firm, the lower the rate of return.

From the test of hypothesis three, the study found that there is a relationship between demand forecasting and meeting customer demand in SEEs. The relationship between the measured variables is significant and positive. This means that demand forecasting helps in meeting customer demand in SEEs. This finding is in line with that of Irungu and Wanjau (2011) which revealed that Kenyan supermarkets are increasingly adopting inventory management systems in order to enhance their operational efficiency, customer service and performance. Kamand (2008), also found that inventory shrinkage, inventory investment and inventory return affect the competitiveness of Safaricon Ltd.

5.1. Summary of Findings

This research was designed to ascertain the relationship that exists between inventory management and capacity development in SSEs. The study was conducted at Onistha, Anambra State. The metal construction enterprises formed the population of study. 150; being a representative number was sampled and only 139 questionnaires were properly completed and used for the analysis. Findings from the study show that, control of materials flow has relationship with increased production in SSEs; there is relationship between coordination of purchases and reduction in cost in SSEs, there is a relationship between demand forecasting and meeting customer demand in SEEs.

6. Conclusion

The importance of inventory management in SSEs and other organizations cannot be over emphasized. This is because the success of any organization lies in the framework for effective and efficient implementation of policies such as inventory management. The analysis carried out in this study shows that inventory management has

relationship with capacity development of SSEs. The review of literature, indicates that lean inventory, maximum and minimum inventory strategies; a conventional inventory management practice is suitable for SSEs

Recommendations

In line with the findings of this study, it is the position of the researchers that:

i. Suitable inventory management strategy should be adopted by SSEs, for this goes a long way for their smooth and successful operation.

ii. Since inventory management brings about reduction of cost, SSEs should make inventory management a necessary activity if they are to survive in this competitive era.

iii. Meeting customer demand is the cardinal responsibility of every business, much as this may be difficult, when goods and services are readily made available to customers it becomes easier. Thus organizations should embrace inventory management to reduce operation cost, ensure smooth flow of production, meet up customer demand and be socially responsible.

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