



Impact of Inventory Management Practices on the Financial Health of Small Scale Manufacturing Enterprises

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ABSTRACT

Inventory management is a methodical technique to acquiring, storing, and selling raw materials and finished goods. The study aimed at assessing the impact of inventory management practices on the financial health of small scale manufacturing enterprises. The study employed a mixture of primary survey-based data and secondary information from the selected small scale firms. The study's population included 845 registered small scale firms in the agricultural, educational, and commercial sectors in Epe and Ijebu-ode Local Government Area in Lagos/Ogun State, Nigeria. A well-structured and closed-ended questionnaire was used to collect primary data. The acquired data was evaluated using Pearson Product Moment Correlation(PPMC), an inferential statistical method. The result of the study indicated that inventory management practices has significant impact on the financial health of small scale manufacturing enterprises and also the performance of small scale enterprises. This demonstrates that inventory management strategies may have a direct, positive impact on organizational performance as well as an indirect, beneficial impact through competitive advantage. It was concluded that inventory management is critical for small firms growth, its performance and profitability. It was thus recommended that small scale enterprises should be encouraged to adopt information technology in

inventory management

Keywords: *Inventory, Inventory management, Financial health, Small scale Manufacturing Enterprises*

Introduction

Inventory management is a methodical technique to acquiring, storing, and selling raw materials and finished good (products). For all categories of organizations, large and small, requires maintaining the appropriate quality of stocks, in the right quantity, place, time, and at the right cost, as well as getting it out to customers at the appropriate price. It is a crucial management issue for the majority of businesses, including big, medium-sized, and small businesses (Agu, Obi-Anike, & Nnate, 2016). The necessity for optimal stock levels to maintain proper productivity in terms of quantity and quality of product produced in order to develop growth-oriented businesses in today's competitive business environment is critical. To Goldsby and Martichenko (2005), opined that logistics is all about managing inventory, whether it is moving or remaining, whether it is in raw form, in the production process, or in final form. The capacity of management to execute effective buying and efficient material control is critical to the success of any corporate organization. Olowolaju and Mogaji (2020), state that most firms, both analysts and managers have been relatively ineffective in persuading senior management to give inventory management the attention it logically deserves. Different writers, academics, and researchers have depicted the subject of inventory management in various ways. Inventory management, according to Olowolaju and Mogaji (2020), refers to all of the processes involved in establishing and controlling inventory levels of raw materials, work in progress, and completed goods so that enough supplies are accessible and the costs of over or under inventories are kept to a minimum. In their study on the influence of improving demand visibility on production and inventory control efficiency, Smaros, Lehtonen, Appelquist, and Holmstrom (2003) noted that inventory management entails planning, arranging, and managing the flow of commodities from their originating purchase unit via internal operations to the service point through distribution. Inventory management's duty is to ensure faster inventory turnover. It boosts inventory turnover by ten (10) percent and decreases expenditures by 10% to 40%. The so-called inventory turnover is not yet sufficient to sell things on the shelves using the First-In-First-Out (FIFO) cycle approach.

Inventory management is required at several points within an organization or across several sites in a supply chain in order to safeguard the production from running out of resources or items. Keeping enough inventory in manufacturing organizations would help to streamline the production process. By keeping enough inventory, wholesalers and retailers can provide

good customer service and build a positive public image. The primary goal of inventory management is to strike a balance between minimal inventory and a good return on investment (ROT). (Johson, Newell, and Vergin, 1974)

Inventory levels have been identified as one of the most promising areas for advancement in organizational materials management (Kumar Ordamar, Zhang, 2008). Inventory is important to a company's development and survival since poor and inefficient inventory management means that the firm loses consumers and experience revenues fall. Prudent inventory management avoids depreciation, pilferage, and waste while ensuring resources are available when needed (Ogbadu, 2009). In today's competitive and challenging industry, inventory management is vital to an organization's success. This comprises lowering the cost of stock holding by keeping just enough inventory in the right location, at the right time, and at the right cost to manufacture the correct number of essential items. High volumes of inventory maintained in stock have a negative impact on the procurement performance of the capital kept, which has a negative impact on cash flow, resulting in diminished efficiency, effectiveness, and skewed functioning (Koin, Cheruiyot and Mwangangi, 2014). The study aimed at assessing the impact of inventory management practices on the financial health of small scale manufacturing enterprises with specific objectives of evaluating the impact of inventory management practices on the performance of small scale manufacturing enterprises in Epe Local Government Area and Ijebu-ode Local Government area in Lagos/Ogun State, Nigeria.

Statement of problem

In recent years, a lot of businesses have experienced significant obstacles, particularly in inventory management and material control, hurting organizational performance. There have been examples of materials overstocking, which eventually becomes expired or out of date, under stocking, lack of stock-taking, worker theft of supplies, and delays in material delivery into organizations, among other things (Munyao, Omulo, Mwithiga, & Chepkulei, 2015). Because the business environment is continually changing and extremely competitive, it is critical for businesses, particularly small-scale firms, to have strong, effective, and well-coordinated inventory management systems. As a result, it is critical for small-scale businesses that are interested in controlling their inventories and the tools connected with inventory management methods. There are several studies on inventory management in other parts of the globe; however, relatively little study has been conducted in the African environment, notably in Nigeria. None of the studies completed in Nigeria, such as Oladejo and Ajala, (2016) and Mshelia, (2015), focused on the Nigerian small scale firms and the influence of inventory management methods on the performance of small scale firms in Nigeria. This study seeks to fill a gap literature by evaluating the impact of inventory management

practices on the financial health of small scale manufacturing enterprises in Epe and Ijebu-ode Local Government Area in Lagos/Ogun State, Nigeria.

Purpose of the Study

This study seeks to fill a gap literature by evaluating the impact of inventory management practices on the financial health of small scale manufacturing enterprises in Epe and Ijebu-ode Local Government Area in Lagos/Ogun State, Nigeria. Specifically to:

- i. To determine if inventory management practices will have significant impact on financial health of small scale manufacturing enterprises?
- ii. To determine if inventory management practices will have significant impact on the performance of small scale manufacturing enterprises?

Research Questions

The study also raised the following research questions:

- i. will inventory management practices have significant impact on financial health of small scale manufacturing enterprises?
- ii. will inventory management practices have significant impact on the performance of small scale manufacturing enterprises?

Research Hypotheses

The study also raised the following hypothesis:

H_{0_1} : Inventory management practices have no significant impact on financial health of small scale manufacturing enterprises.

H_{0_2} : Inventory management practices have no significant impact on the performance of small scale manufacturing enterprises

Literature Review

Inventory Management Concept Defined

To Miller, Stolfo, and Spletzer (2010), inventory management is the activity that arranges the availability of items to consumers. To suit the marketing demands, it coordinates the purchasing, production, and distribution processes. This function include supplying current sales goods, new products, consumables, replacement parts, obsolete things, and all other supplies. Inventory allows a corporation to support a customer's services, logistics, or manufacturing operations when purchase or production of the products is insufficient to meet demand. Inventory plays a critical role in a company's growth and survival since failure to manage inventory effectively and efficiently means that the firm will lose consumers and revenues will fall. A firm must fulfill the demands of its customers in order to achieve its organizational goals. Customer desire has always been an important factor in a company's ability to not only sustain but also boost sales Potilen & Goldsby (2003). According to Gupta, Sipahi, Liudmyla, Ayalew, Guliti, Srivastva, and Teferi (2020), inventory management

refers to the actions involved in establishing and controlling inventory levels of raw materials, semi-finished materials (working-progress), and completed goods such that appropriate supplies are available and the costs of over or under inventories are minimal.

Inventory management is largely concerned with determining the amount and location of stored commodities. Inventory management is necessary at several points inside a facility or across many sites of a supply network in order to safeguard the regular and scheduled flow of production from the random disruption of running out of supplies or items. Inventory management also includes the precise distinctions between replenishment lead time, inventory carrying costs, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and faulty items, and demand forecasting. Balancing these opposing objectives results in optimal inventory levels, which is a continuous process as company demands vary and react to the larger environment (Ghosh and Kumar, 2003), as mentioned in Onikoyi, Babafemi, Ojo, and Aje (2017).

Vendor Managed Inventory

Vendor Managed Inventory is a supply chain method in which the vendor or supplier is in charge of controlling the customer's stock (Smaros et al., 2003). The vendor is granted access to its customer's inventory and demand data in order to monitor the customer's inventory level. Furthermore, the vendor has the power and obligation to refill the customer's stock in accordance with the inventory control principles and objectives that have been mutually agreed upon (Smaros et al., 2003). Purchase orders are generated on as-needed basis by vendors based on an agreed inventory level plan and shared forecast data, consumption data, and historical sales data. Following the placement of the purchase order, an advance shipment notification notifies the customer of supplies in transit. According to the shipment plan, the merchandise is subsequently transported, delivered, and logged. Although Vendor Managed Inventory (VMI) was originally used on store shelves, the idea is now commonly used to refill stocks at the merchant's distribution center (Pohlen and Goldsby 2003). Inventory at the customer site may be held by the supplier and purchased by the customer only when utilized or owned by the customer, and merely monitored for replacement by the supplier.

Suppliers will bill their clients after the cargo is made, based on the agreed-upon payment terms, under the traditional business model. However, in certain VMI, payment is given solely on the basis of what the manufacturers have taken from the hub (Kuk, 2004). Inventory management seeks to protect a company from forecasts, customer demand, and vendor deliveries that are unreliable (Benedict and Margeridis, 1999). Vendor managed inventory can assist to smooth out the peaks and troughs, allowing for lower capacity and

inventory buffers. Furthermore, vendor controlled inventory may be utilized to overcome the quandary of competing performance measurements, such as end-of-month inventory level against out-of-stock measure (Walter, Johnson, and Davis 1999).

Some scholars use VMI as a synonym for other notions while explaining it. According to Walter et al. (1999), Vendor Managed Inventory is one of the most commonly discussed partnership projects for increasing multi-firm supply chain efficiency, and it is also referred to as continuous replenishment or supplier-managed inventory (SMI). However, according to Pohien and Goldsby (2003), this is incorrect. In their opinion VMI is concerned with the management of completed products inventories outbound from a manufacturer, distributor, or reseller to a retailer, whereas SMI is concerned with the flow of raw materials and component components inbound to a manufacturing process.

As technology progresses, so do the interconnected ties. The sharing of point-of-sale (POS) data has allowed consignment selling agreements in which the product is not sold to the consumer until the products are purchased by an end user (Pohien and Goldsby, 2003). Vendor managed inventory elevates supply chain management by integrating functional performance with process across numerous firms, necessitating a function transfer to the lowest cost business as well as cost trade-off across company borders (Pohien and Goldsby, 2003).

Inventory Model: The Economic Order Quantity(EOQ) Model

The Economic Order Quantity Model is without a doubt the most well-known and essential inventory decision model. Its beginnings may be traced back to the early 1900s. Dervitsiotis (1981), Tersine (1994), Coleman (2002), and Ogbo (2011) earlier described the EOQ as the ordering quantities that optimize the cost balance between inventory holding costs and re-order costs. Ogbo (2011) went on to say that some assumptions must be made in order to construct a basic EOQ:

- There are known constant stock holding costs; • There are known constant ordering expenses;
- The rate of demand is known; and • There is a known constant price per unit.
- That replenishment is performed quickly, i.e. the entire batch is provided at once; and
- No stock-outs are permitted.

It is obvious that the above assumptions are quite broad, which is a good reason to proceed with caution when doing an EOQ calculation. Furthermore, the EOQ logic overlooks buffer inventories, which are kept to account for fluctuations in lead-time and demand. The preceding assumptions are broad, and it is doubtful that all of them will be observed in practice.

Research Methods

The study aimed to explore the effects of inventory management methods on the financial health of small scale manufacturing enterprises in Ijebu-ode/Epe, using a mixture of primary survey-based data and secondary information from the research area’s selected small scale firms. The study’s population included 845 registered small scale firms in the agricultural, educational, and commercial sectors in Epe Local Government Area in Lagos/Ogun State, Nigeria. For the investigation, a multi-stage sampling procedure was used, with 300 sample sizes selected following Yamane’s (1967) recommended approach, as mentioned by Zaman (2021). In the current study, quantitative data collection procedures were employed to quantify the connection between variables in numerical terms, with an emphasis on statistical interpretation of the data acquired. This comprises both primary and secondary sources of information. A well-structured and closed-ended questionnaire was used to collect primary data. The questionnaire elicited data on the impact of inventory management methods on the financial health of small scale manufacturing enterprises in Epe Local Government Area in Lagos/Ogun State. The acquired data was evaluated using Pearson Product Moment Correlation(PPMC), an inferential statistical method.

Results and Discussion

The data obtained from the field were presented and analyzed using Pearson product Moment Correlation at 0.05 alpha level.

Hypothesis one

Inventory management practices have no significant impact on the financial health of small scale manufacturing enterprises.

Analysis of data used to test null hypothesis one is presented in Table 1.

Table1: *Impact of inventory management practices on financial health of small scale enterprises*

Variables	N	Mean	Std.Dev.	Df	r-cal	r-crit	P Value
Inventory Management practice	300	1.60	0.60	298	0.549	.116	0.000
	300	1.81	0.71				
Financial health							

r-crit=(.116) P≤0.05

Source: Authors computation, 2021

Table 1 above demonstrated that inventory practice had a mean score of 1.60 with a standard deviation of 0.60, compared to a mean of 1.81 with a standard

deviation of 0.71 for small sized firms. At the 0.05 alpha level of significance, the estimated r value was larger than the crucial r value ($0.549 > 0.116$). To put it another way, the estimated p value (0.000) is less than the 0.05 alpha threshold of significance. The findings indicate that inventory management practices have a significant influence on the financial health of small businesses. From this finding, the null hypothesis, which claims that inventory management procedures have no substantial influence on the financial health of small businesses, is rejected.

Hypothesis two

Inventory management practices have no significant impact on the performance of small scale enterprises

Analysis of data used to test null hypothesis two is presented in Table 2

Table2: Inventory management practices on the performance of small scale enterprises

Variables	N	Mean	Std. Dev.	Df	r-cal	r-crit	P Value
Inventory Management practice	300	1.90	0.69	298	0.144	0.116	0.014
Performance of small scale enterprises	300	1.71	0.74				

r-crit=(.116) P≤0.05

Source: Authors computation, 2021

Table 2 above shows a mean score of 1.90 with a standard deviation of 0.69 for inventory management practice as against a mean score of 1.71 with a standard deviation of 0.74 for small size firm performance. At the 0.05 alpha level of significance, the estimated r value was larger than the crucial r value ($0.144 > 0.116$). To put it another way, the estimated p value (0.014) is less than the 0.05 alpha threshold of significance. The findings demonstrated that inventory management strategies have a significant influence on the performance of small size businesses. As a consequence of the findings, the null hypothesis, which claims that inventory management procedures have no substantial influence on the performance of small-scale businesses, was rejected.

Discussion

The outcomes of this study reveal the presence of an intermediate measure of

competitive advantage between inventory management methods and financial health of small-scale firm performance. *Bowen et al. (2009)* found similar results, finding that more than 50.9 percent of the enterprises evaluated indicated worsening or failing performance. *Nyamao, Patrick, Martin, Odondo, & Otieno (2012)* found from their examination of working capital management methods and financial performance of SMEs in the Kisi District that over 70% had declining financial performance as a result of inadequate inventory management. The findings are consistent with those of previous similar investigations. *Kasahun, Sila, Ebrahimpour, & Birkholz (2006)*, *Ochieng, Jagongo, & Ndede (2020)*, *Ebrahimpour, and Birkholz (2006)* and *Kasahun (2020)*. The standardized coefficient of the indirect effect of inventory management technique on organizational performance is 0.227, which is significant at 0.05 levels of significance (0.012). This demonstrates that inventory management strategies may have a direct, positive impact on organizational performance as well as an indirect, beneficial impact through competitive advantage. These findings are consistent with those of previous research, such as *Deakins, Morrison, and Galloway (2002)*. Other researches, such as *Berry, Blottnitz, Cassim, Kesper, Rajaratnam, and Seventer (2002)* and *Rodriguez & Berry (2002)*, showed comparable results which shown that inventory management strongly predicts firm success *Padachi (2006)* discovered that inventory management had a beneficial influence on the profitability of small firms. The *Deloof (2003)* study likewise found that inventory has a favorable and significant influence on profitability. Overall, our findings are in with those of the previous researchers.

Conclusion

The study examined the effects of inventory management methods on the performance of small scale firms in Epe and Ijebu-ode Local Government Area of Lagos/Ogun State, Nigeria. According to the survey, the majority of SMEs in Ijebu Ode/Epe surroundings employ Economic Order Quantity, but other cutting-edge strategies have yet to be applied. Planning, documentation/store records, employee/staff skill expertise, and finance are further aspects that impact the efficacy of inventory management. Based on these facts, we may infer that inventory management is critical for small firms. The study also conclude that a company's inventory management procedures can have a substantial impact on its performance and profitability.

Subsequently, the study recommends that small scale enterprises should be encouraged to adopt information technology in inventory management. Small scale enterprises operators and managers should be encouraged to constantly attend conferences, seminars and workshops in Nigeria and abroad in order to improve their skills on inventory management

References

- Agu, A. O., Obi-Anike, H. O., & Nnate, E. C. (2016). Effect of inventory management on the organizational performance of the selected manufacturing firms. *Singaporean Journal of Business economics, and management Studies*, 5(4), 56-69.
- Aouam, T., Ghadimi, F., & Vanhoucke, M. (2021). Finite inventory budgets in production capacity and safety stock placement under the guaranteed service approach. *Computers & Operations Research*, 131, 105266.
- Berry, A., Von Blottnitz, M., Cassim, R., Kesper, A., Rajaratnam, B., & Van Seventer, D. E. (2002). The economics of SMMES in South Africa. *Trade and Industrial Policy Strategies*, 1(1), 1-110.
- Deakins, D., Morrison, A., & Galloway, L. (2002). Evolution, financial management and learning in the small firm. *Journal of small Business and Enterprise development*.
- Deloof, M. (2003). Does working capital management affect profitability of Belgian firms?. *Journal of business finance & Accounting*, 30(3□4), 573-588.
- Dervitsiotos, K. N. (1981), *Operations Management*. New York: McGraw-Hill.
- Goldsby, T. J., & Martichenko, R. (2005). *Lean six sigma logistics: Strategic development to operational success*. J. Ross Publishing.
- Gupta, S. K., Sipahi, E., Liudmyla, A., Ayalew, Y., Guliti, M., Srivastva, V., & Teferi, F. (2020). The feasibility of inventory management system in construction and housing development unit of Dessie, Ethiopia. *Journal of Critical Reviews*, 7(13), 1235-1241.
- Johson R. A., Newell, W. T. and Vergin, R. C. (1974) *Production and operations management*. Houghton Mifflin Company
- Kamau L W and Assumpta W. K (2015) Influence of inventory management practices on organizational competitiveness: A case of Safaricom Kenya Ltd. *International Academic Journal of Procurement and Supply Chain Management*, 1(5) 72-98
- Kasahun, A. K. (2020). The Impact of Working Capital Management on Firms' Profitability-Case of Selected Sole Proprietorship Manufacturing Firms in Adama City. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 11(1), 45-55.
- Koin, R., Cheruiyot, K., & Mwangangi, P. (2014). Effect of inventory management on the supply chain effectiveness in the manufacturing industry in Kenya: A case study of TATA Chemicals, Magadi. *International Journal of Social Sciences Management and Entrepreneurship*, 1(2), 189-202.
- Kuk, G. (2004). Effectiveness of vendor-managed inventory in the electronics industry: determinants and outcomes. *Information & management*, 41(5), 645-654.
- Miller, R. (2010). *Inventors Control: Theory and Practice*. New Jersey: Prentice Hall.
- Munyao, R. M., Omulo, V. O., Mwithiga, M. W., & Chepkulei, B. (2015). Role of inventory management practices on performance of production department: A case of manufacturing firms. *International Journal of Economics, Commerce and Management*, 3(5), 1625-1656.
- Nyamao, N. R., Patrick, O., Martin, L., Odondo, A. J., & Otieno, S. (2012). Effect of working capital management practices on financial performance: A study of small scale enterprises in Kisii South District, Kenya. An unpublished thesis.
- Ochieng, M. R. M., Jagongo, P. A. O., & Ndede, P. F. W. Working Capital Management and Financial Performance of Manufacturing and Allied Category of Firms Listed at the Nairobi Securities Exchange, Kenya.
- Ogbadu, E. E. (2009). Profitability through effective management of materials. *Journal of economics and International Finance*, 1(4), 099-105.
- Ogbo, A. I., Onekanma I. V and Wilfred I. U (2014) The Impact of Effective Inventory Control Management on Organisational Performance: A Study of 7up Bottling Company Nile Mile Enugu, Nigeria, *Mediterranean Journal of Social Sciences*, Vol 5 No 10
- Oladejo, M., & Ajala, O. (2016). Stakeholder's perceptions of the inventory management practices impact on performance of medium scale food industry in Nigeria. *International Journal of Advances in Management and Economics*, 5(2), 116-126.
- Olowolaju, P. S., & Mogaji, B. J. (2020). Effects of inventory management practices on the performance of small and medium scale enterprises SMEs in Akure Metropolis. *IOSR Journal of Business and Management (IOSR-JBM)* 8. (22), 01-07
- Onikoyi, I. A., Babafemi, E. A., Ojo, S., & Aje, C. O. (2017). Effect of inventory management practices on financial performance of Lafarge Wapco Plc. Nigeria. *European Journal of Business and Management*, 9(8), 113-122.

- Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms. *International Review of business research papers*, 2(2), 45-58.
- Potilen, T. & Goldsby, T. (2003). Vendor-managed inventory and supplier-managed inventory programs: How economic value added can help sell the change. *International Journal of Physical Distribution and Logistics Management*, 33(7): 689-707.
- Rodriguez, E., & Berry, A. (2002). *SMEs and the new economy: Philippine manufacturing in the 1990s* (pp. 136-57). Cheltenham: Edward Elgar.
- Sila, I., Ebrahimpour, M., & Birkholz, C. (2006). Quality in supply chains: an empirical analysis. *Supply Chain Management: An International Journal*.
- Tersine, R. J. (1994). *Principles of Inventory and Materials Management*, 4th ed. New York: Elsevier North-Holland.
- Wailer L, Jay H, Barry O. (2009) *Management theory: Principle and Practices*, New York: Harcourt Branch Jovanovich Publishers.
- Walter, M. Johnson, E. and Davis, T. (1999). Vendor Managed Inventory in the Retail Supply Chain. *Journal of Business Logistics*, 20(1): 479-498.
- Zaman, T. (2021). An efficient exponential estimator of the mean under stratified random sampling. *Mathematical Population Studies*, 28(2), 104-121.
- Zhang, S., Huang, K., & Yuan, Y. (2021). Spare Parts Inventory Management: A Literature Review. *Sustainability*, 13(5), 2460.

