INVENTORY MANAGEMENT PRACTICES AND OPERATIONAL PERFORMANCE OF FAST FOOD RESTAURANTS: A CASE OF JAVA HOUSE UGANDA.

BY

MUJASI BRIAN

17/U/14783/GMSC/PE

A DISSERTATION SUBMITTED TO KYAMBOGO UNIVERSITY GRADUATE SCHOOL IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS OF SCIENCE IN PROCUREMENT AND SUPPLY CHAIN MANAGEMENT OF KYAMBOGO UNIVERSITY.

MAY, 2021

DECLARATION

I, **Mujasi Brian,** hereby declare that this research dissertation is my original work and that it does not incorporate without acknowledgement any material previously submitted for a Master's degree or any other academic award in any University; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text to that effect.

Sign: ……. Date: …….

MUJASI BRIAN

17/U/14783/GMSC/PE

APPROVAL

This is to certify that this dissertation has been prepared and compiled by Mujasi Brian and that it was done under our supervision. It is now ready for submission to the Graduate School Kyambogo University in partial fulfilment for the requirements of the award of a Degree of Master of Science in Procurement and Supply Chain Management.

Signature …… Date ……..….

DR. FRANCIS SSENNOGA

PRINCIPAL SUPERVISOR

Signature …… Date ……..

DR. WATMON. B. TITUS

SECOND SUPERVISOR

DEDICATION

This dissertation is dedicated to my mother; Mrs. Namugosa Monica and Aisha Mirembe Nante that your efforts didn't go to waste. All gratitude goes to the almighty God.

ACKNOWLEDGEMENT

With utmost appreciation, I acknowledge the contribution of my supervisors; Dr. Francis Ssennoga and Dr. Watmon B. Titus of Kyambogo University for their academic guidance, commitment and willingness to help me complete this work.

I acknowledge with gratitude the contributions and co-operation of Java House Uganda Staff for their enthusiasm to provide the necessary information when I visited their respective stations during the research process. Without their assistance, this study would have been difficult to realize.

I would like in a special way to sincerely recognize Miss Aisha Mirembe Nante for continuously encouraging me, guiding me and for always providing a shoulder for me to lean on. I would also like to acknowledge the contribution of my classmates especially my discussion group in the MSC class from whom I enjoyed fruitful discussions on many topics. Lastly, I thank my colleagues at work who always stood in for me when I could not fully execute my duties in pursuit of the MSC.

May God Bless Them All

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

ABC : ACTIVITY BASED COSTING

CVI : CONTENT VALIDITY INDEX

EDI : ELECTRONIC DATA INTERCHANGE

EOQ : ECONOMIC ORDER QUANTITY

ERP : ENTERPRISE RESOURCE PLANNING

FEFO : FIRST EXPIRED FIRST OUT

FIFO : FIRST EXPIRED FIRST OUT

GPS : GLOBAL POSITIONING SYSTEM

JIT : JUST IN TIME

KFC : KENTUCKY FRIED CHICKEN

MRP : MATERIALS RESOURCE PLANNING

RFID : RADIO FREQUENCY IDENTIFICATION

TCA : TRANSACTIONAL COST ANALYSIS THEORY

VMI : VENDOR MANAGED INVENTORY

ABSTRACT

The study examined effect of Inventory Management Inventory practices on Operational Performance a case of Java House Uganda. The study specifically examined the effect of vendor managed inventory, first expired first out and just in time on the operational performance of Java House. The study adopted the Transactional cost analysis and Lean Theory to conceptualize the variables as used in the study. In the study, a cross sectional survey research design was adopted; simple random sampling technique was used to select a sample of 90 employees of Java House from a population of 102 respondents. Out of the 90 questionnaires administered, only 70 questionnaires were filled and returned constituting a response rate of 78%. Quantitative and qualitative approaches were used to collect data from Java House employees with the help of questionnaires and interview guides respectively. In the study, analysis was done at different levels first with descriptive statistics, followed by correlation and later regression analysis. The findings of the study revealed that vendor managed inventory was the strongest predictor of operational performance (Beta= 0.547, p=0.000), this was followed by first expired first out (Beta=- 0.415, p=0.001) and lastly just in time which was insignificant (Beta= -0.146 p=0.367). The study recommended that efforts should be done to implement vendor managed inventory fully put in place shelf life modelling strategy to monitor the expiry dates and use just in time strategy for all perishable inventory which is not imported from other countries.

Key words: Vendor Managed Inventory, First Expired First Out, Just in Time and Operational Performance.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Service providers that have substitute products are easily sought for by customers who might not get their first preference of items (sharma,2009). Customer satisfaction can be achieved through proper inventory management which further results into clear competitive advantage, efficiency, good quality, shorter lead times and cost reduction.

Java house Uganda Annual stock report 2018, indicates that they face a challenge of improper inventory management manifested in instances of longer lead times, frequent stock outs, expired items and tieing up of capital and this immensely affects the operations of the company. The report therefore recommended the full implementation of vendor managed inventory, first out first expired and just in time.

It's against this background that this study attempted to examine the effects of inventory management practices on operational performance of Java house Uganda. Chapter one presented the background to the study, statement of the problem, objective of the study, statement of the research questions, conceptual framework, scope of the study, justification of the study and significance of the study.

1.1 Background to the study

Conceptual perspective, theoretical and historical perspective formed the background to the study as elaborated below.

1.1.1 Historical perspective

Operations in the food service industry is both defined by tangible results and not tangible results that's if you are to compare it with the manufacturing industry. Fast food service restaurants are places that serve meals and snacks for immediate consumption or takeaway. They are however, categorized according to the volumes of operations and that's say bulk food takeaway and small food takeaway. There are characteristics that make fast food service outlets different from arc ate food restaurants and it's this uniqueness that influences decisions made about production (Kanyan, Ngana & Boo,2016).

Kanyan et al. (2016), points out that demand for food in fast food restaurants depends on the timing, for example peak hours usually happen during breakfast, lunch and dinner and since food is perishable it is a requirement that its properly handled before, during and after preparation. Additionally, food menus could change according to customer preferences and tastes. This uniqueness however, might create challenges in making production schedules which in turn could lead to poor quality, longer lead times and an increase in operational costs.

Mbah, Obiezekwen and Okuoyibo (2019), state that customers over time have become very particular with value for money and thus require quality of services least they would shift their allegiance to the other competitors, therefore fast food restaurants have an obligation of maintaining high quality but as well as minding about how they could reduce costs in the supply chains so as to remain in business. This could be achieved through automation of their inventory systems and having a clear inventory policy. They ought to keep in mind on how much inventory to keep and at what minimum levels to order because keeping a lot of inventory means tieing of capital that could have been used to generate incomes somewhere else and also reduce the cost of operations and minimizing losses (Hugo, Fettermann, Tortorella, &Testoni,2016).

Over the years it has been observed that fast food restaurants depend on inventory for the success of their operations and that is the reason why they use anticipation of inventory which is the buffer inventory a company maintains to sustain sales promotions and peak hour sales (Fogarty, Blackstone & Hoffman 1991).

Factually, inventory management been considered to be excesses of items or shortfalls of inventory to use in production. Several consequences could be faced by organizations when they hold too much or too little inventory thus escalating the inventory problem. This therefore required organizations to automate their systems so as to progress in inventory visibility and to produce goods faster in multiple variation and greater quality (Letinkaya, &Lee, 2000).

As a fact, since 1980s management of inventory has become of very strategic importance and also supplementing production planning and scheduling of production (Larson,1995). This has prompted many firms to collaborate with other in their supply chains, for instance sharing of inventory information through inventory strategies like vendor managed inventory among others so that the variability of the demand they observe is significantly lower (Jay & Barry,2006).

Recently they have also been initiatives put across on how to effectively manage inventory and thus we have seen development of inventory management practices like just in time, Enterprise Resource Planning, Vendor managed inventory among others and additionally emergent studies observe that the nature of a firms' requirement and marketing situations play a strategic role in understanding optimal inventories (Zaim, Tatonglu, Bayraktar, Demirbag &Koh, 2007).

In Uganda fast food outlets have received overwhelming reception and benefaction over the years as more brands emerge yearly, thus amplified rivalry and pursuit for market share. Cafe pap, Café bravo, Kentucky fried chicken, Gaucho grill, Café javas, Java House have unbolted new fast food

restaurants around Uganda where a progressively food market as more of the middle-income class prefer to dine out rather than prepare meals at home (Sserunkuma, Wabbi &Ayo,2012).

1.1.2 Theoretical perspective

Lean theory (1978) and Transactional Cost Analysis Theory (1981) guided this research.

Transactional Cost Analysis Theory

This theory provides substitutes on how numerous transactions and their indicants should be conducted (Williamson,1981) where the theory ascertains that expenses within the supply chain are maintained to their lowest (Halldorsson, Kotzab, Mikkola& Larsen, 2007.Economics and organizational structures and performance are some of the areas where the Transactional Cost Analysis Theory is widely adopted.

Williamson,1981, contends that organizations can decrease their transactional costs by precipitously assimilating as well as enhancing the grade of trust concurrently. This nature of incorporations is expected to decrease the expenses of inventory management as well as increasing the service levels of both inside and outside clientele even as realizing capital to be used in the other sectors of the business.

Therefore, this theory is practically very important to this study as it aims at reducing cost of doing business through proper management of inventory in terms of implementing and applying of first expired first out, just in time and Vendor managed inventory because all these practices aim at keeping average stock points thus decreasing costs of wastages, tieing of capital, over keeping and stockouts. On the other good inventory management practices improve quality of delivered items, services and shortens delivery times and all these aid in reducing costs experienced across the supply chains.

Lean Theory

The theory is based on experiences from Toyota whose aim was to increase market share by improving on the efficiency of their processes (Ohno,1988, Monden,1983). Their main emphasis was to eliminate wastes in the supply chains. Additionally, lean is value stream whose emphasis is on encompassing the focal company, customers and supply chain partners (Lewis,2000). Value can be defined by the ultimate customer. This theory also offered guidance to this research because TCA theory mainly focuses on cost and doesn't address the equally important aspect of just in time that focuses on majorly time and when stocks are received when demand arises. Lean theory is an expansion of ideas of just in time. The theory discourages the idea of keeping of stock and elimination of waste in the production process.

Leanness of inventory impacts the productivity of a business firm and the best tools of stock management. The theory expedites on how producer's malleability in their requesting choices lessen the supplies of stock aimed at eradicating costs associated with the conveyance of inventory. This theory is also equally pertinent to this study because java house pacts with fast foods that get spoilt easily in their nature and the applicability of Just in time eliminates stocking of some items like cheese, fillet for a long time as storage depends on actual demand.

1.1.3 Conceptual background

Inventory management practices and operational performance variables were the main focus of this study.

Inventory management practices

Inventory are goods or resources used by an organization for purpose of production or sale (Adyemi &Salami,2010). Miller (2010), defines inventory management practices as all forms of

activities recognized to make sure that clients have accessibility to products. It acts as a catalyst in harmonization of activities such as procurement, business along with logistics in order to meet marketing as it ensures that items are available for sale. Priniotakis and Angelopoulos, (2018) define inventory management practices as processes involved with determining how much to order versus how much to keep at a given period of time.

Several authors have written about inventory management practices and the notable ones are Gitau; Kanguru &Onyango 2016.According to Kanguru (2016) inventory management practices include EOQ, JIT, Activity Based Costing Analysis, where he emphasized that there are cardinal rules that direct inventory management practices. Gitau (2016) states that programmed restocking, ABC, just in Time inventory, Economic order quantity and VMI are inventory management practices, whilst Onyango (2016) also affirms that the above qualify to be inventory management practices. For the purposes of this study therefore, inventory management practices have been hypothesized as Just in time, Vendor managed inventory and First Expired First issued reason being that in the fast food industry inventories used have short shelf life, require shorter lead times and customers are very particular with the quality of food served. The implementation of the above inventory practices will to a great extent reduce on expiry of items, reduce on lead-times and improve on the quality of food served.

Operational performance

To be more competitive and successful in today's dynamic markets, companies ought to be more capable of manufacturing product of high quality at low cost and providing highest customer service as indicated by Adeyemi &Salami(2010).In order to improve operational efficiency organizations have to have effective mechanisms that aid in optimization of inventory as it's a key ingredient in production and improving on the sales of an organization(Abdel-Maksoud, Asada

&Nakagawa,2008).A firms performance is such a flexible term that may include different meanings for as long as it focuses on the functioning and output of resources invested.

Operational performance therefore is the process of enumerating the efficacy and productivity of inventory management of firms (Mbah et al..,2019).

Based on the above conceptualization by the different authors, operational in this study was measured as cost reduction, quality of food and shortened lead-times.

Conceptual background

Java house coffee shop Africa started as a single coffee shop in Nairobi Kenya in 1999, introducing coffee drinking and an exotic menu to that market. There after more java spots where introduced serving their unique cuisine that excited netizens as they gladly called it the java experience.

Over the years Java house has expanded their wings across East Africa with branches now in Uganda and Rwanda. The offshore branches (outside Kenya) independently manage their supply chains at their respective commissaries.

Java house Uganda which was our primary concern receives their inventory at their commissary which acts as a redistribution center for the other branches on request. They keep inventories such as fish fillet, chicken, pork ribs, coffee machines, ovens, computers, coffee beans among others. Those inventories are categorized in different store keeping positions such as fresh product store, roastery store, capex store and cold chain store.

Java house Uganda being a fast food restaurant chain faces consistent challenges such as out of stock, shelf life expiries, and quality and increased cost of operations that eventually affect the efficiency of their very many branches in terms of compromised quality, longer lead-times and increased costs of operations (Kevin Ashly annual stock variance 2019). Automation of the

inventory management practices would therefore further help Java house to solve the above problems.

The above challenges prompted this study that was intended to examine the effect of inventory management practices on operational performance at Java house Uganda as a case study.

1.2 Statement of the problem

When organizations properly implement their inventory management strategies there is reduction in lead-times, delivery of improved quality of products that lead to efficiently manage costs (Kanyan et al..,2016).Java house being a fast food restaurant means it has an interface with both dine in and dine out customers with different tastes and preferences. They have an exotic menu that consists of beverages, sauces, bakery products like cakes, croissants, marinated steaks, pork ribs, chicken legs among other products(Java house menu 2020).Having a wide menu requires Java house to have a robust inventory management mechanism so as to meet the ever increasing demand from customers. To cope up with the demand the company supply chains interact with items such as Irish potatoes, gouda cheese, soy milk, coffee beans, meats, among others.

However, the lack of proper implementation and full automation of the inventory management practices of FEFO, JIT and VIM has led to consistent stockouts, expired items, compromised quality and high costs of production which affect the operations of the organization(Kevin Ashly annual stock variance report ,2019).Proper implementation and full automation of the above inventory management practices would enable Java house overcome the above challenges and hence improve on the efficiency of the company.

Therefore, this study aimed at establishing the effect of inventory management practices on operational performance of Java house Uganda.

1.3 General objective

To examine the effect of Inventory Management Practices on operational performance in Java House Uganda.

1.3.1 Specific objectives

- To assess the extent to which Vendor Managed Inventory has an effect on operational performance in Java House Uganda.
- To assess the extent to which first Expired First Out has an effect on operational performance in Java House Uganda.
- To assess the extent to which Just in Time has an effect on operational performance in Java House Uganda.

1.4 Research questions

- To what extent does Vendor Managed Inventory affect operational performance in Java House Uganda?
- To what extent does First Expired First Out affect operational performance in Java House Uganda?
- To what extent does Just in Time affect operational performance in Java House Uganda?

1.5 Scope of the study

1.5.1 Content scope

The study engrossed on the effect of inventory management practices on operational performance of Java House Uganda, focusing at inventory management practices as the independent variable which was measured as First Expired First Out, just in Time and Vendor Managed Inventory and

operational performance as the dependent variable which was measured as quality, cost reduction and shorter lead-times.

1.5.2 Geographical scope

This study was carried out at the Java House commissary located in Bugolobi spring close Nakawa Kampala city and the other branches in Acacia place, Lugogo bypass, imperial mall Entebbe, Total Acacia and Shell Jinja city. Reason being the research wanted a comprehensive analysis on all the branches so as to enrich the research.

1.5.3 Time scope

The study covered literature from 1985 to present because the researcher assumed that the information was important and relevant for the study. This research was conducted for a period of six months as a requirement for the award of a master's degree of Kyambogo University as it believed its sufficient enough to understand the problem, collect data and analyze the findings for final submission of the thesis.

1.6 Significance of the study

The study will be of great value to established fast food restaurants, new restaurants and other players in the industry by availing information that would be of importance in understanding inventory management practices, methodology application and implementable importance to Java house whereby investors will rely on the findings of the study to implement inventory management practices geared towards improvement of the operational performance of the organization.

Researchers will use the study as a foundation for future study in the areas of inventory management practices and operational performance of organizations.

Fast food industry being a new trend in the market, researchers might use this work to enrich their research in this area. Researchers might also share this work for the benefit of their research and as a result the research will be of great benefit to those that want to make further research in the area of inventory management practices and operational performance of fast food restaurants.

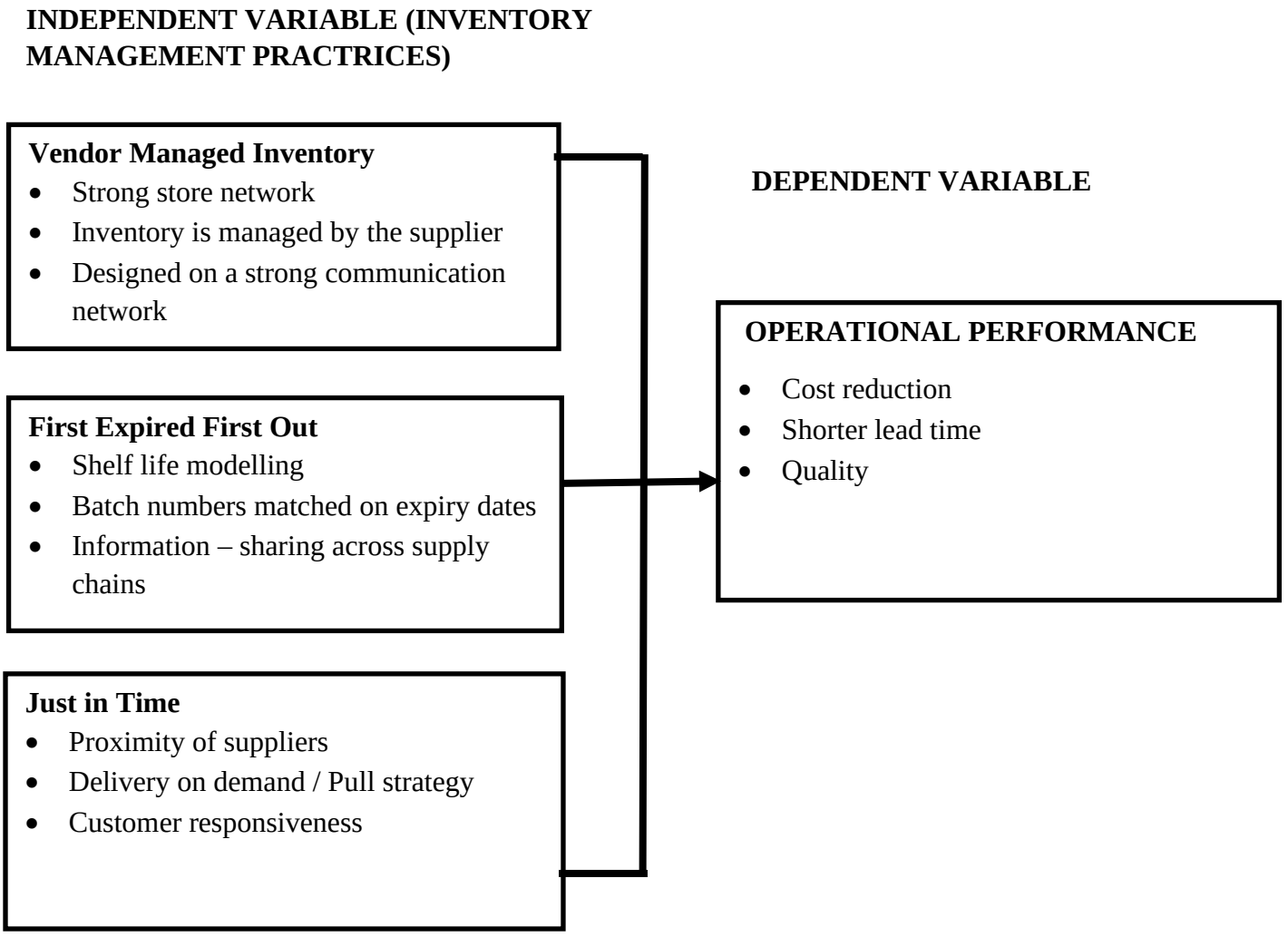
This study also encourages knowledge sharing by adding up on the literature on inventory management practices in the fast food restaurants and its effect on operational performance.

1.7 Justification of the study

Fast food restaurants are increasingly becoming very popular especially among town dwellers who have no time to make meals at home and as a result they prefer fast foods. This therefore explains the central role that fast foods restaurant play in the economy and lives of netizens. These are informed customers who are particular on what kind of foods is served to them, how long it takes and they are having it at what cost. The increasing numbers of fast foods has also increased on competition for market share and thus making management of inventory so central so as to increase on effective service delivery and operational efficiency. This research there undertook to establish the challenges fast foods are facing and also providing solutions to those problems.

1.8 Conceptual Framework

The conceptual framework below indicates inventory management practices being the independent variable having parameters including VMI, FEFO and JIT, while the dependent variable being operational performance measured using cost reduction, shorter lead times and quality.



Source :Adopted with modifications from Samarthakani & Kannappa (2018)& Mulumba (2016).

Figure 1. 1: Conceptual Framework

The conceptual model above was the basis of this research where by the independent variable was measured using VMI, FEFO and JIT while the dependent variable had dimensions of quality, cost reduction and shorter lead times. These concepts are explained below.

Inventory management practices under this study referred to the techniques/ methods that the organization can apply in order to manage inventory. Inventory management practices were measured using the following dimensions;

Vendor managed Inventory under this study refers to an inventory practice where the supplier managers his or her stock in the buyer's premises. While **FEFO** refers to the practice where stock is managed in a way that the items that expire first should be the first to be issued out first and lasted **JIT** implies ordering for stock from suppliers when the demand for that particular item arises.

The dependent variable being **Operational performance** was measured using cost reduction which simply means reducing on costs like holding and expiry costs, quality meaning zero defects and fit for purpose and finally shorter lead times implying the time between ordering and receipt of goods or stock reducing.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of related literature on inventory management practices and operational performance of fast food restaurants and their theoretical models that closely related to the topic.

The chapter also reviewed past research findings in regards to the effects of inventory management on operational performance of fast food restaurants bringing out the research gap and studying various experiential literature.

2.1 Theoretical Review

For the resolves of this research, the research was directed by Lean Theory (1978) and Transactional Cost Analysis Theory (1981).

2.1.1 Transactional Cost Analysis Theory

TCA theory was developed by Williamson (1981) where he offered comparative assessment of the advantages compared to resource capability theory in an effort to sustain his legacy. Williamson (1981) asserts that TCA theory guarantees that expenses in the supply chain are maintained at minimum levels. TCA theory offers a comparative advantage in terms of both its degree of operationalization and its body of empirical evidence because its specifically used in the study of economics and organizational structures and performance. He also asserts that TCA theory needs to be more dynamic in nature and that it should push beyond generic governance integrated into the model of general equilibrium and established his transaction costs economics in the novel theory of organizations.

Williamson (1981), contends that firms can lessen their costs of transaction via vertical integrations as well as enhancing the degree of trust concurrently. This is further likely to reduce the resources used to purchase inventory as well as improving on the service levels internally and externally across the supply chains.

This theory contends that proper inventory management will simultaneously reduce on costs of operations as long as the application of FEFO, JIT and VMI is done accordingly thus its relevance to the study. All the above inventory management practices aim at maintaining acceptable inventory levels, thus minimizing costs associated with expired items, tieing up of capital in stock because of overstocking. Good inventory management practices improve quality of items delivered and reduces on lead-times because of an efficient planning network across the supply chains.

2.1.2 Lean theory

Lean theory of manufacturing that incorporates collection of principles, tools, and techniques into business processes to optimize time, productivity, assets, quality and human resource whilst improving the quality levels of products and services was developed basing on the works of Ohno (1978) and Deming (1988) with their main emphasis being waste elimination. Application of the lean theory is one of the most important concepts that help companies gain competitive advantage in these dynamic markets because it focuses on principles like waste elimination, reducing on the number of resources used and creating value. The researcher chose this theory so as to address the aspect of Just in Time that focuses on ordering for stock just when its needed therefore eliminates holding costs, unlike the TCA theory only focuses on cost. This theory discourages having buffer stocks in storage areas that might cause expiry risks, increase on holding costs among others. The idea of zero stock piling enables companies to adapt to leanness strategy of inventory management

that enhances strict planning and a good inventory policy and also elimination of costs associated with transportation of inventory.

This theory too was relevant to the study owing to the perishability nature of inventory used at Java House Uganda thus the application of Just in Time practice reduces on stock piling of inventory for a long period of time as requests depend on actual demand. Java house uses perishable items such as fresh milk, fruits and vegetables, meats among others.

2.2 Empirical review of the study objectives

2.2.1 First Expired First Out and operational performance

The dynamic trends in supply chain management makes it more complex to manage supply chains as companies strive to grab the already flooded market especially cold chains for perishable products such as processed and fresh food products (Hertog et al.,2014).

First Expired First Out unlike First in First Out does not require assumptions during its implementation, the items with the nearest expiry date and shelf life is issued out first in a bid to reduce the occurrence of expired goods in the storage place, it's also known as dynamic use by date. The method aims to eliminate food positioning as the criteria does not allow storage of expired items and there is also guarantee that products will arrive with the expected quality and food losses during transport will be avoided (Katsouranis, Taoukis &Nychas,2005).

Food handling is very critical especially for commercial food businesses, customers are comfortable having their meals at places where hygiene is adhered to, using expired ingredients in the production of food leads to food positioning that puts a big health risk to the consumers of the said food. This makes handling conditions in the supply chains, logistics very critical. In a bid to avoid or reduce expired goods Enterprise Resource planning systems have incorporated into them

provisions for alerting and raising red flags incase expiry dates of items near, for example sensor technologies to monitor logistics conditions, radio frequency identification and global positioning systems to enable fast communications throughout the supply chains, shelf life modelling, ware house best practices, to predict the products behavior or a combination of one or more of these aspects (Hertog et al.,2014).

Shelf life modelling depends on the actual dates given to a product by the manufacturers after which the product wouldn't be fit for human consumption. For example, chocolate fudge cakes, red velvet cakes and cheese cakes have a day's expiry life span beyond which they are not fit for human consumption (Arnold 2010). Whereas fresh milk cream milk takes three days to expire, long-life milk may take up to six months to expire and to prevent this Fast food restaurant turn fresh cream milk into other products like ice cream that take little longer to expire. This therefore calls for implementation of a robust inventory policy that is strict on shelf life with information incorporated into the warehouse management system with much emphasis put on FEFO. Optimation will automatically be realized because of the efficiency in the flow of products.

FEFO as an inventory management practice carries no assumptions as its only products with known expiry dates that are shipped. Goods with longer expiry dates are given priority while ordering so as to eliminate wastes due to expiry thus ensuring quality and adherence to food safety rules and regulations. Proper implementation of FEFO needs an information system that allows for sharing of data across supply chains amongst trading partners. This leads to emergency of data driven supply chains that will give more information to the purchase managers about the shelf life of the products to be procured and as result the store managers may decide to issue goods with short shelf life immediately, they are received. As a result, distribution centers need to coordinate

areas of inventory destination. This also enables the distribution managers to monitor consumption of the products in the ware houses (Hertzog et al..,2014).

2.2.2 Just in time inventory practice and operational performance

JIT as an inventory management practice looks at how keeping just the required quantities of inventory for production at the right time, place and quantities of inventory(Carlson,2002).With the aim of enhancing on the return of investment of firms, manufacturing businesses in Japan established the concept of JIT in which inventories are ordered when they are only required for production with the aim of further reducing the in-process inventory and accompanying costs(Schonsleben,2000).JIT in other words advocates for zero stocks in the stocks and the suppliers role is to deliver items when they are actually required for production(Lazaridis & Dimitrios,2005).

Just in time to work efficiently and effectively, suppliers are required to have very good quality goods as there might be little time to inspect what's is supplied because any compromise on quality may lead to halt of production lines and thus this calls for a strong relationship with the suppliers. The suppliers further should be near the production facility and with dependable transport systems (Kortz,2003).

JIT eliminates inventories in the stores thus doing away with handling costs by avoiding carriages of excess inventories and mismanagement of raw materials. According to Kortz (2003), JIT discourages maintain of inventories that are associated with high costs of holding and thus it becomes of advantage to organizations to procure inventory just when there is a need for production so as to cut costs such as lighting, storage, human resource among other (Dimitrios,2008).

Companies are able to produce products as on when they are required by the customers. Effective implementation of the just in time inventory management practice leads to reduction of costs across supply chains and also eliminating non value added costs. These activities don't add value and also consume a lot of resources that should have been used for other activities in the company, activities may include purchasing, setting of machines, moving from one place to another, rework among others (Dalci &Tanis,2006).

Just in time main focus is on ordering for items just when an order emerges by the customers to avoid redundancy of raw materials, production is only done when their requirement is eminent. The aim of all this is to shorten lead times, customer satisfaction and incase for fast foods customers are served fresh food because its only prepared just when the order is registered. These form the measuring yard stick for determining the efficiency of the JIT inventory management practice. IT requires the use of specific tools so avoid to avoid production break downs that might affect the delivery of products so as to enhance competitive advantage. Proper and effective use of JIT inventory management practice reduces on inventory related costs, increase on quality, shorten lead-times and reduce manufacturing costs by minimizing costs associated by non-value-added activities and their costs. The above a representative of the benefits associated with proper implementation of the just in time inventory management practice. Responsiveness of the JIT inventory management practice increases on customer satisfaction (Inman, Sale, Green&Whitten,2011).

Kamakia (2015) noted that implementation of the JIT inventory management practice makes production processes more efficient and cost effective and customer focused. For organizations adopting JIT have an upper hand and are competitive since their costs of holding costs are completely eliminated and this gives them a competitive advantage over others. For starters JIT

inventory management should be customized to a particular industry for it to be effective and have a competitive advantage. The basic principle of JIT is to manage inventory planning such that there is always just right amount of inventory available to meet demands of your production process and the demands of your end customers, not too much and not too low stocks.

Dalci and Tanis (2006), state that Just in time inventory management practice aims at reducing on work in progress, finished goods, inventory, reducing lead times and increasing on the quality of products produced. JIT uses the pull technique and production is on made according to the real prospects of the markets, machine operators do not produce according to schedule or raw materials availability but only according to the orders in the market and production doesn't start until there is an order by the end customers. In case of an additional order a message is sent to the production team to adjust the order according to the customer needs.

Being responsive to your customers requires you to be closer and this means information sharing on how much and when to produce and this reduces on capital tied in stock of raw materials and goods inventory. Having zero stocks reduces on obsolesce and redundancy of stock and this means zero loss of stock through expiries, and better you can optimize on your transportation and logistics operations. All this has an end result of saving the organizations resources (Kamakia,2015).

Implementation of JIT inventory management practice requires a whole overhaul of the existing systems for it to be effective. Just in time has emerged as a better alternative tool because it helps to achieve significant costs savings. JIT discourages maintaining of work in progress and finished goods, whatever is produced is dispatched because it's on a held order. JIT is built on a responsive supply chain with clear instructions and roles at every step (Dalci &Tanis,2006)

2.2.3 Vendor managed inventory and operational performance.

VMI is built around the merchant being completely in charge of replenishing stock for the customer, its streamlined method of how to deal with inventory management and requests where information regarding stock is shared using Electronic point of sale data to the buyers(Vergi,2012).VMI requires a strong store network because it can only be effective when there is client responsiveness to the orders by merchant thus lessening the free market activity hole consequently giving the fulfillment to the end client benefiting the desirable item when required (Jame,2008).A coordinated store network must share their consumption data so as to avoid under stocking and overstocking.

VIM inventory management practice, the supplier is responsible for making replenishment decisions on behalf of the buyer for example how much and when to deliver the products. The all-important decisions relating stock are made by the supplier. The vendor monitors the inventory levels of the buyer and decides when to replenish and how much to replenish. The transportation burden and resupply are made by the supplier (Vergin, 2012).

VMI the supplier makes all decisions as regards to replenish, thus an efficient flow of information is a mandatory requirement for the success of the practice and this is where the electronic data interchange becomes crucial, a supplier's inventory system is interlinked to that of the client to ensure that there are no shortages. The client surrenders their inventory management function to the supplier and also transfers the financial responsibility of inventory to the supplier (Kemunto,2014).

A score of researchers have made enormous efforts on analyzing different inventory management practices and operational performance and their findings form a credible understanding of the

concept. VMI most importantly show how supplier decision in the supply chains have a very big impact on the client's performance, suppliers can make good replenishment decisions. Several authors have commended VMI as an inventory management practice with several advantages. Waller, Johnson, &Davis,1999) pointed out that the main advantages of VMI are shorted lead-times, cost reduction and improved customer service levels that can be improved on both sides. Fox (1996) and Williams (2000) suggested that these advantages can improve the level of service, reduce demand uncertainty and save costs. Several firms are adopting VMI so as to shift the burden of inventory on to the suppliers.

Since it's the supplier managing inventory, issues of stockouts are minimized as there are always planned resupply schedules and there will also be no costs associated to handling on the side of the client. The perfect ingredient for VMI is relationship between the supplier and the client and this should allow for effective communication which should be of good intention from the beginning of business and should bring about a positive relation between the supplier and the customer(Frahm,2008).Vendor managed inventory practice allows for smaller buffers of capacity and inventory. VMI can be used to resolve the dilemma of conflicting performance measures for example end of month inventory level versus out of stock measure(Wailer, Jay &Barry,2009).

Marques, Thierry and Gourc (2010), note that the relationship between the supplier and the purchaser is enhanced through constant communication and using of electronic data interchanges and this positively affects vendor managed inventory practice. For VMI to be successful, a thorough examination of the stability of the client should be done to know their interests because a high vulnerability sought after adversely impacts on the implementation of VMI. Adeyemi and Salami (2010), state the importance of upstream information exchange to the merchant as being very vital in determining inventory levels and how to replenish in real time.

In VMI arrangement the merchant takes over the very important decisions on inventory on behalf of the buyer, for example monitoring, inventory planning and inventory replenishment schedules at the client's premises. Operational wise, VMI practice, suppliers are responsible for clients' inventory control (Disney & Towill,2003). The merchant in most cases receives data regarding the stock levels at the clients' ware house through an electronic data interchange and this keeps them in the know on how and when to replenish stock. After analysis of the exchanged inventory data, the supplier will promptly decide on which items to give priority while replenishing. The VMI arrangement is guided by an agreement between the parties and this usually states minimum and maximum inventory, important still the client only pays for the items sold.

The challenge in VMI is the issue of lead-times especially when the inventory is an import and also high viability of orders coming from the client and change of tastes and preferences. There might also be overstocking of the clients warehouse and often delays of delivery of certain goods from the supplier (Rajagopolan, Lawrence & Krishnadevarajan,2007).To counter such challenges, client should share their stock on hand reports and stock movement with the suppliers so as to avoid shortfalls on delivery that might hamper operations of the company while at the same time allow for reduction of inventory so as not to tie capital in inventory, which will lead to better cash management. The issue of reduced supply and other costs are transferred to the end user customer.

In the end, the client and the supplier will have secured a competitive edge through the introduction of VMI practice, and they should be willing to work on the challenges facing VMI implementation (Walter, Johnson & Davis,1999). Many researchers have labored to explain how strategic demand sharing is to businesses in ensuring efficiency in the supply chains. Vendor managed inventory explains how an understanding between the client and the supplier is very vital especially in this very competitive business environment.

VMI arrangement the supplier takes up ownership of inventory on behalf of the client and ensure that there's stock whenever its needed. With challenges relating to uncertainties in delivery, delays in delivery, expiry of items, making strategic partnerships is very important (Tyan, & Wee,2003).

From operational performance perspective, VMI arrangement enables the client company to focus on other business other than inventory because it's the supplier who is responsible for management of inventory. This allows the client company to focus on meeting the needs of the end user customer and thus improving on their service levels. The supplier on the other side gets market for their products, reduce ordering uncertainties by firms, reducing logistical costs (Yao, Evers &Dresner,2007).

Many studies have been conducted as regarding to the benefits associated with implementation of VMI in the area of planning and inventory can be quite significant. Tanskanen, Kaipia & Holmstrom (2002), noted that VMI if properly implemented can lead to substantial reduction on inventory kept in stores that usually ties up capital, it further can lead to improvement on the production from make to stock to make to order production. The supplier makes restocking decisions basing on the operational needs of the client company and also adjusting to the current trends in the industry. VMI improves on the efficiency in delivery of goods across supply chains.

VMI aids suppliers to manage repeat orders and eliminate the need for customers to reorder and exclude inventory and also stockouts. The customer on the other hand is relieved of the burden of ordering, shipping of materials, counting of inventory and stocking of low-value items and these costs are transferred to the supplier. The client company is able to reduce on the overall costs of product and increase on profit margin(Rajagopolan, Lawrence &Krishdevarajan,2007).There is also reduction of cycle time production and reduction of cost of sales due to stock outs (Irunju &

Wanjau,2011).Several other studies conducted on inventory management and operational performance for example Nsikan, Etim & Uduak (2015) examined inventory management practices and operational performance and their findings showed that medium size firms adopted a variety of inventory management strategies which were based on issues like changes in customer demand, forecast estimate and presence of production capacity. But, Brealey, Myers and Marcus (2007) state that there are preconditions for production where by inventory management calls for a tradeoff between costs and benefits.

2.4 Summary of literature review

A number of researchers have studied about inventory management practices and operational performance of firms, However, First Expired First Out being a new practice, little has been done on it. The literature reviewed shows how adoption of inventory management practices is beneficial to firms that properly implement them. Other studies have also shown challenges that companies with inventory management practices face. But still these studies available in literature don't clearly indicate the influence of inventory management practices on operational performance of firms. Still there is not enough information or research done on inventory management practices and operational performance of fast food restaurants.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section of the research pointed out the approach adopted by the researcher in answering the objectives. It therefore outlined the research design, study population and sample size selection, sampling techniques, data collection methods and instruments, reliability and validity, measurement of the objectives, data analysis, data collection methods, ethical considerations and limitations of the study.

3.1 Research design

An exploratory survey design with a cross sectional time horizon was selected for the study. The exploratory study was intended to understand the inventory problem that currently existed in Java House. The survey design allowed the collection of large amounts from a sizeable population in a more cost-effective manner (Saunders et al, 2016). A cross sectional time horizon was used because the research was intended to be carried for a particular period of time. Both quantitative and qualitative approaches were used. Quantitative approach collected quantitative data while qualitative approach was used to provide more clarity on the quantitative data that was collected.

3.2 Population of the study

The population of the study constituted 102 personnel who include staff from the stores, procurement, finance, cookery department (Java House Uganda HR's Records, 2009). The above staff were included in this study to provide information about inventory management practices and operational performance since they directly related to inventory in Java House in Uganda.

3.3 Sample size selection and sampling techniques

3.3.1 Sample size

Using Krejcie and Morgan's (1970) sample size selection table, 90 respondents were chosen for this study as they were a good representative of the whole study population.

Table 3. 1: Sample size

Departments	Population	Sample Size	Sampling Technique
Purchasing	5	5	Census sampling
Cookery	75	63	Random simple sampling
Finance	10	10	Census sampling
Stores	12	12	Census sampling
Total	**102**	**90**	

Source: **Java House Uganda HR's Records, (2019).**

3.3.2 Sampling Techniques

Both census and random simple sampling techniques were used in the selection of the sample as discussed below.

Census sampling

Under this study census sampling meant the actual counting of all the staff in the particular department and chosen to be a part of the study as they are. This was used in a way of including all the personnel in a department simply because the number was small to sample so staff from the procurement, stores and finance department were all included in the sample (Kukutai,2014).

Random simple sampling

This sampling technique was used to select personnel from cookery department as it was costly and time consuming for all the 75 staff to be included. Therefore a random simple sampling was used to select 63 respondents to be part of the study where each respondent had equal chances to be chosen for the study without bias (Amin, 2005).

3.4 Data sources and data collection methods

Both primary and secondary data was collected and used in the study to provide analysis, interpretation and conclusions. Questionnaire survey and interview methods were used

3.4.1 Questionnaire survey method

Questionnaire survey method involved distributing questionnaires to the respondents who were supposed to answer and return them. It collected data that was measurable, it was used because it collected large amount of data within a short period of time and at a lesser cost as compared to other methods (Amin, 2005).

3.4.2 Interview method

This method involved a face to face interaction with key informants of the study which included, stores supervisors, head cookery, head procurement and finance. These were chosen because they are at the helm of decision making in Java House Uganda and take inventory management decisions. Structured interviews were used inform of questionnaires based on a predetermined and identical set of questions (Saunders et al., 2009).

3.5 Data Collection Instruments

3.5.1 Structured Questionnaire

A structured questionnaire was issued to 90 respondents to fill and return for analysis. The questions included in the questionnaire were close ended to allow standardized answers which enabled smooth data analysis (Saunders et al.,2009). The level of agreement was determined by use of the Likert scale from 5-1 where 5 was strongly agree, 4- agree, 3- not sure, 2- disagree and 1- agree. This allowed quantifying of the responses and finding out how much value did the respondents attach to each of the statement that measured a particular construct. A questionnaire was first developed from the literature which was later customized to the current situation concerning inventory management practices. This was done with the help of supervisors. To test for its validity, pre testing was done to the colleagues in class and these never included the actual respondents of the study after which modifications were made incorporating in suggestions from the pre-test and finally it was rolled out for data collection.

3.5.2 Interview Guide

Here, a structured interview guide was used to ascertain more information about inventory management practices and their effect on operational performance. An arrangement was made to have a face to face discussion with the top management in cookery, finance, stores and procurement departments Amin (2005). This was done after organizing an appointment which took between 20-30minutes. This data enabled the research to triangulate the data from the questionnaire as well as from the interview guide.

3.6 Measurement of variables

Under this study all the measures of just in time, vendor managed inventory and first expired first out were developed from the related literature likewise measures of high quality, cost reduction and shorter lead-time were generated from literature. These were later channeled to the Likert scale that measured the level of agreement on a scale of 1-5 (strongly disagree to strongly agree).

3.7 Validity and reliability

3.7.1 Validity

Under this study, validity of the data instruments was tested to establish whether the statements provided were in line with a given variable or allowed for the achievement of the specific objectives. Validity under this study was concerned with whether the findings are really about what they appear to be about (Saunders et al.,2009). Validity was tested with the help of the supervisors throughout the design of the questionnaire and the interview guide but also content validity index was conducted were vague questions were included in the questionnaire to test the respondent's answering capacity. Only statements that had CVI of 0.7 and above were considered. Content validity index was arrived at using the formula detailed below;

$$CVI = \frac{\text{Total sum of items declared valid}}{\text{Total sum of items}}$$

$$CVI = N/S$$

Where: CVI is Content Validity Index

N is the sum of relevant items

S is the total sum of items

3.7.2 Reliability

Reliability under this study referred to the extent to which your data collection techniques or analysis procedures will yield consistent findings (Saunders et al., 2009). Cronbach Alpha coefficient was run to establish the internal consistency among the statements that measured the specific objectives and whether they were directly related to VMI, JIT and FEFO (Nunnally & Bernstein, 1994). Results between 0.7 and above were considered sufficient enough for the study as illustrated below;

Table 3. 2: Cronbach Alpha Reliability

Variable	**Items considered**	**Cronbach Coefficient**	**CVI**
VMI	10	0.987	0.76
JIT	10	0.978	0.71
FEFO	7	0.945	0.70
Operational Performance	4	0.889	0.80

Source: Primary data (2020)

3.8 Procedure of Data Collection

The researcher started by doing chapter one to three and also drafting a questionnaire with the help of supervisors who after approval, the researcher had to seek permission from the university to go collect data. A letter from graduate school of Kyambogo university was obtained to introduce the researcher to the field. Permission was granted for data collection at Java House Uganda. This was followed by training of research assistants that helped the researcher in collecting data from the different branches within a shortest period possible.

3.9 Data Analysis

Both quantitative and qualitative data was collected.

3.9.1 Quantitative data

Quantitative data was collected using a questionnaire. Statements in the questionnaire were coded which allowed easy data entry and analysis. Before data being entered in SPSS, questionnaires were numbered, missing values identified and filled then entered. A lot of analyses were carried out to remove outliers, check whether the data was normally distributed, factor analysis was also done to reduce on the factors. First descriptive analysis of frequency, mean, standard deviation and percentages were run to understand the descriptive nature of data. Later a multiple regression was run to establish the percent of variation caused by vendor managed inventory, just in time and first expired first out on operational performance in Java House.

3.9.2 Qualitative data.

After collecting data using questionnaires, the researcher conducted interviews with the key informants of the study to provide more insights on how Java House manages its inventory and also to understand in particular how vendor managed inventory, just in time and first expired first out affect the operational performance. Major themes were developed from the interviews and later analyzed using NVIVO to back up the quantitative findings.

3.10 Ethical Considerations

To conduct research effectively, ethical issues were taken into consideration and these included; Seeking permission, the researcher first sought permission from Java House Uganda to conduct research in their company.

All respondents were assured of their confidentiality as their names didn't appear anywhere on the questionnaire. They were also assured that the data collected was to only be used for study purposes and nothing else.

For all those who participated in the study had to consent freely without force. Those who rejected participation were left out of the study.

All data sources used in this study were acknowledged and included in the reference list.
Subjectivity during data collected was eliminated completely as respondents were given time to respond to questions freely.

3.11 Limitations of the Study

Due to COVID 19, it become extremely hard to have a one on one with the supervisors but this was solved through embracing modern technology like zoom and skype.

Accessing recent publication was easy as most of them were for paying however, my supervisor directed me to the central library of Kyambogo university where I was helped with E- library sources and journals this later on solved my problem of scanty information.

Delay in responding to the questionnaire as most workers or staff were having a busy day. This was solved through extending the deadline of picking the questionnaires to allow them fill them and increase on the response rate.

Some respondents deliberately refused to respond to the questionnaire. This was solved through replacing them with other respondents but also increasing the sample size to cater for the non-responses.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATIONS OF FINDINGS.

4.0 Introduction

Chapter four presents data which was collected from the field, the analysis and interpretation of the study findings. The chapter starts by presenting the response rate, analysis of background information presenting the frequency, percent, mean and standard deviation. This was followed by a multiple regression analysis of the study objectives. Data presentation was done following the study objectives of the effect vendor managed inventory, just in Time and First expired first out on operational performance of Java House in Uganda.

4.1 Response Rate

70 questionnaires were returned and fully answered out of the 90 that were issued out to the sample providing a response rate of 78% which was a representative of the study population from which the sample was picked all the interviews that were scheduled were conducted successfully with the key informants of the study.

4.2 Demographic characteristics of the respondents

Background information of age, gender, level of education and positions held were presented under this section mainly focusing on frequency and percent for all the areas.

Table 4. 1: Background information

Construct	Categories	Frequency	Percentage
Gender of respondents	Female	14	20
	Male	56	80
	Total	**70**	**100**
Position held in Java House	Stores	12	17.1
	Finance	10	14.3
	Purchasing	5	7.1
	Cookery	43	61.4
	Total	**70**	**100**
Education level	Diploma	22	31.4
	Certificate	22	31.4
	Degree	26	37.1
	Total	**70**	**100**
Time worked in Java House	1-4 years	13	18
	5-9years	42	60
	Above 10 years	15	21.4
	Total	**70**	**100**

Source: Primary Data (2020), N=70

Table 4.1 above indicates the gender of the respondents where 20% were females and 80% were men. This implied that the type of work in Java House Uganda requires more of male than women especially in the cookery department. However, females were also part of the study which provided

a fair judgment of inventory management practices and operational performance in Java House Uganda.

17.1% were of the respondents were from stores, 14.3% from finance, 7.1% were from purchasing and 61.4% were from cookery departments. This illustrated that the study included respondents that were directly involved or interacted with inventory management in Java House Uganda.
37.1% of the respondents had attained degree qualification, 31.4% of the respondents had attained certificate and diploma qualification. This showed that all the respondents chosen for this study had the required knowledge and understanding about the study objectives therefore provided useful insights and information that helped the researcher to make right recommendations and conclusions.

In terms of time worked in Java House 18% of the respondents had been in Java House Uganda between 1-4 years, 60% of the respondents had worked in Java between 5-9years, above 10 years which was 21.4% of the respondents had been in Java House Uganda for over 10 years. This implied that all the sampled respondents had an extensive understanding of the current position and phenomenon of inventory management practices in Java House Uganda.

4.3 Descriptive statistics of the study

Descriptive statistics of operational performance, vendor managed inventory, just in time and first expired first out were presented in this section presenting the mean and standard deviation.

Table 4. 2: Descriptive statistics for Operational Performance

Operational performance statement	Mean	Std. Dev
1 There is improved delivery time of the requirements	2.40	1.39
2 There is avoidance of stock outs	2.70	1.47
3 Costs related to handling inventory are minimized	2.63	1.51
4 Customer lead times are shortened	2.60	1.47

Source: Primary Data (2020), N=70

Table 4.2 above indicate the constructs of operational performance while presenting the mean and standard deviation. Statement of there is improved delivery time of the requirements had a mean of 2.40 and standard deviation of 1.39. This was followed by there is avoidance of stock outs had a mean of 2.70 with standard deviation of 1.47. This was followed by costs related to handling inventory are minimized with a mean of 2.63 and standard deviation of 1.51 and lastly customer lead times are shortened with a mean of 2.60 and standard deviation of 1.47. All the statements which measured operational performance.

This was asserted by the interviewee from purchasing commented that;

"Cost reduction, enhanced quality through less defects and shorter lead times are all achieved if focus is put on well inventory management in Java House Uganda."

Another key informant emphasized that;

"Java House Uganda has to increase its efforts and strategy on how they manage inventory if they are to see operational performance improve in terms of cost reduction, shorter lead times and improved quality."

4.4 Vendor Management Inventory Practice on Operational performance

The constructs for Vendor Managed Inventory studied were based on inventory managed by the suppliers, strong store network and designed on a strong communication network and the extent to which these constructs measuring Vendor Managed Inventory affects the operational performance of Java House. The descriptive statistics showing the mean and standard deviation of the statements on Vendor Managed Inventory is given in table 4.3 below

Table 4.3: Descriptive statistics for Vendor Managed Inventory on operational performance

Vendor management inventory statement	Mean	Std. Dev
1. Use of VMI has enabled an efficient inventory plan	2.46	1.51
2. Suppliers manage re-order levels	2.46	1.54
3. There is reduction on costs associated with ordering	2.46	1.52
4. Java house suppliers determine the maximum and minimum limits of inventory	2.46	1.52
5. Java house suppliers are in charge of inventory planning	2.46	1.57
6. Java house is able to reduce on their forecast uncertainties	2.47	1.56
7. There is reduction on transport costs	2.37	1.53
8. VMI has led to shorter lead times	2.44	1.55
9. VMI has made administration of the delivery process more efficient	2.43	1.52
10. There is never delays in supply of goods due to sharing of inventory information	2.44	1.53

Source: Primary data (2020), N=70

From the table 4.3 above, Use of VMI has enabled an efficient inventory plan had a mean of 2.46 and standard deviation of 1.51, Suppliers manage re-order levels was with mean of 2.46 and standard deviation of 1.54. This was followed by there is reduction on costs associated with ordering with mean of 2.46 and standard deviation of 1.52, Java house suppliers determine the maximum and minimum limits of inventory also had a mean of 2.46 and standard deviation of 1.52, java house suppliers are in charge of inventory planning was with mean of 2.46 and standard deviation of 1.57. Java house is able to reduce on their forecast uncertainties had a mean of 2.47 and standard deviation of 1.56, There is reduction on transport costs with a mean of 2.37 and standard deviation of 1.53, VMI has led to shorter lead times was with mean of 2.44 and standard deviation of 1.55. VMI has made administration of the delivery process more efficient had a mean of 2.43 and standard deviation of 1.52 and lastly there is never delays in supply of goods due to sharing of inventory information had a mean of 2.44 and standard deviation of 1.53. This implies that all the statements used to measure vendor managed inventory practice were understood by the respondents and also were attached much importance by respondents in measuring vendor managed inventory.

This was supported by the interviews conducted as an interviewee from the stores department affirmed that,

'Majority of the suppliers in Java House Uganda are in control of their inventory as they are responsible in ascertaining the re-order levels to facilitate timely stock replacement.'

Additionally, another interviewee noted that;

"Reduction in costs of ordering and enhanced quality are achieved when vendor managed inventory practice is implemented as vendors are accountable for the stock at Java House Uganda."

However, an interviewee from cookery department noted that,

'Inadequate sharing of information among the different users leads to over stocking of inventory yet the largest percent is perishable resulting into losses in form of spoilage. This is usually caused as a result of amplification of demand requirements.
'Operating on forecasts has costed Java House a lot of losses.'
'Failure to determine minimum and maximum levels of stock kept and utilized originates from lack of real time flow of information to the suppliers.'

Table 4. 4: Correlations between Vendor Managed Inventory and operational performance

		Vendor managed inventory	**Operational Performance**
Vendor	Pearson Correlation	1	.709**
Managed	Sig. (2-tailed)		.000
Inventory	N	70	70
Operational	Pearson Correlation	.709**	1
Performance	Sig. (2-tailed)	.000	
	N	70	70

****. Correlation is significant at the 0.01 level (2-tailed).**

Source: Primary Data (2020)

From the above table 4.4, Pearson correlation was 0.709**, and the sig value was at 0.000. This implies that vendor managed inventory practice and operational performance at Java House Uganda first are positively related and the strength of the relationship is high. This indicates that vendor managed inventory has a strong potential or effect on the operational performance in Java House in Uganda. Therefore, a lot of efforts should be directed towards the aspects of strong store network, inventory is managed by the supplier and designed on a strong communication network if Java House Uganda is to reduce costs, enhance quality and ensure shorter lead times.

The correlation results were in line the views of key informants like who asserted one said that;

'Failure to manage stock for mainly commodities which are perishable will result into losses in form of spoilage which increase the operational costs in Java House Uganda.'

However, on the other hand, one interviewee seemed to hold a view contrary to the above:

'Forecasting demand in Java House is done but sometimes things change as customer tastes change also whereby sometimes there are more demands than expected which causes urgency and to meet the extra need or demand from the customer, it comes with an extra cost to the company or to accommodate for such changes then the company has to hold stock to meet these unexpected demands though it's really a cost to us.'

4.5 First Expired First Out practice on operational performance

First Expired First Out was measured using batch numbers matched on expiry dates, shelf life modelling and information sharing across supply chains. Descriptive analysis of mean and standard deviation was presented for all the statements that were used to measure FEFO as presented below.

Table 4. 5: Descriptive statistics for First Expired First Out

First Expired First Out statement	Mean	Std. Dev
1.FEFO has reduced on costs associated with expiry of goods	2.47	1.57
2. Goods shipped by Java house have known expiry dates	2.31	1.54
3. FEFO has been able to reduce on storage risks	2.44	1.55
4. Java House has been able to get ISO certification and UNBS certification due to use of FEFO	2.16	1.36
5. Food losses during transportation are avoided	2.27	1.39
6. FEFO has led to constant monitoring of product perishability	2.33	1.39
7. Java House only ships goods with a high shelf life potential	2.47	1.48

Source: Primary data (2020), N=70

Drawing from the above table 4.5, FEFO has reduced on costs associated with expiry of goods

had a mean of 2.47 and standard deviation of 1.57, Goods shipped by Java house have known expiry dates with a mean of 2.31 and standard deviation of 1.54. This was followed by FEFO has been able to reduce on storage risks with a mean of 2.44 and standard deviation of 1.55, Java House has been able to get ISO certification and UNBS certification due to use of FEFO which had a mean of 2.16 and standard deviation of 1.36. Food losses during transportation are avoided had a mean of 2.27 and standard deviation of 1.39, FEFO has led to constant monitoring of product perishability with a mean of 2.33 and standard deviation of 1.39 and finally Java House only ships goods with a high shelf life potential with a mean of 2.47 and standard deviation of 1.48. This indicated that the respondents attached weight on all the statements that measured FEFO and understood their meaning. The qualitative analysis re affirmed that FEFO enables the organization to constantly monitor of inventory in terms of their life span where by those that expire first are used first before others and this reduces storage risks of theft and occupying space but also reduces on costs associated with expiry of goods since first expired moves out first.

Table 4. 6: Correlation between first expired first out and operational performance

		First expired first out	Operational performance
First expired first out	Pearson Correlation	1	.680**
	Sig. (2-tailed)		.000
	N	70	70
Operational performance	Pearson Correlation	.680**	1
	Sig. (2-tailed)	.000	
	N	70	70

**. Correlation is significant at the 0.01 level (2-tailed).

The table 4.6 above indicates Pearson coefficient r = .680** and sig value of 0.000 which is less than the P-value 0f 0.5. This further shows that FEFO and operational performance are highly

related meaning that FEFO has a strong effect on the operational performance of Java House. Measures of shelf life modelling, batch numbers matched to expiry dates and information sharing across the supply chain can positively improves on quality and eliminate costs associated with keeping inventory like expiry.

The above analysis was also backed up with qualitative analysis from interviews where a key informant said that,

'*Items which are to expire first should be identified and utilized first when preparing customer requests.'*

Another key informant from stores pointed out that;

"It's vital to have batch numbers coordinated to the expiry dates for easy ascertaining of stock/items or raw materials that are about to go bad."

A respondent from the procurement department emphasized that;

'Communication among the partners involved in value addition is key when managing inventory in the food industry importantly the agro- inventory as it constitutes a big percent of the inputs during processing of customer dishes.'

4.6 Just in Time Practice on operational performance

The measures for Just in Time were proximity of suppliers, customer responsiveness and delivery on demand and pull strategy. The descriptive statistics of mean and standard deviation of the statements on Just in Time was given below;

Table 4. 7: Descriptive statistics for Just in Time on operational performance

Just in Time statement	Mean	Std. Dev
1. JIT has been able to reduce on stock holding costs due to maintenance of zero stock	2.51	1.59
2. Java house suppliers respond to emergent needs of supplies quickly	2.54	1.59
3 Administrative expenses incurred stock management has been eliminated	2.44	1.56
4. The right quality of goods are ordered and received in time	2.60	1.56
5. Java house has been able to save on costs associated with pilferage of stock	2.44	1.54
6. Production is done on demand hence preventing costs associated with wastage	2.54	1.54
7. Java house produces products in required amounts and just when needed	2.46	1.58
8. Java house has been able to reduce on defects rate	2.41	1.62
9. JIT has led to instant delivery of supplies once an order has been placed	2.56	1.61
10.Java house has been able to reduce on lead times	2.46	1.59

Source: Primary data (2020), N=70

The table 4.7 above indicated that JIT has been able to reduce on stock holding costs due to maintenance of zero stock had a mean of 2.51 and standard deviation of 1.59, Java house suppliers respond to emergent needs of supplies quickly had a mean of 2.54 and standard deviation of 1.59, Administrative expenses incurred stock management has been eliminated had a mean of 2.44 and standard deviation of 1.56, The right quality of goods are ordered and received in time with a mean

of 2.60 and standard deviation of 1.56, Java house has been able to save on costs associated with pilferage of stock with a mean of 2.44 and standard deviation of 1.54. this was followed by Production is done on demand hence preventing costs associated with wastage with a mean of 2.54 and standard deviation of 1.54, Java house produces products in required amounts and just when needed had a mean of 2.46 and standard deviation of 1.58, Java house has been able to reduce on defects rate had a mean of 2.41 and standard deviation of 1.62. JIT has led to instant delivery of supplies once an order has been placed had a mean of 2.56 and standard deviation of 1.61 and finally Java house has been able to reduce on lead times with a mean of 2.46 and standard deviation of 1.59.

This quantitative data was supported by the interviews that were conducted as key point were noted as:

'JIT allows us to only have inventory from suppliers when demand arises as this has greatly improved on the quality of inputs we get from vendors.'

'JIT has allowed Java House to reduce costs by 10% as of 2019 performance reports since costs associated with keeping stock for a long time are eliminated. We prefer to react to the purchases expect where stock is secured from other countries and it would take long to have the stock at our premises there, we hold stock.'

Table 4.8: Correlation between Just in Time and Operational Performance

		Just in time	Operational performance
Just in Time	Pearson Correlation	1	.620**
	Sig. (2-tailed)		.000
	N	70	70
Operational	Pearson Correlation	.620**	1
performance	Sig. (2-tailed)	.000	
	N	70	70

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data (2020).

From the table 4.8 above, Pearson correlation is 0.620** and sig value is 0.000 which is less than P-value of 0.5. JIT has a strong effect on the operational performance of Java House Uganda. The strength of the relationship is high and is positive. From the above findings, closeness to vendors, being responsive to customers' demands and delivery of the inventory on time improves on quality and reduces on the costs of holding stock like expiry.

The correlation results were also in agreement with the views of personnel in the stores department. For instance, one interviewee said that;

'In food sector, JIT inventory management practice is so vital since inventory here can't be stored for a long period of time as procurement only takes place when demand arises to avoid wastage.'

Another worker of stores pointed out that;

'Java House Uganda has to apply timely purchasing approaches for stock maintenance.'
"

However, on the other hand, one interviewee from cookery seemed to hold a view opposing to the above:

'Part of stock used in processing food menus has to been kept between a week to a month as part of stock is from other countries like Kenya hence, we end up keeping stock as its expensive to purchase every time demand comes in in terms of transaction and transportation costs.'

4.7 Multiple Regression analysis

Multiple regression was conducted to establish the percent of variation in operational performance at Java House caused as a result of JIT, FEFO and VMI. This is illustrated as below.

Table 4. 9: Prediction Model for the Study Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.761[a]	.579	.560	.83941

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.771	.220		3.496	.001
	First Expired First Out	.412	.121	.415	3.389	.001
	Just In Time	-.129	.142	-.146	-.909	. 367
	Vendor Managed Inventory	.477	.128	.547	3.732	.000

a. Predictors: (Constant), FEFO, JIT and VMI

b. Dependent Variable: Operational Performance

Source: Primary Data 2021.

$P \leq 0.05$

First the table 4.9 above indicates adjusted R squared as 0.56 approximately 56%. This implies that vendor managed inventory, just in time and first expired first out account for 56.0% variations in operational performance at Java House Uganda. 44% of the variance in operational performance is caused by other factors that were held constant for this study like customer care and owners support.

Vendor managed inventory practice was the strongest predictor of operational performance (Beta =0.547, sig value =0.000). This implies that any determinations made by the management to design a strong communication network, strong store network and proper supplier inventory management would increase the operational performance of Java House in achieving its intended objectives by 0.547 approximately 54.7% in terms of lower costs, enhanced quality and shorter lead times. This was followed by first expired first out which was also a significant predictor of operational performance (Beta =-0.415., sig value =0.001). This means that any efforts like shelf life modelling, batch numbers matched on expiry dates and Information – sharing across supply chains would enhance the operational performance in terms of cost reduction, shorter lead-times and quality improvement by 0.415 approximately 41.5%.

However, just in Time was not a significant predictor of operational performance with (Beta =-0.146, p value =0.367). This means that any efforts made by the management of Java House to improve customer responsiveness and delivery on would reduce operational performance by 0.146 approximately 14.6% since this works like an urgent condition where by JIT comes with extra costs of meeting customer demands.

CHAPTER FIVE

INTRODUCTION

5.0 Introduction

This chapter presents a summary of key findings, discussion of findings of the study in relation to the objectives with a reason of reaching a comprehensive conclusion, The summary of key findings as regards to the effect of VMI on operational performance of Java house Uganda, the effect of JIT on operational performance in java house Uganda, the effect of VMI on operational performance in Java house Uganda and the effect of FEFO on operational performance in Java House Uganda are presented in the first two sections. This is followed by the conclusions and recommendations presented in the last two sections.

5.1 Summary of key findings

The main reason for the study was to examine the effect of inventory management practices on operational performance in Java house Uganda. The study findings that most of the respondents accepted that VMI, JIT and FEFO were major determinants of operational performance, they were represented by descriptive statistics of the means for these predictor variables that were all above the average of 2.5 on the scale of 1 to 5 meaning that the respondents accepted that these items were highly important explaining these variables.

For the sake of addressing the study objectives, the research questions were answered using a multiple regression analysis. MI and FEFO were found to be significant predictors of operational performance which JIT was significant. VMI emerged as the strongest predictor of operational performance with (Beta =0.547, P-value=0.000) followed by FEFO with (Beta =0.415, P-value=0.001) and lastly JIT with (Beta =-0.146, P-value =0.367).

5.2 Discussion of the study findings

5.2.1 Vendor managed inventory and operational performance in Java House Uganda

VMI significantly affects the operational performance in Java House Uganda although it was the least significant predicator of the variation in operational performance. The study further inferred that operational performance depends on the extent to which Java house allows the suppliers to manage the inventory, design a strong communication network and a strong store network. These study findings are supported by previous studies that linked operational performance to VM which is reorganized in a way to deal with management of inventory and requirements satisfaction whereby the supplier is wholly in charge of replenishing of stock in light opportune of the electronic point of sale data to the client company (Vergin,2012),the company also relinquishes control of its re-supply decision and also transfers financial responsibility for the inventory to the supplier (Kemunto,2014).

In supplement, Marques, Thierry and Gourc (2010), note that the quality of client-supplier relationship and trust, nature of the information communication technology framework and force of data sharing has a positive effect on Vendor managed inventory implementation. From the operational performance perspective, Vendor managed inventory, suppliers are responsible for the client company inventory planning (Disney & Towill,2003).

5.2.2 Just in Time and operational performance in Java House Uganda.

Just in time had a high insignificant relationship with operational performance implying that cost reduction, shorter lead times and improved quality did not depend on proximity of suppliers, customer responsiveness and pull strategy. The study findings are reinforced by Carlson(2002),who looks at JIT inventory management practice with the objective of maintaining just sufficient items at the right time in order to make first right quantities of inventories, Just in

time is an inventory management practice that enables companies to produce items in required quantities in the production system (Dalci & Tannis,2006).

The use of this new production system reduces inventory related costs, increases quality, reduces lead times and reduces manufacturing costs by minimizing non-value added activities and their costs, While Inman, Sale, Green and Whitten (2011) state the importance offered by the proper implementation of Just in Time production system like cost reduction, reduction on lead times, company's responsiveness to client needs. Based on the findings supported by literature, the study spots that JIT readiness insignificantly affects operational performance in java house Uganda. Cost reduction, shorter lead times and attainment of quality will highly depend on the proper implementation of JIT in Java house Uganda.

5.2.3 First Expired First Out and operational performance of Java House Uganda

FEFO affects significantly affects operational performance in java house Uganda and has a high positive relationship First out first expired and it was most least significant predictor of the variance in operational performance. The study inferred that operational performance depends on the extent to which Java house Uganda information is shared among all the players in the supply chain, shelf life modelling and batch numbers matched of expiry dates. The study findings and observations are supported by Koutsoumanis, Taoukis &Nychas,2005) who stated that crucial criterion for taking goods out of stock is their remaining shelf life as the method serves to minimize risks in storage and enables a guarantee that will arrive with the expected quality and food losses during transportation will be avoided and according to Hertog et al (2014) said that by implementing such a model based approach, the flow of perishable goods can be optimized by taking into account the expected shelf life of the products.

REFERENCES

Abdel-Maksoud, A., Asada, T., & Nakagawa, M. (2008). Performance measures, managerial practices and manufacturing technologies in Japanese manufacturing firms: State-of-the-art. *International Journal of Business Performance Management*, *10*(1), 1–16. https://doi.org/10.1504/IJBPM.2008.015917

Adeyemi andSalami. (2010). Inventory management: A tool of optimizing resources in a manufacturing industry a case study of Coca-Cola Bottling Company, Ilorin plant. *Journal of Social Sciences*, *23*(2), 135–142.

Amin, M. (2005). *Social Science Research Concepts, Methodology & Analysis Makerere University*.

Ashly Kevin. (2018). *Annual Stock Variance Report*.

Ayo SA, B.-W. J. and D. S. (2012). Determinant of Fast Food Consumption in Kampala Uganda. *African Journal of Food, Agriculture, Nutrition and Development*, *12*(5), 6567–6581.

Brealey, R. A., Myers, S. C., & Marcus, A. J. (2007). *Fundamentals of Corporate Finance*.

Carlson, J. G. (2002). (2002). Just-in-time approach to system wide efficiency and quality borrows from industrial techniques. *Strategies for Healthcare Excellence*, *6*(2), 9–12.

Dalci, I., & Tanis, V. N. (2006). The Effects of Just-In-Time Production Systems from Cost and Management Accounting Perspective. *Journal of Çukurova University Institute of Social Sciences*, *15*(1), 109–124.

Dimitrios, P. (2008). The effect of inventory management on firm performance. *International*

Journal of Productivity and Performance Management, *57*(5), 355–369.

Disney, S. M., & Towill, D. R. (2003). The effect of vendor managed inventory (VMI) dynamics on the Bullwhip Effect in supply chains. *International Journal of Production Economics*, *85*(2), 199–215.

Donald W. Fogarty, John H. Blackstone, T. R. H. (1991). *Production and Inventory Management*. South Wstern Publishing Company.

Fox, M. L. (1996). *Integrating vendor-managed inventory into supply chain decision-making APICS 39th*. 126-128.

Frahm, S. (2008). *Vendor managed inventory (VMI): Three steps in making it work*.

Gitau, N. N. (2016). *The Effect of Inventory Management Practices and Organisational Productivity in Parastatals in Kenya, Unpublished MBA Project, University of Nariobi*.

Halldorsson.A. Kotzab.H, M. H. . & S.-L. . (2007). Complementary theories to supply chain management" Supply Chain Management. *An International Journal*, *12*(4), 284–296.

Hertog, M. L. A. T. M., Uysal, I., Verlinden, B. M., & Nicolaï, B. M. (2014). *Shelf life modelling for warehouse management*.

Java House Uganda. (2019). *Java House Uganda HR's Records*.

Hugo, G. B., Fettermann, D. C., Tortorella, G. L., & Testoni, M. (2016). Inventory management: a small enterprise in the electronics sector case study. *Production*, *6*(2), 66–74.

Inman, R. A., Sale, R. S., Green, K. W., & Whitten, D. (2011). Agile manufacturing: relation to

JIT, operational performance and firm performance. *Journal of Operations Management*, *29*(4), 343–355.

Irungu, B. K., & Wanjau, K. L. (2011). Effectiveness of vendor managed inventory systems in retail supermarkets in Kenya. *International Journal of Business and Public Management*, *1*(1), 85–89.

James, H. (2008). *Inventory Management and Purchasing often overlooked as a profit center, Construction Equipment distribution Magazine*.

Jay, H., & Barry, R. (2006). *Principles of Operations Management* (6th Editio). Pearson Prentice Hall, Eduation Inc.

John, N. E., Etim, J. J., & Ime, T. U. (2015). *Inventory management practices and operational performance of flour milling firms in Lagos, Nigeria*. *1*(4), 392–406.

Kaipia, R., Holmström, J., & Tanskanen, K. (2002). VMI: What are you losing if you let your customer place orders? *Production Planning & Control*, *13*(1), 17–25.

Kamakia, C. W. (2015). *Inventory management and supply chain performance of petroleum marketing firms in Nairobi*. University of Nairobi.

Kanguru, R. (2016). *Inventory management practices of small, medium and micro enterprises in the Cape Metropole, South Africa.* Cape Peninsula University of Technology.

Kanyan, A., Ngana, L., & Ho, B. (2016). Improving the Service Operations of Fast-food Restaurants. *Procedia - Social and Behavioral Sciences*, *224*(August 2015), 190–198. https://doi.org/10.1016/j.sbspro.2016.05.439

Kemunto, R. S. (2014). *upply chain integration practices and organizational performance of multinational firms in Ken*. University of Nairobi.

Koh, L.D., Demirbag, M., Bayraktar, E., Tatoglu, E., &Zaim, S. (2007). The impactof supplychain managementpracticesonperformanceofSMEs. *IndustrialManagement& DataSystem*, *107*(1), 103–124. https://doi.org/doi:10.1108/ 02635570710719089

Kortz. (2003). On the relationship between inventory and financial performance in manufacturing companies. *International Journal of Operations & Production Management*, *29*(8), 789–806.

Koutsoumanis, K., & Nychas, G.-J. Ep. S. T. (2005). Development of a Safety Monitoring Assurance System for chilled food products. *International Journal of Food Microbiology*, *100*(1–3), 253–260.

Krejicie, R.V., and Morgan, D. W. (1970). Determining Sample Size of Research Activities. *Journal of Education and Psychology Measurement*, *30*, 608–615.

Kukutai., T. (2014). Continuity and change in census methodologies worldwide. *Journal of Population Research*, 32: 3–22.

Larrson, S. E. (1995). *Inventory System and Control Handbook*.

Lazaridis, I., and Dimitrios, T. (2005). *The relationship between working capital management and profitability of listed companies in the Athens Stock Exchange*.

Letinkaya, S. & Lee, C. Y. (2000). Stock Replenishment and Shipment Scheduling for Vendor-Management Inventory System. *Management Science*, *46*(2), 26–32.

Marques, G., C. Thierry, J. Lamothe, and D. G. (2010). A Review of Vendor Managed Inventory

(VMI): From Concept to Processes. *Production Planning & Control*, *21*(6), 547–561.

Mbah, S., Obiezekwem, J., & Okuoyibo, A. (2019). *Inventory Management and Operational Performance of Manufacturing Firms in South-East Nigeria*. *12*(7), 76–82. https://doi.org/10.5539/ibr.v12n7p76

Miller, R. (2010). *Inventors Control: Theory and Practice*.

Mulumba, A. (2016). *Inventory management practices and financial performance of manufacturing firms in Kenya: case of Agrochemical Firms*. KCA University.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed).

Ohno, T. (1978). *Toyota Production System*.

Onyango, S. (2016). *Inventory management practices and service delivery of health humanitarian organizations in Kenya*. University of Nairobi.

Priniotakis, G and Argyropoulos, P. (2018). *Inventory management concepts and techniques*.

Rajagopalan, S., Lawrence, F. B., & Krishnadevarajan, P. (2007). Vendor managed inventory best practices in a distribution environment. *Review of the Electronic & Industrial Distribution Industries*, *6*(1), 564–572.

Samarthakani, S., & Kannappa, R. (2018). Influence of Knowledge Management Practices on Organizational Performance in Self Financing Colleges. *Journal of Management Research and Analysis (JMRA)*, *878*(1), 9–13. http://jmraonline.comhttp//jmraonline.com,

Schonsleben, P. (2000). *Integral logistics Management, planning & control of comprehensive*

Business processes, (The St-Lucie Press/AIPCS Series).

Sekaran, U., &Bougie, R. (2010). *Research Methods for Business: A Skill Building Approach* (5th Editio).

Sharma. (2009). *operations Research: Theory and APPLICATIONS* (4th Editio). New Delhi: Macmillan.

The, W. S., Management, D., Walton, M., Gartner, W. B., Naughton, M. J., Gartner, W. B., & Naughton, M. J. (1988). *Review : The Deming Theory of Management Reviewed Work (s)*.

Tyan, J., & Wee, H. M. (2003). Vendor managed inventory: a survey of the Taiwanese grocery industry. *Journal of Purchasing and Supply Management*, *9*(1), 11–18.

Vergin, R. C. (2012). No Title An Evaluation of Inventory Turnover in the Fortune 500 Industrial Companies. *Production and Inventory Management Journal*, *39*(1), 51–56.

Wailer L, Jay H, B. O. (2009). *Management theory: Principle and Practices*. Harcourt Branch Jovanovich.

Waller, M., Johnson, M. E., & Davis, T. (1999). Vendor-managed inventory in the retail supply chain. *Journal of Business Logistics*, *20*(1), 183–203.

Williams, M. K. (2000). Making consignment-and vendor-managed inventory work for you. Hospital. *Material Management Quarterly*, *21*(4), 59–63.

Williamson, O. E. (1981). The Economics of Organization: The Transaction Cost Approach. *American Journal of Sociology*, *87*(3), 548–577. https://doi.org/10.1086/227496

Yao, Y., Evers, P. T., & Dresner, M. E. (2007). Supply chain integration in vendor managed inventory. *Decision Support Systems*, *43*(2), 663–674.

APPENDIX I: QUESTIONNAIRE TO CAFÉ JAVAS RESPONDENTS

Dear Respondent,

I am a student at Kyambogo University. I am carrying out a study entitled "Inventory management practices and Operational performance of fast food restaurants" a case of Java House Uganda. You have been selected in Java House Uganda to participate in this study by furnishing us your experiences. So, feel free and answer diligently as your responses will be used for achieving academic objectives.

Section A: Background Information (Tick as appropriate)

1. Gender of respondents

   Male [ ] Female [ ]

2. Your position in Java House Uganda

Culinary Unit [ ] Procurement [ ] Finance Unit [ ] stores Unit [ ] others specify……

3. Highest Level of education attained

Certificate [ ] Diploma [ ] Bachelor's Degree [ ] Masters [ ] PhD [ ]

4. Time worked in Java House Coffee shop

1-4 Years [ ] 5-9 Years [ ] Above 10Years [ ]

Section B: The influence of Vendor Managed Inventory as a management practice on operational performance. *Here you are requested to indicate the level at which you agree with the statement. The keys have been displayed below where:*

SA- Strongly Agree=5, A-Agree=4, NS- Not Sure=3, D- Disagree=2, SD-Strongly Disagree=1

No	Question	SA	A	NS	D	SD
1	VMI has been able to let suppliers be in of charge of inventory					
2	Use of VMI has enabled an efficient inventory plan					
3	Suppliers manage re-order levels					
4	There is reduction on costs associated with ordering					
5	Java house suppliers determine the maximum and minimum limits of inventory					
6	Java house suppliers are in charge of inventory planning					
7	Java house is able to reduce on their forecast uncertainties					
8	There is reduction on transport costs					
9	VMI has led to shorter lead times					
10	VMI has made administration of the delivery process more efficient					
11	There is never delays in supply of goods due to sharing of inventory information					
12	VMI has reduced on stock out issues in Java house					
13	Suppliers are given instant feedback on quality					
14	VMI has led to improved quality					
15	Inventory handling is done by suppliers hence ensuring quality					

Section C: The influence of Just in Time management practices on operational performance of Java House Coffee shop. *Here you are requested to indicate the level at which you agree with the statement. The keys have been displayed below where:*

SA- Strongly Agree=5, A-Agree=4, NS- Not Sure=3, D- Disagree=2, SD-Strongly Disagree=1

No	Question	SA	A	NS	D	SD
1	JIT has been able to reduce on stock holding costs due to maintenance of zero stock					
2	Java house suppliers respond to emergent needs of supplies quickly					
3	Administrative e expenses incurred stock management has been eliminated					
4	The right quality of goods is ordered and received in time					
5	Java house has been able to save on costs associated with pilferage of stock					
6	Production is done on demand hence preventing costs associated with wastage					
7	Java house produces products in required amounts and just when needed					
8	Java house has been able to reduce on defects rate					
9	JIT has led to instant delivery of supplies once an order has been placed					
10	Java house has been able to reduce on lead times					
11	Production operations have been made more efficient					
12	Java house has been able to improve on quality since food is served fresh					
13	Java house has been able to eliminate issues of serving wrong orders to customers					
14	Java house has been able to be customer responsive as a result of timely feedback from customers					

Section D: The influence of FEFO as a management practice on operational performance.

Here you are requested to indicate the level at which you agree with the statement. The keys have been displayed below where:

SA- Strongly Agree=5, A-Agree=4, NS- Not Sure=3, D- Disagree=2, SD-Strongly Disagree=1

No	Question	SA	A	NS	D	SD
1	FEFO has reduced on costs associated with expiry of goods					
2	Goods shipped by Java house have known expiry dates					
3	FEFO has been able to reduce on storage risks					
4	Java House has been able to get ISO certification and UNBS certification due to use of FEFO					
5	Food losses during transportation are avoided					
6	FEFO has led to constant monitoring of product perishability					
7	Java House only ships goods with a high shelf life potential					
8	Java House has been able to avoid food contamination due to the use of FEFO					
9	Delays in production have been eliminated due to use of FEFO					
10	Java house has been able to achieve actual quality due to use of FEFO					
11	Java has been able to serve fresh products					
12	Final product quality has been improved					

Section C: Operational Performance

Indicate the extent to which you agree or disagree with the following observations on Operational Performance at Java House on a scale of 5-Strongly agree, 4-Agree, 3-Not decided, 2-Disagree, 1-Strongly disagree.

Cost reduction, shorter lead times and quality					
There is improved delivery time of the requirements	1	2	3	4	5
There is avoidance of stock outs					
Costs related to handling inventory are minimized					
Customer lead times are shortened					
Saves clients time					

Thank you for responding

APPENDIX II: INTERVIEW GUIDE

Dear respondent,

My name is Mujasi Brian and I am a student of Master's degree of Science in Procurement and Supply Chain Management at Kyambogo University. I am conducting a study on Inventory Management Practices on Operational Performance as the partial requirement for the Master's degree award. You have been selected as a respondent to provide me with your views on this study based on your experience on the subject matter. Your views will be kept and treated confidentially and at no moment will it be used against you.

An interview guide schedule for the interviews with Java House heads of department for culinary, stores, finance and procurement to obtain information about inventory management practices and operational performance.

1) How is inventory managed in Java House?
2) What types of practices are does Java House use to keep inventory?
3) Do you use vendor managed inventory?
4) How do you implement vendor managed inventory?
5) How does VMI improve the operations?
6) Do you use First expired first out?
7) How do you implement FEFO?
8) How does FEFO improve the operations?
9) Do you use Just in Time?
10) How do you implement JIT?
11) How does JIT improve the operations?
12) Why is implementation of VMI, JIT and FEFO still a challenge in Java House?

END

APPENDIX III: DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	10000	384

Note: "N" is population size and "S" is sample size

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.