LOGISTICS MANAGEMENT PRACTICES AND PERFORMANCE OF MANUFACTURING FIRMS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

This general objective of the study was to examine the effect of logistic management practices on performance of manufacturing firms in Nairobi city County, Kenya. The specific objectives were; inventory management, Demand planning on performance of manufacturing firms. A descriptive research design used in this in study. The target respondents were 109 respondents; comprising senior procurement officer, senior finance officer, senior administration officer, and senior auditor. The sample size for this study was the same as the target population and the study employed census method because the target population was manageable. The study adopted primary data, which was collected using questionnaires. In order to evaluate and understand the obtained data, quantitative data was conducted using SPSS version 28 software. For the study, Pearson correlation was used in order to determine the degree of association between study variables. The study findings was expected to be of great significance to the logistic management practices literature and future scholars. Pilot study results showered reliability of over 0.7 and contented validity of over 0.5.The research instrument can be used to collect final data with minor adjustment. The study concludes and recommends that logistics management practice had a strong relationship with performance of manufacturing firms, hence the need to implement this research results. The study in summary, conclusion and recommendation agrees that logistic management practices had a strong effect on performance of manufacturing firms in Nairobi city County, Kenya.

Key Words: Logistic Management Practices, Performance of Manufacturing Firms, Inventory Management, Demand Planning

Background of the Study

Supply chain management is one of the most essential aspects of conducting business. Many people outside of the direct community do not realize this because an ordinary consumer often experiences only its effects (Dzomonda, 2021). Recall the times when the item that you wanted was not available in your favorite garments or grocery store, recall how many times you got a great 'deal' at the end of the season, recall the sudden increases in gas prices due to shortages, recall the times when your e-commerce site promised availability but later could not send the required product or sent you the wrong product, or recall the times when your customized product was delayed to a great extent. All the above and several other experiences that consumers have on a routine basis are direct consequences of supply chain practices followed by firms. As opposed to business-to-consumer transactions, supply chain practices have immediate impact on business-to-business transactions (Dube, 2017).

A supply chain is the set of entities that are involved in the design of new products and services, procuring raw materials, transforming them into semi-finished and finished products and delivering them to the end customers. Supply chain management is efficient management of the end-to-end process starting from the design of the product or service to the time when it has been sold, consumed, and finally disposed of by the consumer. This complete process includes product design, procurement, planning and forecasting, production, distribution, fulfillment, and after-sales support (Dzomonda, 2021). Supply change management is a highly-detailed system used by small and large organizations alike to get products to consumers, from obtaining raw materials, manufacturing and delivering the final product to the customer. A well-organized supply chain management system involves optimizing operations functionality to be fast and efficient. Today, more than ever before, supply chain management has become an integral part of business and is essential to any company's success and customer satisfaction. Supply chain management has the power to boost customer service, reduce operating costs and improve the financial standing of a company, but how does this work? (Dube, 2017).

Supply chain management (SCM) is increasingly complex and dynamic due to internal and external factors. It involves planning, coordinating, and controlling the flow of goods and services from the point of origin to the point of consumption. Furthermore, SCM is crucial to the success of any business as it helps to optimize processes, reduce costs, improve customer satisfaction, and increase profitability (Dzomonda, 2021). Therefore, the performance of SCM is very important to the success of any business as it improves the effectiveness and efficiency of the supply chain in meeting customer demand while optimizing costs and resources (Tan & Sidhu, 2022). In addition, effective SCM requires careful planning, coordination, and control across all stages of the supply chain, as well as a focus on risk management and resilience through the adoption of best practices and the use of technology. SCM comprises the eight most important processes, which include returns management or reverse logistics. Returns management/reverse logistics and traceability in the supply chain are closely linked, as traceability enables companies to identify the origin of products, track their movement along the supply chain, and monitor their quality and safety). Thus, by implementing a traceability system for returns management, companies can better identify the reasons for returns, determine the best course of action for each returned product, and determine the source of the raw materials used for these returned products (Dube, 2017).

Thus, Supply Chain Traceability (SCT) is a critical aspect of modern SCM as it focuses on tracking and tracing the movement of products, materials, and information throughout the supply chain. Also, involves capturing and recording data at different stages, from sourcing raw materials to the delivery of the final product to the end consumer (Dzomonda, 2021). In addition, the storage of information such as batch numbers, production data, manufacturing processes, and transportation routes. These data are very crucial for organizations to gain visibility into supply chains, ensure product quality and safety, comply with regulations, and

meet consumer demands for transparency and ethical sourcing. Recently, interest in improving SCT has grown due to increasing consumer demands for transparency, regulatory requirements and the need to mitigate risks associated with product recalls, counterfeiting and unethical practices. Similarly, the implementation of a traceability system in SC leads to improved product quality, greater consumer confidence, and a reduced risk of counterfeiting. This leads to faster and more effective recall management, optimized inventory management, and the ability to demonstrate compliance with regulations and sustainability standards (Dube, 2017).

Statement of the Problem

The manufacturing industry is an important sector in Kenya as it makes a substantial contribution to the country's economic development (Godfrey & Oelofse, 2017). Unfortunately, extractive and manufacturing firms have been cited as the leading culprits in environmental degradation since they are at the heart of the supply chain, as large volumes of products originate and flow through them. Thus, the concept of logistic management practices is now gaining importance since it can help to minimize negative impact of the industrial processes while enhancing the competitive advantage of the manufacturing industries (Ikechukwu, Paschal & Jane, 2017). Further, with an increasingly knowledgeable population, manufacturing companies are facing ever increasing demands for environmental accountability and quality products.

Various researches have been done on supply chain management practices; she concluded that manufacturing firms do not implement logistics management practices deeply as large firms; they do not emphasize strategic focus areas such as product development and quality to engage in SCM. The findings of this study were focused on the role of logistics management practices in supply chain management and so depict a high degree of relevance to the study in question. It however falls short of identifying the green SCM practices of manufacturing firms. Godfrey and Oelofse (2017) concluded that technology should be used to improve manufacturing firm performance in SCM. However this study focused on the role of IT only and not SCM practices. Further this study was conducted in a developed economy hence the need to test firms in a developing economy such as Kenya. Logistics management practices as Guta (2016) conducted a study on SCM challenges in the oil industry in Kenya with specific emphasis on National Oil Corporation of Kenya (NOCK). The study by Ikechukwu, Paschal and Jane (2017) however laid emphasis on the challenges alone without any reference to the SCM practices as adopted by the firm, hence the findings of this study did not address the manufacturing firms in supply chain management practices. Paik (2018) conducted a study of the role of manufacturing firm's size in supply management and concluded that manufacturing firms sampled had procurement departments while manufacturing firms still lag behind in this aspect. This study was conducted by Guta (2016) in a developed world and also concentrated on purchasing only as opposed to the broader SCM practices hence was found to be unsuitable for establishing the SCM practices as envisaged by this particular study. To fill the highlighted gaps, the current study sought to examine the effect of green supply chain management practices on the supply chain performance of manufacturing firms in Nairobi city county, Kenya.

General Objective

The general objective was to examine the relationship between logistic management practices and performance of manufacturing firms in Nairobi City County, Kenya.

Specific Objectives

  i. To assess the effect of inventory management on performance of manufacturing firms in Nairobi City County, Kenya.
  ii. To examine the effect of demand planning management on performance of manufacturing firms in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Review

Resource-based View Theory

Resource-based view theory was developed by Wenefeldt in 1984. The theory was developed for analyzing firm behavior and competitive strategy. Resources are the source of a firm's capabilities which are the main source of its competitive advantage (Schmidt & Keil, 2013). Reverse logistics can be seen as a capability that allows manufacturers to use existing resources in alternative yet cost-effectively and ecologically friendly way by extending the product's normal life beyond its traditional usage (Lai, Wu, and Wong, 2013). Proponents of the RBV have been criticized for poorly defining the core constructs of the theory (Foss & Knudsen, 2003). Ramirez (2012) used the RBV theory to examine whether reverse logistics improves firm performance conditioned by the creation of knowledge. He found out that companies that develop their capacity to generate new knowledge are able to reduce the uncertainty of reverse logistics processes, which in turn increases firm performance. RBV theory is relevant in that a business organization must be able to obtain, allocate and utilize resources to be able to achieve their objectives. Reverse logistics capabilities can be considered as unique resources to an organization that will enable them put in place and implement new business strategies to gain a competitive edge over other players in the same market.
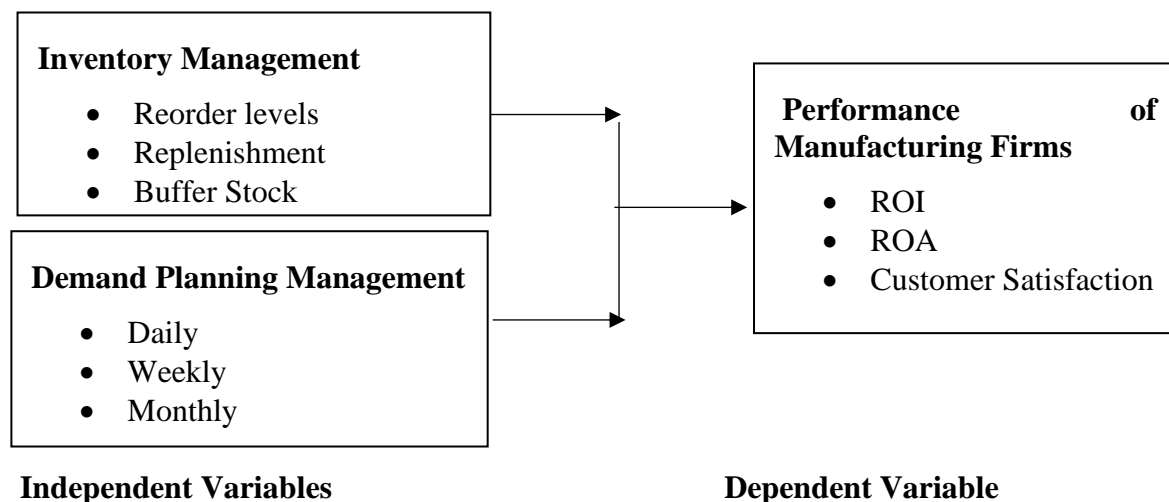
Classical Conditioning Theory

Classical conditioning theory was developed by Pavlov 1897. The theory states that states that consumers only value a product based on the kind of packaging that is done on the product. Packages that are well designed to properly protect the product usually attract more consumers. The nature of packaging determines the kind of consumers that will be attracted to that particular product. Environmentally conscious consumers will forever prefer green packaging on product with no tendency of causing environmental hazards. Products that are placed in common packages are usually attracted by low income consumers who could either not afford green packaging products or are completely ignorant of the benefits of green packaging products. Usually, normal products packages are made from very common materials with no environment protection features and as a result, these products are very affordable. The raw materials used in making local packages are of no green nature and this qualifies the production method of such products to be very simple and affordable.

Odhiambo (2008) reaffirms that it is therefore necessary for consumers not to judge the quality of green products based on the nature of the packaging on them because judgement of purchasing based on the appearance of green packaging is always deceiving and sometimes disappointing. So, consumers should do a thorough background check on all green products irrespective of their different packaging design and style. It is important for consumers to seek further clarification on all packaging of green products from manufacturers, suppliers and other consumers who have used these products for clarity in order to avoid being deceived and frustrated from making wrong green product packaging choices (Luce & Hill, 2001). The theory supports the variable on green packaging which may attract more customers and the market share resulting to firm performance.

Conceptual Framework

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate this. When clearly articulated, a conceptual framework has potential usefulness as a tool to assist a researcher to make meaning of subsequent findings (Tromp & Kombo, 2006). In this study, the independent

variables will be reverse logistics, waste management, green sourcing and management support. The dependent variable is logistics management practices performance of manufacturing firm is as shown in Figure 2.1.

Inventory Management

- Reorder levels
- Replenishment
- Buffer Stock

Demand Planning Management

- Daily
- Weekly
- Monthly

Performance   of Manufacturing Firms

- ROI
- ROA
- Customer Satisfaction

  Independent Variables   **Dependent Variable**

Figure 2.1: Conceptual Framework

Inventory Management

Inventory control is the process of tracking stock levels while monitoring customer demand. This allows businesses to ensure they have the products people want at the time in the correct quantities (Mekasha, 2020). The quantities part is the most important because it helps businesses avoid over or understocking a certain product. Knowing the quantities of products also helped prevent theft and damage. Having the right stock at the right time means businesses adequately manage their supply chains and customer service operations. All this improves efficiency and profitability. Before getting into the details of warehouse management, it may help to understand a few common terms. For example, the terms inventory management and warehouse management are often used interchangeably, but there are key differences: Inventory management. Inventory Management is centered on efficiently and effectively ordering, storing, moving, and picking the materials needed to make products or fulfill orders (Ketema, 2017).

Inventory control, also called stock control, is the process of ensuring the right amount of supply is available in an organization (Mekasha, 2020). With the appropriate internal and production controls, the practice ensures the company can meet customer demand and delivers financial elasticity. Successful inventory control requires data from purchases, reorders, shipping, warehousing, storage, receiving, customer satisfaction, loss prevention and turnover. Inventory control enables the maximum amount of profit from the least amount of investment in stock without affecting customer satisfaction. Done right, it allows companies to assess their current state concerning assets, account balances and financial reports. Inventory control can help avoid problems, such as out-of-stock (stockout) events. For example, Walmart estimated it missed out on $3 billion worth of sales in 2014 because its inadequate inventory control procedures led to stock outs (Ketema, 2017).

An integral part of inventory control is supply chain management (SCM), which manages the flow of raw materials, goods and services to the point where the company or customers consume the goods. Warehouse management also squarely falls into the arena of stock control (Mekasha, 2020). This process includes integrating product coding, reorder points and reports, all product details, inventory lists and counts and methods for selling or storing. Warehouse management then synchronizes sales and purchases to the stock on hand. Inventory management is a higher-level term that encompasses the complete process of procuring, storing, and making a profit from your merchandise or services. While inventory control and

inventory management may seem interchangeable, they are not. Inventory control regulates what is already in the warehouse. Inventory management is broader and regulates everything from what is in the warehouse to how a business gets the product there and the item's final destination. Inventory control practices and policies should apply to more than just finished and raw goods. The following graphic shows all the things a business might manage using these practices (Ketema, 2017).

Inventory is one of the biggest costs of capital of any product-based business. If you look at the balance sheet of this type of company, you're likely to find that inventory makes up a large portion of current assets and uses up a lot of working capital. Inventory control helps avoid the many costs related with buying too much inventory and the strains of going without the needed inventory (Mekasha, 2020). While some companies using just-in-time ordering may carry extremely small inventories, nearly any business requires some form of inventory, which is best managed through inventory control systems. If a company can lower inventory, it may find new funds available for expansion or profits. If a company needs to carry more inventory and tight inventory control processes bring inventory levels up, the business could find higher sales, and again higher profits. Using inventory control to optimize your warehouse, stock room, supply room, or storefront is a sure way to cut costs and better manage any kind of product (Ketema, 2017).

Implementing proper inventory control procedures can help ensure a business is running at optimal financial levels and that products meet customers' needs and expectations. According to the 2015 "Global State of Multichannel Customer Service Report", 62% of customers have stopped doing business with a brand whose customer service was poor. Of those customer service complaints, frustration over out-of-stock or backordered items is high on the list. In fact, research about convenience stores shows that out-of-stocks could cause a store to lose one in every 100 customers completely (Mekasha, 2020). Additionally, 55% of shoppers in any store would not purchase an alternate item when their regular product is out-of-stock. Other areas where businesses incur expenses or lose sales that inventory control practices and methods could address include: Spoilage; Dead stock; Excess storage costs; Cost-efficiency; Decreased sales; losing loyal customers; Excess stock; Losing track of inventory and; Losing goods in the warehouse According to professor and author David Pyke, "Owners of small and emerging businesses would be stunned to see how much help they can get and money they can save by wisely managing their inventory. Many small businesses are not rolling in cash, and much of their funding is tied up in their inventory. Good practices balance customer demand and management of inventory in the smartest possible ways (Khan. & Qianli, 2017).

Demand Planning Management

Demand planning is the process of forecasting the demand for a product or service so it can be produced and delivered more efficiently and to the satisfaction of customers. Demand planning is considered an essential step in supply chain planning (Mekasha, 2020). Supply chain execution and supply chain planning are the two major components of supply chain management. The planning side of SCM typically starts with demand planning, which involves creating a demand plan based on a statistical forecast that considers factors that can influence demand -- such as inventory and marketing -- and specifies where to distribute products to meet the anticipated demand. The demand plan feeds into the next steps in the supply chain planning process: material requirements planning (MRP) and production planning. Demand planning works by forecasting customer demand and aligning it with supply chain management processes to ensure the right products are available at the right time (Maleka et al., 2017).

The demand planning process starts by analyzing historical data, market conditions and variability to create an accurate forecast of future demand. This information can help

companies anticipate inventory needs and manage new products and product lines, in turn improving profitability and customer satisfaction (Mekasha, 2020). Demand planning often uses tools such as regression analysis and automated systems to refine forecasts and adapt strategies to handle potential disruptions. This can also help organizations reduce unnecessary costs and adapt to evolving trends and market conditions. Importance of demand planning. Keeping up with product demand is critical, as failing to do so can result in lost revenue for the product or, even worse, lost customers. One of the main goals of demand planning is to have just the right amount of inventory to meet customer demand without incurring shortages or wasting money on making and storing surplus inventory (Maleka et al., 2017).

Demand planning can also help minimize the bullwhip effect, a phenomenon in which small fluctuations in retail demand amplify demand from earlier actors in the supply chain, such as suppliers and manufacturers (Mekasha, 2020). More accurate demand forecasts and better communication among supply chain participants can help to minimize the bullwhip effect. Elements of demand planning. Demand planning is a complex process that typically includes the following elements: Data collection from internal and external sources on the factors known to predict or influence demand. Statistical analysis of sales, inventory and other data. Data modeling to predict future demand. Collaboration with suppliers, manufacturers, salespeople and other stakeholders to gather information on events that could affect demand, such as promotions and production delays (Maleka et al., 2017).

Demand forecast. A prediction of demand based on the data model and analysis, followed by a demand plan. Demand plan. An outline of the amount, type and location of inventory needed to satisfy the forecasted demand (Mekasha, 2020). Beyond these basic functions, some demand planning strategies incorporate the following processes, at least in part: Product lifecycle management. PLM analyzes factors that contribute to the demand for different products. Replenishment planning. This process ensures that inventory is in the right locations and in quantities to meet the demand.

Key steps in demand planning. Demand planning starts with preparing a statistical forecast of how much inventory is needed. To do this, a planning team is usually assembled from the sales and marketing departments and from operational departments, including finance, production and procurement. There might be a dedicated demand planning analyst who provides expertise in data management and statistics, as well as someone who can act as a liaison to the IT organization to address technical aspects of the software, such as forecasting algorithms, data reporting and integration (Maleka et al., 2017).

The team starts by reviewing the available information, such as the sales forecast, historical sales data, market research and surveys (Mekasha, 2020). Often, this involves collecting point-of-sale (POS) terminal data and analyzing it with the analytics tools in demand planning software, which might be a standalone system or part of an SCM or enterprise resource planning software suite. Some companies store POS data along with other demand signals, such as retail and wholesale inventory levels and data from loyalty programs, in a type of data warehouse called a demand signal repository. Inventory data can help put sales data in proper perspective by, for example, identifying sales lost due to inventory stockouts, which point to a higher demand than indicated by sales alone. Using analytics to find such relationships between sales and inventory can ultimately improve forecast accuracy (Maleka et al., 2017).

The demand planning team then agrees on a forecasting model it believes will be the most effective at predicting demand (Maziriri, 2020). The team can add new data as it comes in, such as actual sales of a product or competing products, and revise the model and resulting

forecasts if necessary. Demand planning is often conducted in the early stages of sales and operations planning (S&OP), a process for aligning supply with demand by coordinating sales planning and forecasting with production planning in a unified approach. Product lifecycle management influences demand planning by serving as a source of detailed product information. Conversely, demand planning plays a role in PLM. For example, companies can use demand planning to predict the demand for a proposed product by comparing it to similar products and seeing how certain features might affect demand (Maleka et al., 2017).

Performance of Manufacturing Firms

Logistics management practices is expected to improve performance of institutions thereby enhancing their services. In the case of government at regional and national levels, performance in form of service delivery is argued can accrue from studies that have been done on e-procurement. Maziriri (2020) conducted a study on logistics management practices by European firms. The study concluded that there exist country differences in e-procurement adoption, and that firms from countries with a low uncertainty avoidance such as Germany and the UK are the early adopters of logistics management practices, while countries that are less reluctant to change such as Spain and France have lower adoption rates. Another study was also carried out on the implementation of regulation-based e-procurement in the Eastern Cape provincial administration, South Africa (Maleka et al., 2017).

Also, Maziriri (2020) tried to develop a model of the Critical Success Factors (CSFs) likely to impact the success of e-procurement initiatives in the Australian Public Sector. The study identified end-user training, system integration, system security, performance management, top management support, change management and supplier practices as the CSFs that impacted on the success of logistics management practices initiatives in the Australian Public Sector. Also, Ominde et al. (2021) sought to investigate how customer service level on logistics management strategy, procurement cost, inventory optimization on e-procurement strategy and buyer/supplier collaboration affected procurement performance in state Corporations in Kenya. The study found that customer service level on logistics management practices, procurement cost, inventory optimization on logistics management practices and buyer/supplier collaborations positively related to the procurement performance of manufacturing firms in Nairobi City County, Kenya. Further, Maziriri (2020) sought to establish the influence of e-procurement adoption on partnership, information sharing and supply chain integration practices in tea firms in Kenya. The study found that e-procurement adoption positively influenced partnership, information sharing, and supply chain integration practices of the selected Kenyan Tea (Maleka et al., 2017).

Firms. The current study is different in that it seeks to evaluate the effect of logistics management practices on the performance of the Kenyan Public Sector. Another study mutai and Ismael (2016) focused on the influence of strategic sourcing on organizational performance of state corporations in Kenya, using a case study of Kenya Power. The study revealed that supplier relationship management, early supplier involvement and contract management followed by supplier development had a great influence in the performance of Kenya power. Maziriri (2020) studied the effect of logistics management practices on performance in the UK companies. He evaluated the impact of logistics management practices on organizational performance among manufacturing firms in Nairobi city, Kenya. He discovered that logistic management practices has a significant positive effect in that it did not facilitate supplier discovery, sourcing and supplier management, requisitioning, procurement, order receiving and contract management. This empirical review indicates that logistics management has a positive effect on performance of manufacturing firms (Maleka et al., 2017).

Empirical Review

Inventory Management

Ways to Control Inventory; at its core, taking stock is just the process of determining what you have and where you store it so that you can evaluate it. Not all warehouse control procedures are ideal for every business or for the varying stages of an organization's growth and development. Some methods are too complicated, especially for smaller companies (Mekasha, 2020). You should be able to use your system to track inventory levels, create orders and send out stock. Some basic systems for tracking inventory include: Manual: Whether via a ledger or a stock book, manually logging inventory with a pen and paper is the simplest way to track what comes in and goes out (Okwatch, 2017). Small businesses with few items can get away with using this type of system. This system can be challenging because it is an actual record that you cannot mine and use for planning purposes. Stock Cards: A slightly more complex method uses stock cards, also called bin cards. A stock card is a table that records the running unit price, sale price and inventory count of each product. Use individual cards for each product in large warehouses or stock rooms. The system also tracks purchases, sales, returns and other reasons to withdraw stock, such as promotional withdrawals. You can include additional notes on the stock card, such as any problems associated with that item. For a stock card system to be effective, consistent updates are critical. You must also record unusual stock pulls; otherwise, you run the risk of inaccurate data (Mishra et al., 2019).

Simple Spreadsheets: Many companies, especially small businesses, use spreadsheets to track inventory. Whether they use Microsoft Excel or something similar, spreadsheets are a way to start automating and electronically capturing product data (Okwatch, 2017). With consistent updating and basic coding, you can ensure that you have available current stock levels and statistics. Businesses quickly customize these systems to meet their needs. Since everyone who builds a spreadsheet does so slightly differently, users will need intimate knowledge of how the sheet works. This method is also thought of as manual because the only way to automatically update the spreadsheet system is by adding high-level macros or coding that connects them with other systems. Basic Inventory Software: Simple inventory software is usually low cost and targeted to small and medium-sized businesses. This simple automation is often cloud-based and ties into your point of sale software, so it can generate real-time, automatic stock updates. You can also incorporate analytics and reporting and run cost comparisons, create reorders, identify best and worst-selling products and drill down to order details or customer patterns. Some simple inventory management software systems can scale to more complex functionality as your business grows (Mishra et al., 2019).

Some businesses prefer to stick to the simple systems of keeping track of inventory. Other companies plan for growth and scaling (Okwatch, 2017). You could also track inventory with: Advanced Software: Designed for tracking inventory, most of these targeted software solutions can integrate with existing software, are scalable and provide analytics and templates. Advanced software is now in reach for many small and midsize businesses because it is no longer cost prohibitive. Inventory control and monitoring systems are accounting approaches to track the number of goods on hand. Big companies often monitor inventory across stores, warehouses and even websites. The two main systems are periodic and perpetual tracking systems. The Periodic Inventory System. Most small businesses still use periodic inventory management because it does not require sophisticated software or inventory scanning. A periodic inventory system relies upon occasional or regular physical counts of the inventory. You decide accounting periods based on the business needs, but you don't track inventory daily or continuously. Instead, you record all purchases to a purchase account. Once you conduct the physical inventory, you shift the balance in the purchase account into the inventory account. Finally, you adjust the inventory account to match the cost of the ending stock. You can

calculate the cost of ending inventory using either FIFO (first in, first out) or LIFO (last in, first out) (Mishra et al., 2019).

The challenges of the periodic system are especially apparent when performing a physical inventory count (Okwatch, 2017). Most normal business activities must be suspended during this time because it requires significant manual labor. Many companies hire additional staff and try to perform this outside of regular business hours, such as during a night shift. This type of system incurs more fraud because there is nothing tracking inventory between physical counts, reducing accountability between inventories, and because it is more challenging to determine where any inventory discrepancies occurred. The perpetual system may be more expensive to implement than the periodic system due to equipment and software needs. However, the system continuously and immediately updates inventory numbers. This system calculates inventory based on sales and purchases via the point of sale and asset management software. This way, you have accurate stock on-hand accounting at all times. Perpetual tracking is the best way to avoid stockouts when your customers deplete inventory on a particular product. With a perpetual system, you can achieve minimal employee contact with the goods (Munanu, 2017).

The challenges of this type of system occur when you use it without also performing physical inventories (Okwatch, 2017). In other words, the recorded inventory may not accurately reflect what in-stock is physically as time goes by, never mind accounting for drop shipments or inventory on order. You must account for breakage, stolen goods and loss to ensure the system is accurate. Further, errors and improperly scanned items affect the inventory records. You can handle this mathematically by applying corrections that mostly account for these things. Experts agree, though, that even though physical inventories are not common, you should implement some manual stock taking process to complement a perpetual system. You can integrate these types of systems with supply-chain automation to make quicker decisions informed by data (Mungai, 2019).

Demand Planning Management

Demand planning best practices; there are several important best practices to employ with demand planning, including the following: Use data concerning past demand patterns to make more accurate forecasts (Okwatch, 2017). Implement automation to reduce human error, a top security issue, and speed up demand planning processes and decision-making. Incorporate seasonality and market conditions in forecasts to anticipate demand spikes or slow periods. Prioritize customer satisfaction by aligning inventory with customer needs, avoiding overstock and stockouts. Monitor key metrics, such as inventory turnover, forecast accuracy and stock keeping unit (SKU) performance. Use optimization techniques to adjust product portfolio and product lines based on demand. Plan for disruptions by building flexible processes that can respond to unexpected changes in demand. Align with the supply chain management process to ensure coordinated supply and demand activities (Obwocha & Osoro, 2023).

Demand planning vs. demand forecasting; Demand planning has much in common with demand forecasting, though most experts consider demand planning to go beyond statistical forecasting to include planning the scope of the inventory (Okwatch, 2017). Both terms are sometimes used as synonyms for demand management, but they are usually regarded as distinct components of it. Demand management also includes demand shaping, the process of trying to affect demand through price changes, product substitution, promotions and other methods. Making matters more complicated, it could be argued that demand planning is a bit of a misnomer, as most of the critical planning occurs in later processes, such as S&OP, MRP and production planning. Future of demand planning; The increasing availability of more real-time

data -- some of it transmitted by internet of things sensors -- and of advanced analytics employing machine learning and other artificial intelligence techniques are helping to improve forecast accuracy. Meanwhile, cloud-based collaboration tools and mobile devices are enhancing the ability of demand planners to share information and react more quickly to changes in supply and demand (Obwocha & Osoro, 2023).

More broadly, digital transformation the drive toward more fully digitized business processes is gradually connecting more supply chain participants, from the consumer to the manufacturer to the raw materials supplier, and providing finer-tuned control over the movement of goods (Okwatch, 2017). These broader trends lend new support to a longstanding effort to build what some vendors and industry analysts call the demand-driven supply chain, in which supply is more responsive to actual consumer demand and not primarily the product of an educated guess. Digital demand management is one of these trends, making use of advanced digital tools and technologies to manage demand forecasting, inventory optimization and supply chain coordination. By integrating machine learning and artificial intelligence, digital demand management can analyze large amounts of historical data to provide accurate forecasts, even for highly variable product portfolios and SKUs. This digital approach automates much of the demand planning process, making it faster, more accurate and less prone to error and supply chain disruptions (Obwocha & Osoro, 2023).

 Inventory Control Techniques; Ways to control stock by when or how you order goods or materials include: FIFO and LIFO: These are methods of placing value on the products. LIFO assumes that the goods last added to the inventory are the first goods to be sold, while FIFO assumes that the goods first added to the inventory will be the first sold (Okwatch, 2017). Min-Max Inventory Control: This theory sets minimum and maximum levels of stock to maintain specific items in your inventory. So, when you get to the minimum level of stock, order only enough to reach the maximum level set. Critics of this approach say that you may end up with either too many or too few products. JIT Inventory: The just-in-time (JIT) inventory management strategy lines up the raw material order from suppliers with the production schedule. You decrease waste in the form of inventory cost because the goods are onsite only as needed. JIT can be a step in Lean manufacturing by slightly requiring JIT to incorporate what the customer wants in each product manufactured. The risk with this method is running out of stock due to inefficient suppliers, but supplier relationship management can somewhat mitigate this risk (Obwocha & Osoro, 2023).

Two- or Three-Bin System: A two- or three-bin system involves two containers of the same stock item (Okwatch, 2017). When one container becomes empty, you use the second container (the backup), which then identifies the reorder point (ROP). The ROP is when inventory gets down to a level that initiates stock replacement activities. The problem with a method this basic is evident in situations where there are big or fast orders. You may never be exactly sure how much product is in stock at a given time, so you may not be able to predict whether you can fulfill a large order or quick, successive orders. Fixed Order Quantity: In a fixed order quantity rule, you may only order a specific amount of an item at one time. With this rule in place, reorder mistakes, storage space issues and unnecessary expenses are kept to a minimum. You may link fixed order quantities to automatic ROPs (Obwocha & Osoro, 2023).

Fixed Period Ordering: In a fixed period ordering rule, you link the replenishment of specific items to a particular interval (Okwatch, 2017). In this case, the order quantity is always different to compensate for customer demand. Vendor-Managed Inventory (VMI): In this method, it's often the sales representative that manages the stock on specific products, noticing and ordering what needs replenishment. For example, a beverage company representative who performs

deliveries reviews the stock and space available for their products in the store and replenishes it themselves. Set Par Levels: When inventory drops below the par levels, your software should signal you to order more. Par levels vary by product, relative sales rates and the time to restock and require research and sound decision-making (Obwocha & Osoro, 2023).

Par levels change over time and must be reset at regular intervals. On the positive side, having minimum levels makes your business more efficient and flexible (Okwatch, 2017). When new products hit the market, you can purchase them because your funds are not completely tied up in existing inventory. Further, storage costs are lower, and if your business moves fast, having only the minimum levels of stock may be more suitable. Some challenges you may face include possibly running out of stock, when ordering the minimum could be more expensive and the variability of how well your suppliers can deliver products quickly and efficiently. You should also have a safety stock alongside your minimum inventory. Safety stock is the stock you keep in excess in case there are delays in delivery. You use this stock only in case of emergency (Obwocha & Osoro, 2023).

RESEARCH METHODOLOGY

The descriptive research design was employed where data was collected one point in time. Creswell (2014) notes that a descriptive survey seeks to obtain information that describes existing phenomena by asking questions relating to individual perceptions and attitudes.

The population of this study was constitute all manufacturing firms in Nairobi city county, Kenya. The target population was 109 respondents from manufacturing firms in Nairobi city county, Kenya. The researcher did census survey. The population under study has homogeneous characteristics. Homogeneity has been described as the complete set of individuals, organizations or items with the same common observable characteristics (Mugenda & Mugenda, 2008). The study targeted the firm's senior procurement officer, senior finance officer, senior audit and senior administration officer who were the unit of observation.

According to Rossi, Wright and Anderson (2013), a sample is a carefully selected subgroup that represents the whole population in terms of characteristics. The methodology used to sample from a larger population depends on the type of analysis being performed. A sample size was part of a population chosen for a survey of experiment. The study used purposive random sampling technique. Where the respondents had the same characteristics, skills, knowledge and experience. Given the size of the target population the study was adopted a census approach. In census, every item of the universe is selected for observation (Golata, 2016). Data was collected from the109 respondents from procurement and finance office department in each of the sub-county within the county.

Both open and closed ended questionnaire were used. Structured questionnaires are easy to administer, analyze and are economical in terms of time and money. A five-point Likert scale was used to measure all variables (Creswell, 2014). The lowest rating of 1 signifies a low opinion by respondent while a high rating of 5 signifies a high rating by the respondents.

Data obtained from the field was coded, cleaned, and entered into the computer for analysis using the SPSS version 28. The data was summarized in order to see emerging trends and issues around specific themes, which are dependent on the variables and objectives. Presentation of data will be done in form of quantitative and qualitative reports which will be presented in forms of tables and essay. For the quantitative reports, the tables consisted of mean and standard deviation values that was used to make interpretation of the analysis. Percentage, mean and standard deviation was used to show the frequency of responses (Creswell, 2014). Tables was used to display the rate of responses and to facilitate comparison. Qualitative reports was presented in form of essay which was discussed as per the study objectives aligned

with the theories and empirical study. Descriptive statistical included frequency, percentages, mean and standard deviation. Inferential statistical analysis used multiple regression and correlation analysis. The significant of each independent variable was tested at a confidence level of 95%.

RESEARCH FINDINGS AND DISCUSSION

Out of 98 questionnaires that were circulated to the respondents, 79 of the respondents dully filled and retuned questionnaires; yielding a response of 80.6%. This was considered to be a very reliable response rate for the generalization of study findings is in line with Sharma (2018), states that a response rate of 70% and above is believed to be a reliable response rate.

Descriptive Statistics

In this section, the study presents findings on Likert scale questions on the role of inventory management practices and performance of preference groups in Manufacturing firms County, Kenya. The study specifically presents the effect of inventory management and demand planning management on performance of preference groups in Manufacturing firms County, Kenya. Respondents were asked to use a 5-point Likert scale where 5 (SA) = Strongly Agree, 4(A) = Agree, 3(UD) = undecided, 2 (D) = Disagree, and 1(SD) = Strongly Disagree. Results obtained were interpreted using means and standard deviations where a mean value of 1-1.4 was interpreted as strongly disagree, 1.5-2.4 disagree, 2.5-3.4 neutral, 3.5-4.4 agree and 4.5-5 strongly agree.

INVENTORY MANAGEMENT

Respondents were requested to give their responses in regard to Inventory management in a five point Likert sale where SA=Strongly Agree, A=Agree, N= Neutral, D=Disagree, and SD= Strongly Disagree. Results obtained were presented in Table 1 below:

Respondents were requested to give their opinion on the variable Inventory management. From table 4.7, the respondents unanimously agreement that Inventory management ensured performance of and periodic review in Manufacturing firms in Nairobi city County, Kenya viable (M=3.741, SD=1.0601); Through reorder levels basis assessment the in Nairobi city County, Kenya has been able to make rational decisions on priority and non-priority projects (M=3.833, SD=.9202); replenishment assessment has contribution to the quality and innovation of the planning team (M=3.903, SD=.9007); buffer stock monitoring, frequent and accurate of Inventory management and it is important to put in place and maintain manufacturing firms in Nairobi county, Kenya (M=4.060, SD=. 7950); The management of Manufacturing firms in Nairobi city County, Kenya implements performance of to prevent fraud in supplier evaluation (M=3.841, SD=1.3020); and Inventory management enhances performance of at Manufacturing firms in Nairobi city County, Kenya(M=3.565, SD=.8016). These outcomes concur with the discoveries of Nyile *et al.* (2022) who observed that clear description of Inventory management, can enhance effective performance of Manufacturing firms in Nairobi city County.

Table 1: Inventory Management

Statement	Mean	Std. Dev.
Manufacturing in Nairobi city County, Kenya ensures online Implementation of inventory management in the county	3.3741	1.0601
Reorder on performance of Manuf. in Nairobi city County	3.833	.9202
Inventory management has contribution to performance of firms County	3.903	.9007
buffer stock of inventory management Towards better performances of agro	4.060	.7950
Replenishment of Man. in Nairobi city County, Enhance good performance	3.841	1.3020
Inventory management enhances performance of Manufacturing firms in Nairobi city County	3.565	.8016

DEMAND PLANNING MANAGEMENT

Respondents were asked to give their responses in regard to Demand planning management on performance of Manufacturing firms in Nairobi city County, Kenya i.e. 5 point likert sale where SA=Strongly Agree, A=Agree, N= Neutral, D=Disagree, and SD= Strongly Disagree. Their responses are presented in table 2 below:

From table 2, respondents, respondents agreed that Innovative Activities ensure performance of Manufacturing firms in Nairobi city County, Kenya (M=4.039, SD=.7306); daily activities on performance of   Manufacturing firms in Nairobi city County, Kenya (M=4.004, SD=.8306); My in Nairobi city County, Kenya ensures Value for money on performance of Manufacturing firms in Nairobi city County, Kenya (M=4.207, SD=.8506); weekly action towards the embrace it towards better performance of Manufacturing firms in Nairobi city County, Kenya t (M=4.010, SD=.8072); monthly reaction process contributes to performance of Manufacturing firms in Nairobi city County, Kenya (M=3.926, SD=.8305); and to enhance dispute resolution results, our in Nairobi city County, Kenya has reacted a conducive supplier dispute resolution towards performance of Manufacturing firms in Nairobi city County, Kenya(M=4.108, .8054). These results are in agreement with the result of Nyile et al. (2022) who observed that the characteristic of Demand planning management are the best value reaction to sort out non-performance of, after Demand planning management, for resolving return on investment. The problem areas giving rise to disputes are mainly related to firms County's matters.

Table 2: Demand Planning Management

Statement	Mean	Std. Dev.
My in Nairobi city County, Kenya embrace daily transaction on performance of Manufacturing firms in Nairobi city County, Kenya.	4.037	.7304
My in Nairobi city County, Kenya embrace weekly action on performance of Manufacturing firms in Nairobi city County, Kenya.	4.034	.8306
My in Nairobi city County, Kenya embrace shipping action on performance of Manufacturing firms in Nairobi city County, Kenya	4.610	.7872
In cases of value for money demand planning of Manufacturing firms in Nairobi city County, Kenya	3.926	.8305
Alternative value for money process on performance of Manufacturing firms in Nairobi city County, Kenya	4.108	.8054
To enhance demand planning management on performance of Manufacturing firms in Nairobi city County, Kenya	4.084	.8107

PERFORMANCE OF MANUFACTURING FIRMS

Respondents gave their level of agreement on various statements relating with performance of manufacturing firms in Nairobi city County, Kenya. The results were as presented in Table 3 below:

From the findings, respondents were in agreement that performance of Manufacturing firms in Nairobi city County, Kenya is being affect by logistics management practices, they gave 63.2%; when asked about Value for money and its effect on procurement performance of Manufacturing firms in Nairobi city County, Kenya they gave 70.7 %; When the respondents were asked to show their level of agreement on how return on investments affects performance of Manufacturing firms in Nairobi city County, Kenya they gave 9%; When also the respondents were asked to show their level of agreement on return on assets of the in Nairobi city County, Kenya government on performance of Manufacturing firms in Nairobi city County, Kenya they gave 69.7%; Alternative dispute resolution process contributes to Warehouse managements on performance of Manufacturing firms in Nairobi city County, Kenya they gave 42.5% and through contract management, operational performance measured by quality, flexibility, Warehouse managements on procurement performance of Manufacturing firms in Nairobi city County, Kenya they gave 74.2%. The discoveries is in line with the discoveries of Mutai and Osoro (2021) they observed that some of the factors that contribute to inefficiency in public procurement as corruption, delayed payments, poor planning, statutory amendments, insufficient use supplier evaluation low public participation, and improper payment procedures negatively affects performance of Manufacturing firms in Nairobi city County, Kenya..

Table 3: Performance of manufacturing firms

Statements	Yes (%)	No (%)
Customer Satisfaction an affects performance of Manufacturing firms in Nairobi city County, Kenya	52	48
Return on investment can affects performance of Manufacturing firms in Nairobi city County, Kenya	70.6	26.4
Return on assets can affect performance of Manufacturing firms in Nairobi city County, Kenya	51	49
Return on investment an affects performance of Manufacturing firms in Nairobi city County, Kenya	69.7	31.3
Customer satisfaction can affects performance of Manufacturing firms in Nairobi city County, Kenya	42.2	57.8
on performance of Man. firms in Nairobi city County , Kenya	74.1	25.9

Pearson Correlation Analysis

The study further conducted inferential statistics entailing both Pearson and regression analysis with a view to determine both the nature and respective strengths of associations between the conceptualized predictors such as Inventory management, and Demand planning management and performance of Manufacturing firms in Nairobi city County, Kenya.

Table 4: Correlation Coefficients

		Performance Of	Inventory management	Demand planning management
Performance Manufacturing firms	Pearson correlation	1		
	Sig. (2-tailed)			
Inventory management	Pearson correlation N.	.371[*] 79*	1	
	Sig. (2-tailed)	.000		
Demand planning management	Pearson correlation N	.431[*] 79*	.240 79	1
	Sig. (2-tailed)	.000	.038 79	79

From the findings, a positive correlation is seen between each variable and performance. The strongest correlation was established between Warehouse managements and performance of Manufacturing firms in Nairobi city County, Kenya(r = 0.538 and the weaker relationship found between Demand planning management and performance of firms County(r = 0.183). This is tandem with the outcomes of Ongeri and Osoro (2021), who observed that all independent variables were found to have a statistically significant association with the dependent variable at over 0.05 level of confidence.

Regression Analysis

To determine the relationship between the independent variables and the dependent variable and the respective strengths, the regression analysis produced coefficients of determination. Findings in table 5 reveal a positive relationship between the performances of Manufacturing firms in Nairobi city County, Kenya.

Table 5: Regression coefficient Results

	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
(constant)	-.134	.060	-1.144	.004	.001
Inventory management	.471	.132	.858	5.472	.001
Demand plan management.	.263	.115	.321	2.657	.002
b. Dependent Variable: performance of manufacturing firms in Nairobi city County, Kenya					

A unit change in inventory management would thus lead to a .471 effect on performance of Manufacturing firms in Nairobi city County, Kenya sector ceteris paribus; while a unit change in inaccurate demand plan management would have an effect of .263 change in performance of Manufacturing firms County. This outcome is in line with the results of Ongeri and Osoro (2021). This implies that among other factors, Inventory management, and   Demand planning management are significant determinants of performance of manufacturing firms in Nairobi city County, Kenya.

Conclusion

Inventory Management

The study concludes that there is a positive relationship between Inventory management   and Performance of Speciation identification, periodic design assessment, continues improvement and proactive assessment are among the Inventory management factors that significantly influenced the performance of manufacturing firms in Nairobi city County, Kenya. The study further concludes that by implementing Inventory management has enhanced performance of

manufacturing firms in Nairobi city County, Kenya, leading to operational increase in efficiency and effectiveness .Therefore, the study concludes manufacturing firms in Nairobi city County, Kenya has significantly increased their suppliers' quality management in the In Nairobi city County, Kenya government in the supply chain practices.

Demand Planning Management

The study concludes that there is a positive relationship between Demand planning management and performance of Manufacturing firms County. Partnership enforcement policy, collective bargaining, alternative dispute resolution processes, free expression of concerns by involved practices are among the coordination   factors that significantly influenced the performance of manufacturing firms in Nairobi city County, Kenya. The study further concludes that by adopting alternative coordination and partnership mechanisms as it was observed at Manufacturing firms in the level of performance of manufacturing firms has increased. Therefore, the study concludes that manufacturing firms in Nairobi city County, Kenya has been experiencing significant increase in service delivery through embracing proper coordination in the supply chain practices.

Recommendations

Inventory Management

The study recommend that Inventory management formalizes relations between practices within a robust legal framework, but is much more besides; it is an opportunity to define the arrangements that encompass every aspect of what outcomes the Manufacturing firms in Nairobi city County, Kenya wants from the supplier and how it wants the relationship to work. This means that the In Nairobi city County, Kenya needs to take an active role in the development of the quality mechanism early on; it should not be left as a supplementary activity post negotiation. At preparation of every quality management can contribute to supplier evaluation on performance of manufacturing firms in Nairobi city County, Kenya. Proper Inventory management can result to high procurement in firms County.

Demand Planning Management

This study recommends that demand planning management had a strong relationship with performance of manufacturing firms in Nairobi city County, Kenya. When relationship are not properly managed, they may cause supplier delays, undermine team spirit, increase delay costs, and, above all, damage business relationships. With the increase in the number of participants in a supplier management, it is obvious that more business interactions and arguments end up with an increase in the number of supplier relationship disputes. Research in preventing and resolving relationship disputes supports the effort for better understanding and harmonization of the different cultures. Therefore, this study recommends to the management of manufacturing firms in Nairobi city County, Kenya to enhance and upgrade on the implementation of all applicable alternative disputes resolution mechanisms so to protect relationship with its stakeholders in the supply chain practices.

Areas for Further Studies

This study focused on Inventory management, and demand planning management and performance of manufacturing firms in Nairobi city County, Kenya. The study therefore recommends a further study to be conducted to other counties in Nairobi city County, Kenya. Then get their findings and compare with this and agree or disagree. The study also recommends replication of the study in other sectors such as manufacturing sector and public sector to allow comparison of research findings. Future researchers an investigate the factors affecting supply chain best practices broadly in all areas of concern in this profession on performance of the supply chain practices.

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