



INVENTORY MANAGEMENT PRACTICES AND OPERATIONAL PERFORMANCE OF KENYA ANIMAL FEEDS INDUSTRY

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INDUSTRY**

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ABSTRACT

Animal feed manufacturing companies in Kenya have long been shrouded in mystery regarding their operational practices. The article delved into the secrets of successful animal feed manufacturing companies in Kenya in this groundbreaking research. The study examined how inventory management practices impact operational performance in the animal feed industry and aimed to uncover the inventory management practices used by the companies. A sample of 24 companies was selected using a reliable, simple random sampling method from a population of 79 companies. Both primary and secondary data were collected using a structured questionnaire, and descriptive statistics were employed for analysis. The study's results revealed some fascinating insights into the inventory management practices employed by animal feed manufacturers in Kenya. Just-In-Time and Economic Order Quantity were the most widely used inventory management practices, adopted by 28.1% and 26.6% of companies, respectively. Many companies also implemented Vendor Management Inventory and Material Requirement Planning at 23.4% and 21.9%, respectively. The study's most significant takeaway was that effective inventory management practices can significantly improve the operational performance of animal feed manufacturing companies. By adopting these practices, companies can enhance their production processes, reduce costs, and improve overall efficiency. The research provides valuable insights applicable to Kenya and other animal feed manufacturing industries. The study was a groundbreaking contribution to the body of knowledge on inventory management practices and their impact on operational performance. The findings provided vital information for animal feed manufacturers in Kenya and offered valuable lessons for companies in similar industries worldwide. By embracing effective inventory management practices, companies can gain a competitive edge, achieve optimal production levels, and streamline operations.

Keywords: *Inventory management practices, Operational performance, Animal feeds industry*

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INTRODUCTION

Inventory management is a necessary business process that involves controlling, organizing, and planning inventory levels to ensure optimal resource utilization. In the animal feed industry, effective inventory management is crucial for providing high-quality animal feeds for optimum nutrition (Negash, 2020). The animal feed sector in Kenya is a vital player in the agricultural industry, contributing significantly to the country's economic growth (Zdorovets et al., 2020). However, despite its importance, there needs to be more literature regarding the inventory management practices used by animal feed-producing companies in Kenya.

The absence of information on inventory management practices used by animal feed-producing companies in Kenya makes it challenging for these companies to optimize inventory levels and ensure adequate stock availability. This, in turn, directly impacts their operational performance (Termeer et al., 2019). Effective inventory management practices can help companies reduce costs, improve customer satisfaction, and enhance operational performance (Puente-Rodríguez et al., 2022). Therefore, it is essential to investigate inventory management practices used by animal feed-producing companies in Kenya to fill this gap (Oshchepkov et al., 2019). The animal feed industry faces many challenges that affect the efficiency of its operations. One of the significant challenges is the inefficient use of modern inventory management techniques (Dell et al., 2022). Most animal feed-producing companies in Kenya rely on manual methods for inventory management. Manual methods often lead to errors in inventory tracking, inaccurate stock levels, and inefficient resource allocation (Nattasha et al., 2020). Furthermore, the absence of standardized inventory management practices results in inventory management practices that are neither consistent nor effective.

Moreover, the animal feed industry in Kenya needs to grapple with the problem of high production costs. The lack of effective inventory management practices often results in overstocking

or understocking, which leads to increased production costs (Boienko & Susidenko, 2019). Overstocking results in inventory holding costs, while understocking leads to the inability to fulfill orders on time, leading to customer dissatisfaction (Caprarulo et al., 2022). Given the importance of inventory management in the animal feed industry in Kenya, it is crucial to investigate the inventory management practices used by animal feed-producing companies. The study intended to provide insights into the challenges faced by these companies and suggest effective inventory management practices to improve their operational performance. The study also aimed to contribute to the body of knowledge on inventory management practices in the animal feed industry, especially in developing countries like Kenya.

Research Problem

The Kenya animal feeds industry is a critical sector that significantly supports the country's livestock farming activities. The industry faces numerous challenges in its operations, including rising production costs, unpredictable raw material supplies, and fluctuating demand for its products. These challenges make it difficult for companies within the sector to optimize their production processes and maintain profitability. One critical area that could impact the industry's operational performance is inventory management practices. Effective inventory management is essential for companies to balance their production and supply chain activities, ensure sufficient stock levels of raw materials and finished products, and reduce wastage and losses due to spoilage or obsolescence. However, there needs to be more research on the specific inventory management practices used by animal feed companies in Kenya and how these practices affect their operational performance. Understanding the relationship between inventory management practices and operational performance in the animal feed industry is essential for identifying opportunities for improvement and optimizing business processes to enhance the

industry's competitiveness. Therefore, the study investigated the inventory management practices used by animal feed companies in Kenya and their impact on operational performance.

Purpose of the Study

The study aims to examine the relationship between inventory management practices and the operational performance of animal feed-producing companies in Kenya.

Research Objective

The following objective formed the basis of the study:

- To establish the inventory management practices used by animal feed-producing companies.

Research Question

The research was built upon the inquiry:

- What are the inventory management practices used by animal feed-producing companies?

Value of the Research

The study was of great importance as it delved into how inventory management practices could impact the overall performance of the animal feed industry in Kenya. The study provided valuable insights and recommendations to the industry on improving its inventory management practices and enhancing its operational performance. Effective inventory management practices play a significant role in the success of any industry. Companies can enhance their productivity and profitability by optimizing inventory levels, reducing waste, and improving supply chain efficiency. In the animal feed industry, where the timely delivery of high-quality products is crucial, efficient inventory management can directly impact customer satisfaction and loyalty.

The study attempted to shed light on the current inventory management practices of the animal feed industry in Kenya, identifying areas of improvement and providing guidance on best practices. It also highlights the challenges faced by the industry, such as fluctuations in demand, supply chain disruptions, and perishable inventory, and offers solutions to overcome these challenges. The study's findings could benefit the animal feed industry in Kenya and other industries facing similar challenges in inventory management. Ultimately, by improving inventory management practices, companies may improve their operational performance, enhance their competitiveness, and contribute to the country's overall economic growth.

Conceptual Framework

The independent variable was "Inventory Management Practices," which includes efficient and inefficient practices used by animal feed-producing companies in Kenya. The dependent variable was "Operational Performance," which included high and low performance in terms of efficiency. Efficient inventory management practices positively impact operational performance, leading to high efficiency and high performance. In contrast, inefficient inventory management practices harm operational performance, leading to low efficiency and performance. The framework also showed that there can be no impact on operational performance if the inventory management practices used by the animal feed-producing companies are efficient and efficient. Overall, this conceptual framework guided the study in exploring the inventory management practices used by animal feed-producing companies in Kenya and their impact on operational performance. Figure 1 showed the relationship between the independent and dependent variables.

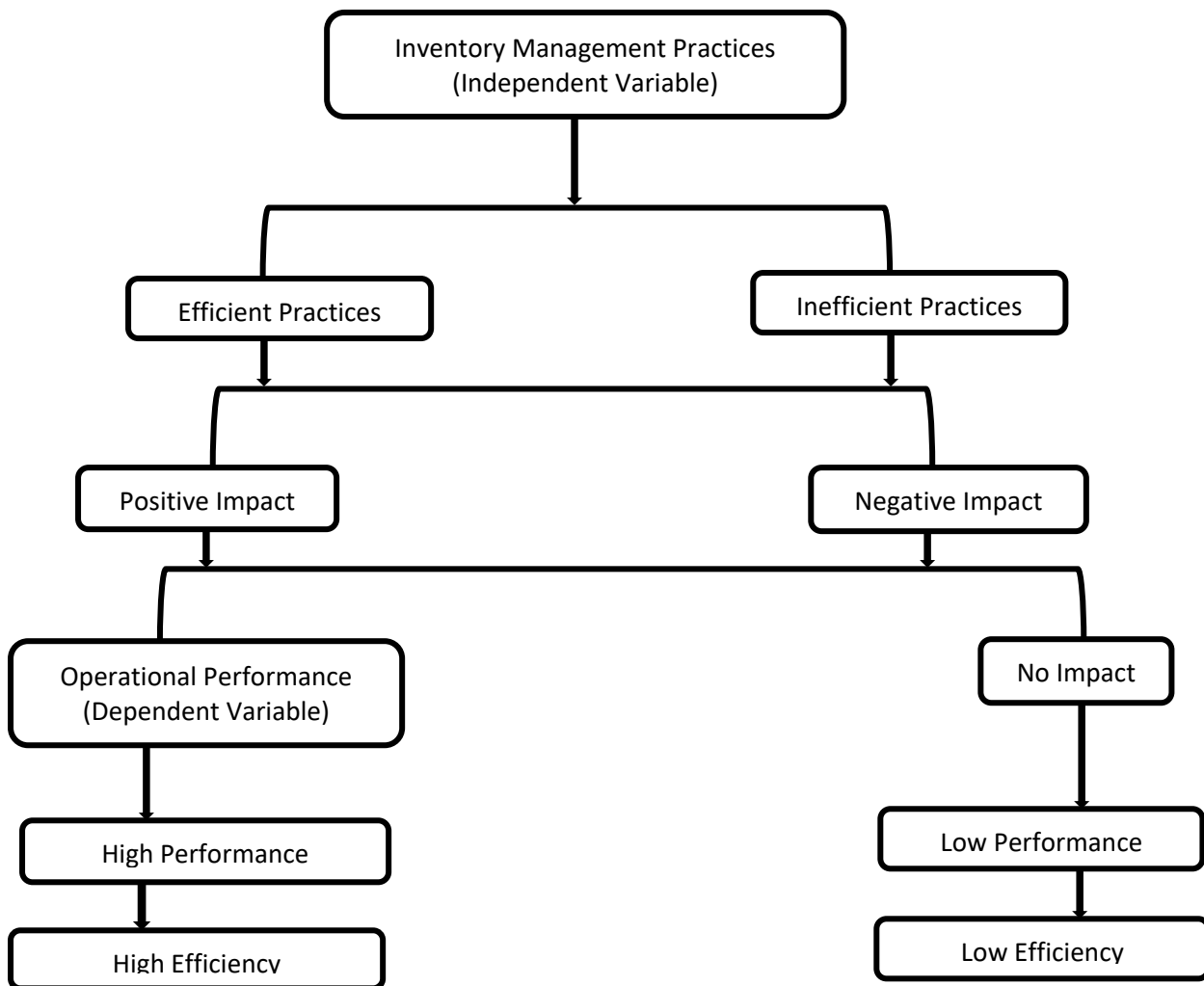


Figure 1: Conceptual Framework Showing the Relationship between the Independent and Dependent Variables

METHODOLOGY

Study Population and Sample Size: The study was conducted on 79 animal feed manufacturing companies in Kenya that produce animal feed for various animals, including poultry, cattle, pigs, and fish. A sample size of 24 animal feed manufacturing companies was selected based on the feasibility and available resources for the study. The sample size was representative of the population and provided sufficient data to draw meaningful conclusions about the inventory management practices of animal feed producers in Kenya. Simple random sampling was employed as the sampling technique in this study to ensure that each participant had an equal chance of being selected from the population's list of all animal feed manufacturing companies (Zheng et al., 2020).

The research design utilized for the study was a descriptive research design, which aimed to describe the inventory management practices employed by animal feed manufacturers.

Data Collection: A structured questionnaire was used to collect data for the study. The questionnaire gathered information about companies' inventory management practices in Kenya's animal feed industry. It consisted of open-ended and closed-ended questions, allowing for various responses and ensuring that all relevant information was captured (Aggarwal & Ranganathan, 2019). Face validity was checked to ensure that the questions were appropriate for the study and that they would elicit the desired information from the respondents.

(Kaihlanen et al., 2019). The counter-checking involved reviewing the questionnaire to ensure it was clear, relevant, and easy to understand. The questionnaire was administered to a sample of companies in the animal feed industry in Kenya.

Data Analysis: The data analysis for the study on inventory management practices and operational performance of Kenya's animal feed industry involved using descriptive statistics, precise frequencies, and percentages to summarize and present the data collected. The researcher collected data on the inventory management practices employed by animal feed-producing companies and then analyzed the data using descriptive statistics to determine the frequency of each inventory management practice and the percentage of companies that employ each practice. The frequency of each inventory management practice was determined by the number of companies that employed the practice. For example, if 20 out of 79 companies used a Just-In-Time inventory

management system, the frequency of this practice would be 20. The percentage of companies that employ each inventory management practice was determined by dividing the frequency of each practice by the total number of companies and multiplying the result by 100. For example, if 20 out of 79 companies used a Just-In-Time inventory management system, the percentage of companies using this practice would be $(20/79)*100 = 25\%$. Using frequencies and percentages helped provide a clear picture of the inventory management practices used by animal feed-producing companies in Kenya, which could be used to identify trends and patterns in inventory management practices and to develop strategies to improve the operational performance of these companies.

RESULTS AND DISCUSSION

Table 1 presents data on the positions held by respondents in animal feed-producing companies in Kenya as part of a study on inventory management practices.

Table 1

Positions held by Respondents in Animal Feed-Producing Companies (*N* = 79)

Position	Freq. (<i>f</i>)	Percent (%)
Operations Manager	8	34.8
Clerk Officer	7	30.4
Operations Assistant Manager	5	21.7
Store Officer	3	13.0

The majority of respondents were operations managers (34.8%), followed by clerk officers (30.4%) and operations assistant managers (21.7%). Store officers had the lowest representation (13.0%). The high representation of operations managers suggests they may significantly influence inventory management practices. The study could gain valuable insights by including questions about the roles of clerk officers. The low representation of store officers may suggest their role is less critical, but this may be biased due to a small sample size. Overall, the study should pay close attention to the roles and responsibilities of different positions within animal feed-producing companies to gain a

comprehensive understanding of inventory management practices.

Inventory Management Practices in Use

Based on the feedback, it was concluded that effective inventory management practices are crucial in the animal feed industry. However, these practices are not uniformly employed, and their utilization varies considerably. Certain practices are more commonly used than others. Most of these practices focus on managing inventory levels in retail operations. Table 2 below illustrates the distribution of the four practices analyzed in this study across inventory management systems.

Table 2Distribution of the Four Practices Study across Inventory Management Systems (*N* = 79)

Inventory Management Practices	Freq. (<i>f</i>)	Percent (%)
Economic Order Quantity	17	26.6
Just-In-Time	18	28.1
Material Requirement Planning	14	21.9
Vendor Management Inventory	15	23.4

The findings indicated that Just-In-Time (JIT) and Economic Order Quantity (EOQ) were the most commonly used inventory management practices, respectively, with 28.1% and 26.6% frequency. The finding suggests that animal feed companies in Kenya are adopting modern inventory management techniques to improve their operational performance. Just-In-Time is a lean production approach that minimizes inventory levels by producing goods only when needed. EOQ helps to determine the optimal order quantity to minimize inventory holding costs. Material Requirement Planning (MRP) and Vendor Management Inventory (VMI) were also used by many companies, with 21.9% and 23.4% frequency, respectively. Material Requirement Planning helps companies to plan their production schedules and material requirements, while VMI involves collaboration with suppliers to manage inventory levels.

The implications of these results were significant for the animal feed industry in Kenya. Firstly, adopting modern inventory management practices such as JIT and EOQ can lead to cost savings and Table 3 provides information on inventory management practices that are common across all branches of a company. The table lists four practices: Economic Order Quantity, Vendor Management Inventory, Just-In-Time, and Material Requirement Planning. The table reports the number of

improved efficiency in production processes. These modern methods can lead to a competitive advantage in the market, as companies can better respond to customer demands and market fluctuations.

Secondly, using MRP and VMI highlights the importance of collaboration with suppliers and proper material requirements planning. Collaboration can reduce lead times, avoid stockouts, and improve the overall supply chain performance. In addition, companies can improve their relationships with suppliers and negotiate better pricing and terms by working closely with them.

Overall, the study suggests that the animal feed industry in Kenya is adopting modern inventory management practices to improve its operational performance. The findings highlight the importance of proper inventory management and planning in achieving cost savings, efficiency, and competitive advantage in the market.

Distribution of Inventory Management Practices

respondents (*N*), the sum of responses (Sum), the number of respondents who answered "Yes" and "No" for each practice, the percentage of respondents who answered "Yes" and "No" for each practice, the mean, and the standard deviation.

Table 3

Inventory Management Practices that are common across all Branches of a Company

Practices	<i>N</i>	Sum	Yes		No		<i>M</i>	<i>SD</i>
			Freq.	%	Freq.	%		
EOQ	23	23.00	23	100.0	0	0.0	1.00	0.00
VMI	23	25.00	21	91.3	2	8.7	1.09	0.29
JIT	23	26.00	20	87.0	3	13.0	1.13	0.34
MRP	23	30.00	16	69.6	7	8.7	1.30	0.47

The results indicate that all the respondent companies used EOQ, suggesting that it is a well-established and widely accepted practice in the industry. Vendor Management Inventory was used by 21 of the 23 respondent companies, which is a high percentage of adoption. Just-In-Time was used by 20 respondent companies, indicating moderate adoption, while Material Requirement Planning was used by 16 companies, which is relatively low compared to the other practices.

The implications of these findings are significant for animal feed-producing companies in Kenya. Economic Order Quantity is an essential inventory management practice that helps to minimize the costs associated with ordering and holding inventory. The high adoption rate of this practice suggests that companies in the industry recognize its importance and are actively implementing it.

Vendor Management Inventory and JIT are practices that enable companies to streamline their supply chains by reducing inventory levels and optimizing the timing of deliveries. The high adoption rate of VMI and the moderate adoption rate of JIT suggest that companies in the industry are actively working to optimize their supply chains.

Material Requirement Planning, on the other hand, is a practice that helps companies to plan their production schedules and manage their inventory levels more effectively. The low adoption rate of this practice suggests that there may be opportunities for companies in the industry to improve their inventory management processes and increase efficiency.

Previous literature on inventory management practices in other industries has shown similar results to this study. Economic Order Quantity is a well-established and widely accepted practice in many industries (Omondj, 2019; Piñeiro, 2022). Vendor Management Inventory and JIT have also been found to be effective practices for improving supply chain management in various industries (Vernooij et al., 2019). Material Requirement

Planning is effective in some industries, but its adoption is generally lower than in other practices.

In conclusion, the findings of this study highlight the importance of effective inventory management practices in the animal feed-producing industry in Kenya. The high adoption rate of EOQ and VMI and the moderate adoption rate of JIT suggest that companies in the industry are actively working to optimize their inventory and supply chain management processes. However, the low adoption rate of MRP suggests that there may be opportunities for companies to improve their inventory management practices and increase efficiency. These findings provide valuable insights for companies in the industry to improve their inventory management practices and enhance their operational performance.

CONCLUSIONS AND IMPLICATIONS

The study results indicate that animal feed-producing companies in Kenya are adopting modern inventory management practices, such as JIT, EOQ, MRP, and VMI, to improve operational performance. The adoption of these practices has the potential to lead to cost savings, increased efficiency, and competitive advantage in the market.

The high adoption rate of EOQ and VMI suggests that these practices are well-established and widely accepted in the industry. The finding highlights the importance of minimizing inventory holding costs and collaborating with suppliers to manage inventory levels effectively. The moderate adoption rate of JIT suggests that companies in the industry are actively working to reduce inventory levels and optimize the timing of deliveries.

However, the low adoption rate of MRP indicates that there may be opportunities for companies to improve their inventory management processes and increase efficiency. The result highlights the importance of effectively planning production schedules and material requirements to reduce lead times, avoid stockouts, and improve supply chain performance.

The findings of this study are consistent with previous literature on inventory management practices in other industries. The results provide valuable insights for companies in the animal feed industry in Kenya to improve their inventory management practices and enhance their operational performance. By adopting modern inventory management practices, companies can improve their competitiveness, respond more effectively to customer demands, and achieve cost savings.

Limitations and Future Research

While this study provides valuable insights into the inventory management practices of animal feed-producing companies in Kenya, some limitations should be acknowledged. Firstly, the study only surveyed a small sample size of 23 companies, which may only represent some industries. A larger sample

size may provide a more comprehensive understanding of the inventory management practices in use in the industry.

Secondly, the study only focused on four inventory management practices: EOQ, JIT, MRP, and VMI. Other practices, such as safety stock management and ABC analysis, were not considered. Future research could explore the use of these additional practices in the animal feed industry in Kenya.

Finally, the study only examined the adoption of inventory management practices and did not assess their effectiveness in improving operational performance. Further research could investigate the impact of different inventory management practices on cost savings, efficiency, and customer satisfaction.

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