INVENTORY MANAGEMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE OF DAIRY PROCESSING FIRMS IN KIAMBU COUNTY, KENYA

Ndiwa, B. M., & Chege, W.

The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com

Vol. 9, Iss. 1, pp 999 – 1013. March 29, 2022. www.strategicjournals.com, ©Strategic Journals

INVENTORY MANAGEMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE OF DAIRY PROCESSING FIRMS IN KIAMBU COUNTY, KENYA

[1*] Ndiwa, B. M., & [2] Chege, W.

[1*] MBA Candidate, School of Business, Kenyatta University [KU], Kenya

[2] Doctor, Lecturer, Department of Management Science, Kenyatta University [KU], Kenya

Accepted: March 16, 2022

ABSTRACT

The study investigated the relationship between supply chain performance and inventory management practices of the dairy processing firms in Kiambu County. The study focused on the theory of constraints, Resource Based View of the firm (RBV) and the Institutional theory. The study employed descriptive research design. The target population was three diary firms in Kiambu, therefore the study used census sampling method to sample 96 respondents chosen from the supply chain departments, stores department and the consumer department, 85 questionnaires were answered and returned for data analysis. The study analysis was done with the help of (SPSS) a statistical Package for Social version 22. Findings were provided in tables and figures to showing frequency, percentage, mean standard deviation, and significance level of association between study variables. We analyzed the field data using multiple linear regression models and then examined the mean and standard deviation while making conclusions and recommendations. Regression data showed that integration of information is the most important supply chain performance variable that contributes to supply chain performance, followed by material handling, warehousing, and transportation. Inferential statistics showed that there was a significant relationship between information integration and supply chain performance, transportation and supply chain performance, and warehousing and supply chain performance. The study concluded that transportation management plays an important role in giving companies a competitive advantage through customer care and outstanding business. Effective logistics management improves the performance and logistics of the entire supply chain. In this study, dairy companies need to focus on supply chain performance to achieve operational agility, meet customer demands, reduce unnecessary procurement costs, and better manage their facilities. It was recommended that it is essential in Kiambu's dairy business to make full use of the facility, reduce material waste, improve production methods, limit dairy inertia and improve customer interests in these ways. We recommended incorporation of inventory management, financial and non-hierarchical execution of the organization. This study recommended conducting a future study of the impact of logistics management practices on the supply chain performance of other organizations such as manufacturing and service

Key Words: *Information Integration, Material Handling, Transportation, Warehousing, Supply Chain*

CITATION: Ndiwa, B. M., & Chege, W. (2022). Inventory management practices and supply chain performance of dairy processing firms in Kiambu County, Kenya. *The Strategic Journal of Business & Change Management,* 9 (1), 999 – 1013.

INTRODUCTION

Globally firms are adopting many business improvement methods to improve performance. As competition intensifies, the faces the ever-increasing challenge of delivering goods and services in the intended clients at the right time while taking into considering the costs involved thus making the process with minimal cost offered. Supply chain performance is generally aimed at improving the creation of customer value. Companies need to work with chain members to meet consumer demand and maximize business profits.

The term supply chain performance has been classified into two classes that is Quality measures, e.g. satisfaction of customer and the quality of the product and secondly Quantity measures; for instance, order-to-delivery lead time, flexibility, distribution presentation, resource operation, source chain reaction time, and delivery performance (Agamy, Selah, & Ramsy, 2012).

A warehouse management method is a control method that monitors inventory levels and determines which levels need to be maintained, when inventory needs to be replenished, and the size of orders (Waters, 2003). Silver et al., (2018) is working on information integration, transportation, procurement, testing, warehousing, material management, bundling and supply management combined with inventory procurement (Silver et al., 2018). He further stated that warehouse management seeks to improve the risk level of all warehouse work habits and improve the development of equivalent assets such as data, objects, and people and energy from creation to usage levels.

Kiambu's dairy firms form one of cornerstone of Kenya's dairy economy. With key advancements in technology, speculations and complexity of the sector, new threats have emerged in the past several years. Kiambu County comprise of the following 12 sub-counties as outlined in Appendix II. However, as milk is produced and sold to the informal sector, there is no official data on dairy co-operatives and production in the Luil, Gatundunorth, Tika and Juja districts. The other eight unions produce 108.9 million liters annually, most of the milk is produced by one union, Githunguri, and 75.5 million liters is the rest of the 33.4 million liters produced by the other seven unions. Remaining (Kiambu County Annual Report of Daily Cooperative, 2013). The co-operative receives raw milk, where it is further processed and packaged in fresh mala, yogurt, butter, or ghee products. There are 415 registered co-operatives in the county, of which 330 are active. Milk production in Kianbu County has really improved. Milk production in this county is produced by small dairy farmers and large herds of dairy cows, but with zero grazing. Milk is sold through cooperatives and merchants around Nairobi. Farmers use a variety of the latest milk production techniques. However, they are operating below peak because they are not achieving optimal production. Despite the growth of dairy in Kianbu County, farmers face many problems. Based on the approach majoring of the dairy, farmers fail to understand the connection between the productivity and farming practices (Kenya Dairy Board, 2017).

Similarly, to other milk processors, Brookside one of the Kiambu's dairy processing firm invested US$35 million (Kshs. 3.5billion) in the nation's second milk powder plant in 2014, to take advantage of the overabundance milk volumes during the blaze time frame in Kenya, when milk was depleted due to the need for enough milk to feed the nation (Kenya Dairy Board, 2018).

Whereas government efforts target sector-wide upgrades, members in the milk production network can shape the expenses of exchanges through decision of fitting administration structures. There is additionally acknowledgment that the impact of these variables isn't homogenous across the different phases of the production network (Birachi, 2006). Setting up the connection between stock administration practices and production network performance of Dairy Processors in Kiambu County, Kenya is important to give conceivable future

bearings to coordination and performance improvement in the dairy business.

Statement of the Problem

As a result of legislative changes at the local, regional, and international levels, the Kenyan dairy industry has seen a considerable transformation. Since globalization has intensified, competition among companies has grown and it is necessary to develop strategies to guarantee that dairy processing enterprises in Kenya especially Kiambu County can successfully manage their supply chains. Moreover, both academics (Fawcett et al., 2012) and practitioners are still grappling with the issue of how to get all supply chain participants to comprehend each other's advantages and performance (Grocery Manufacturers Association, 2008). There has been a number of research investigating the relationship between supply chain management and inventory management methods as well as corporate supply chain methods (Zacharia; Nix, & Lusch, 2011).

A study done by Kemokai (2012), Milk production and processing firms in Kiambu were asked to determine the link between SC failure and customer happiness. Failures in milk production, bad relationships with suppliers, and inventory theft were cited as reasons for SC failure in the research. Because it concentrated on SC failures rather than inventory organization methods and supply chain presentation, the research did not align with the current research. Kenya's dairy sector is undergoing major changes in the local, regional and international political environment. These policies have had a lot of impact on the dairy supply chain over time. The state department in charge of Livestock has presented a draft dairy policy that includes strategies for developing self-sufficient dairy. This policy aims to provide commercial services to farmers and the private sector. However, the policy hasn't provided any solutions to the farmers. This could be due to lack of policy implementation as a result of lack of fundings to implement it. (Dairy Draft Policy, 2018) As globalization continues, competition between companies is intensifying and we need to find a way to ensure the success of Kenya's dairy processing business. Finding a common understanding of the interests and performance of partners in a supply chain setup has presented challenges for both academics and stakeholders as mentioned by Fawcett et al., (2012) ,Grocery Manufacturers Association, (2008), Zacharia, Nix, & Lusch (2011). Though several studies have been done on account management performs and its effect on the supply chain performance no study had covered the dairy industry which greatly relies on the inventory management practices to make sure its supply chain performance is attained and the firms stay profitable, most studies done have also concentrated on other markets which are structurally different from the Kenyan market which this study will seek to address.

Research Objectives

The study general objective was to assess the effect of inventory management practices and supply chain performance of Dairy processing firms in Kiambu County. The study's specific objectives were included:-

- To find out the effect of information integration on supply chain performance of Dairy Processing firms in Kiambu County.
- To evaluate the effect of material handling on supply chain performance of Dairy Processing firms in Kiambu County.
- To find out the effect of transportation on supply chain performance of Dairy Processing firms in Kiambu County.
- To evaluate the influence of warehousing on supply chain performance of Dairy Processing firms in Kiambu County.

LITERATURE REVIEW

Theoretical Review

Theory of Constraints

The theory of constrains commonly referred to a s(ToC) was developed by Goldratt (1990a) The theory mostly aims at initiating and executing advanced improvement by looking on a need that

prevents a system from achieving a higher degree of performance. According to the ToC, every business should have a single requirement. Goldratt and Cox (1992), as the owner of a framework, you are required to determine its goal. Most business aspects have as their primary goal the generation of cash now and in the future. Important requirements that must be satisfied for the framework to continue to function may be set out by different stakeholders. The Theory of Constraints (ToC) tries to development creation throughput performance or framework by and large performance estimated through pay through the recognizable proof of those practices that are compelling the assembling gadget (Goldratt, 2004).

Company resource-based view (RBV)

As a result of the RBV, businesses may be thought of as a group of resources. Some of these assets may be considered important (Wernerfelt, 1984, Barratt and Oke, 2007). According to the idea, the determinants of a business's presentation, outside of the actual firm, are determined by the industry in which it is situated. While IO views sustainable advantage from an external perspective, RBV views it from an internal perspective, seeking to explain why businesses in the same industry perform differently (Kushwaha, 2011).

In his work, Barney (2001) contends that feasible upper hand can be gotten from what the firm controls as far as assets and capacities. These assets have remarkable qualities in that, they are uncommon, they are important, and they can't be subbed and furthermore hard to copy. In addition, such assets and functions can be viewed as both essential and elusive resources, including: Organizational management capabilities, related cycles and schedules, and organization-managed data and information (Barney et al., 2001).

Institutional Theory

Powell and DiMaggio first suggested this idea in 1991, and it has been widely accepted since. This process is concerned with the interplay of structure, norms, routine, and standards, which serve as guidelines for appropriate practices. The activities of organizations are satisfying the necessities of the law and the clients. The two players compress the association to embrace practices that are earth mindful (Laosirihongthong et al., 2013). Organizations have regulated acts of converse coordination because of both interior and outer pressing factor. The imminent factor of imitation arises from the duplication of competitors' results when federations attempt to imitate what is fruitful in other federations like them (Cox, 2010, Barua and Whinston, 2009).

Empirical review

Integration of supply chain information and logistics was investigated by Anzam, Prajogo, and Olhager (2009) in the context of business performance. Using informational index from 232 Australian firms, we found that coordinations incorporation significantly affects operation performance. Information Technology abilities and data sharing both effectively affect coordinations incorporation. Besides, essential provider connections have both immediate and circuitous impacts on the functional execution of the firm; with the roundabout impact by means of data coordination and coordination’s reconciliation.

Okore and Kibet (2019) information exchange and tourist supply chain performance in Kakamega County were examined. The study was designed as an explanation study. Four recognized travel groups and five authorized inns in Kakamega County participated in the survey, which had 459 representatives. The study findings indicated that collaboration has a positive influence on the functioning of the supply chain.

According to Musau, Namusonge, Makokha and Ngeno (2017), a textile manufacturing firm's profitability, dependability, cost, responsiveness, flexibility and asset management efficiency were all affected by the transport management of their supply chains. The researcher employed convergent parallel mixed-methods techniques to arrive at his

conclusions. 196 respondents were selected from Nairobi County's acquisition offices and department heads of 15 textile manufacturing industries. This was the size of the sample. There were 139 responders to the survey. The examination reasons that transport the board have the capability of emphatically affecting production network performance of Textile firms and hence perceive the significance of transport the executives in the production network.

In their study to investigate the distribution routes and supply chain performance: New KCC Eldoret, Chesesio and Makokha (2016) aimed at investigating how product productivity impacts supply chain performance in the New KCC, the study set out to determine how product productivity impacts supply chain performance. In this study, an expressive examination plan was used as part of the study's methodology. There were 84 participants in the research, who came from different departments within the business. Questions with open and closed ends were included in self-administered surveys. Using both descriptive and inference statistics, the study concluded that supply chain performance is strongly influenced by the supply chain. In order for the business to survive, the essential diversification of the corrugated board cycle for passing the finished product from the manufacturer to the end customer is necessary.

Ngugi, Muhalia, and Moronge (2021) One of Kenya's finest consumer merchandise makers wanted to know what influence warehouse management solutions had on its supply chain. The researcher used a descriptive study approach. Nairobi's 51 FMCG manufacturers each have an operations manager; Kenya was among the responders. The research included Nairobi-based operations managers from FMCG manufacturers. A census technique was used to choose 51 makers of FMCGs. The study used the questionnaires to gather the results from the respondents; the data used only primary data. An FMCG supply chain research in Nairobi and Kenya found that management of warehouse systems has a favorable and critical impact on supply chain performance. The warehouse administration system assists to optimize the control of the stock; warehouse management systems grow and improves productivity of the work.

A study done by Subramanya, Ramaa and Rangaswany (2012), on the impact of WMS on India's. Focus of the study was on a major retailer involved with consumer goods. The study looked at 60 retailing businesses and concluded that those with WMSs that were programmed had seen their process length reduce to 773 minutes. Mungu (2013) did an examination concentrate fully intent on deciding what use of practices of overseeing co-ordinations can mean for the degree of loads of fundamental medications in general wellbeing organization. The study was conducted in Bungoma Kenya. The study reviewed 15 wellbeing organizations. It was established that acts of overseeing inventories, transport, and stockroom like quality control, naming, clear specialization and evaluating emphatically affected degree of supplies of fundamental medications in the offices.

According to Cai and his colleagues (2017), improving supply chain performance requires a comprehensive and analytical performance monitoring system. One has to be able to take action to achieve key performance indicators (KPIs). Theo Kai et al. Performance Metrics reports make it easier to achieve your workplace performance goals when planning and performance are linked. Al. (2018). Supply chain performance is affected by many factors, including the financial and cost impact of the transportation supply chain. Supply chain management is an important driver of supply chain operations.

Chinese artists Zhang and Okalo Afa (2015). Albano, Racca, and Albano, asserts that in order to improve sales performance, companies have improved the performance of the entire procurement and supply chain beyond the performance of individuals within the organization. Supply chain performance

measurements are also known as the popular benchmark used to evaluate both features and supply chain features (Kurein and Qureshi, 2011)

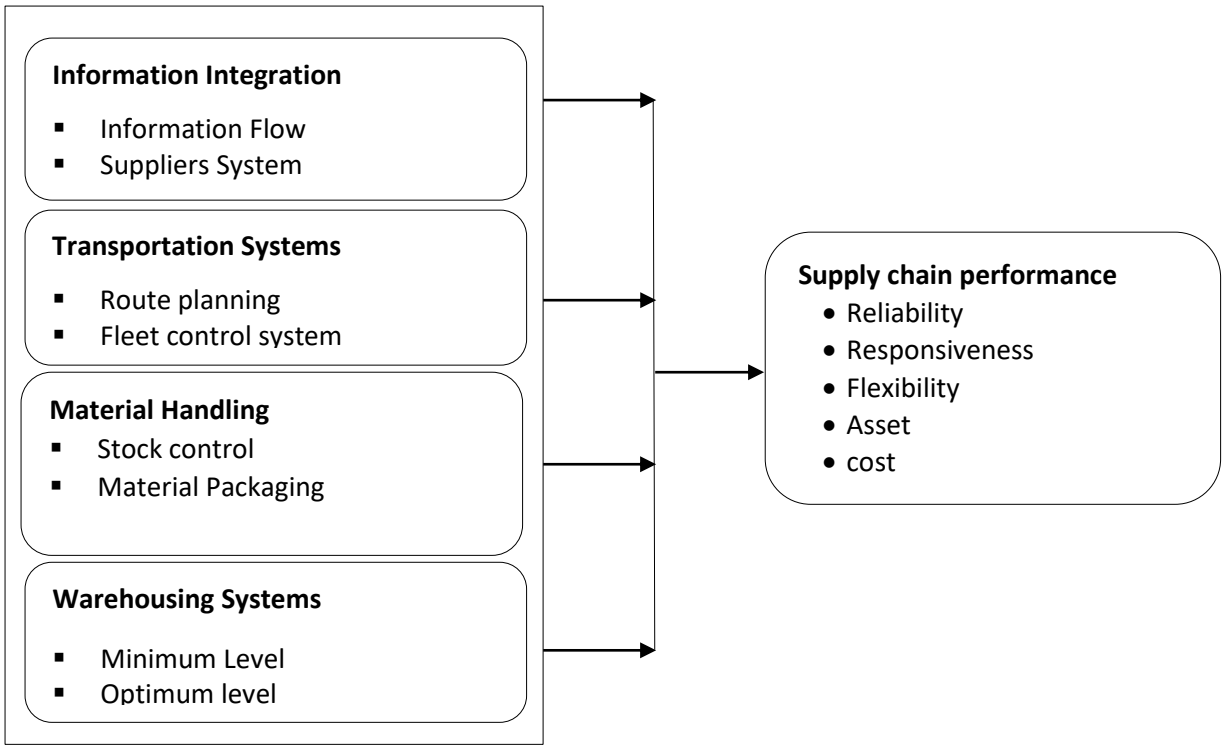

Figure 1: Conceptual Framework

Source: Researcher (2021)

METHODOLOGY

Descriptive investigation design was used in the study (Bryman, 2015). According to Kiambu County's Ministry of Agriculture, there were eight dairy processors in the county, but only three were the focus of this study's research efforts. Targeted departments were retail and supply chain, as well as consumer services divisions. These departments were chosen because the targeted employees were the right ones to give right information for the study. Data were obtained using unstructured questionnaires. The answer of each respondent was the same as the questions were standardized for the questionnaire. Survey plans or questionnaires are examples of data collection instruments, according to Borg & Gall (1989), which define them as "any form used to gather input from respondents on identical items" (Roger, 2016). The integrity and consistency of the questionnaire was checked prior to processing. Quantitative data from the survey had to be encoded and entered into the SPSS analysis program. Descriptive statistics were used to assess central tendency and variability. We examined the mean and standard deviation using regression and correlation analysis for inference statistics. Multiple regression analysis was performed to examine the link between variables.

The regression equation was:$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_3 X_4 + \beta_3 X_5 + \varepsilon$

Whereby $Y =$ Supply Chain Performance

X_1 =Information Intergration

$X_2 =$ Transportation system

X_3 =Material Handling

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

X_4 = Warehousing systems

$\beta_1, \beta_2, \beta_3$ and β_4 = Coefficients of Determination

ε = Error term

FINDINGS

Effect of information integration on supply chain performance

Respondents were asked to rate this on a scale of 15. (SD strongly disagrees, D disagrees, N agrees neutrally, SA strongly agrees) Table 1 below showed that the supply chain management performance information integration results average 3.17, indicating that the organization has worked with both midstream and upstream and downstream suppliers to access and agree to an average of 2.07 information

The company's division guarantees that it will work with suppliers to improve their relationships with them. On average, 1.47 agreed that 4,444 suppliers would work together to improve the company's operations and increase its competitive advantage. Meanwhile, an average of 1.22 agreed suppliers will work with other suppliers to increase access to information, thereby improving the delivery of quality goods and services to businesses. Majority of respondents stated that company would work with both midstream, upstream and downstream suppliers to improve the performance of the company's supply chain management. From the results it is clear that the findings are in line with the results of Christopher (2011), who found that organizations can work with all suppliers to manage supplier networks, promote traceability, and manage distribution networks. Competition is no longer between companies, but between supply chains. The industry recognizes that it must depend on effective supply chain management to have a competitive edge in the market. Supply chain globalization requires companies to look for systems that are better connected across capabilities, multiple logistics strategies, implementation processes, and logistics skills to coordinate the flow of materials inside and outside the company.

Table 1: Effect of information integration on supply chain performance

Statement	N	Mean	Std. Dev.
Suppliers who work with other suppliers improve access to information, thereby increasing the delivery of quality goods and services to businesses.	85	1.2292	.55211
A company's supply chain department guarantees to work with suppliers to improve the relationship between them and their suppliers.	85	1.8729	.93183
For suppliers working with the company, it helps improve the operation of the company, thereby increasing its competitive advantage.	85	1.4792	.79444
The company guarantees to work with both intermediate and upstream and downstream suppliers to access information.	85	3.1771	1.21391
Valid N (listwise)	85		

Transportation system on supply chain performance

Respondents agree with the material transport results in Table 2 below, with an average of 3.45, the company is implementing a thorough tour plan. An average of 3.00 strongly agreed that the company has a well-defined disposal policy. An average of 2.56 strongly agreed that the company had enough transportation units. This meant that the company would carry out preventive maintenance, with an average of 1.39 strongly agreeing that the company had enough transportation units.

These results were similar to the study by Fraselle, E. H. (2016) found that well-designed material handling systems and processes reduce inventory, optimize delivery times, improve customer service, and reduce manufacturing, distribution, and transportation costs. Did. In industries that rely on

material handling, the largest application is manufacturing. Issues where material handling can be useful include plant and equipment layout, routing, packaging, and storage. The construction industry needs proper acceptance, sorting, storage and transportation. Currently, this area includes specific methods and equipment that guide civil engineers in developing project plans.

Table 2: Transportation system

	N	Mean	Std. Dev.
The company has enough transportation units	85	1.3958	.71788
Current vehicle planning practices have improved material and product transportation	85	2.5625	1.30434
The company implements a thorough route plan	85	3.4583	1.27252
The company has a well-defined disposal policy	85	3.0000	1.42164
Companies use fleet management systems to track all products shipped to their customers.	85	2.2812	1.00214
Companies use fleet management systems to track all products shipped to their customers.	85	2.1250	.78472
The firm undertakes preventive maintenance	85	2.5104	1.15161
Products and services are delivered to customers on time	85	1.7292	.95674

Material handling and supply chain performance

Results in Table 3 below regarding material handling, respondents with a mean of 3.45 agree that the company has extensive route planning; average 3.00 strongly agree that the company has a clearly defined disposal policy; on average 2.56 agree that there are enough transport units in the company, on average the company performs preventive maintenance, while on average 1.39 agree that there are enough transport units in the company.

These results are similar to the study by Fraselle, EH (2016), where well-designed material handling systems and processes reduce inventory, optimize delivery times, improve customer service, manufacture, and it was found that distribution and transportation costs were reduced. In industries that rely on material handling, the largest application is manufacturing. Issues where material handling can be useful include plant and equipment layout, routing, packaging, and storage. The construction industry requires appropriate acceptance, sorting, storage, motion, and the site includes a particular method and apparatus for leading civil engineers in that configuration. As shown in Table 3, for the handling of materials, we reveal that the average of 2.65 agreed to use the current latest technology in the record of raw materials in the store, averages 2.31 and 2.33, the facts did. The Company accurately achieves prediction to determine manufacturing cost management, and contributes to manufacturing costs and control of material management according to research 2.36, 2.28, 2.19, and 2.07 materials flow process procurement, production, delivery, shipping and distribution I agree that there is. All relevant transport, storage and handling processes include the manufacturing and product requirements for manufacturing and products for delivery to customers. This is done by improving the flow of material. And, the delivery date is shortened and the material logistics plan for managing materials to MA companies to reduce stocks and FIRs or means for successful supply chain grades at your company.

Most of the respondents (n = 38) do not agree that material bearing control contributes to the reduction of manufacturing costs. Studies with

BURT (2014) explains the importance of material management in important contributions of materials for materials and materials assigned to materials. Efficient material management reduces cost cost and improves profitability and increases investment yield revenue.

Table 3: Material handling and supply chain performance

	N	Mean	Std. Deviation
We use the latest technology to accept raw materials in our stores.	85	2.6563	1.34421
The company achieves accurate demand forecasts to determine inventory range	85	2.3125	1.31639
Material inventory management helps reduce production costs	85	2.3333	1.14861
Material inventory management helps reduce production costs	85	2.3125	1.07911
The organization has an inventory management policy to determine how the warehouse manages the movement of inventory under its control.	85	2.2812	1.25407
Improving the efficiency of the entire work area is achieved by improving logistics, thus reducing throughput time and inventory.	85	2.1979	.69008
The material requirements planning system makes materials available for production and products can be delivered to customers.	85	2.0729	.99731
Logistics processes include procurement, production, shipping, distribution, and all related transportation, storage, and handling processes.	85	2.3646	.98536

Warehouse management system

According to Table 4 below on transportation and supply chain operations, the study found that an average of 2.87 people agreed that the warehouse management system optimizes control. Inventory control, warehouse management systems facilitate maximum use of storage space, this is bet by an average of 2.34 respondents, respondents with a median of 2.09 agree that the warehouse management system helps to reduce picking errors.

Table 4: Warehouse Management

	N	Mean	Std. Dev.
Warehouse management system helps to reduce picking errors	85	2.0938	1.50142
Warehouse management system facilities the maximum use of storage space	85	2.3438	1.67852
Warehouse management system helps to optimize stock control	85	2.8750	1.52350
Warehouse management system improves work productivity	85	1.3958	.49160
Warehouse management system guide workers through risk assessments and flag up warehouse safety requirements	85	1.8125	1.40160

Supply chain performance

This observe attempted to set up how effective the enterprise deliver chain in Kiamba County and the enterprise relying at the enterprise. The records under agreed that eight respondents had been very critical to degree overall performance within side the enterprise`s deliver chain management. Researchers have now no longer agreed to have fifty nine respondents agreed to respondents if the deliver chain is enough to beautify the productiveness of the deliver chain, and 12 respondents did now no longer trust quite a few respondents that had many respondents had been impartial and no confidence. If there may be a reliability degree that contributes to the green characteristic of the overall performance of the enterprise's deliver chain, 22 human beings agreed to the assertion of forty eight respondents strongly, and 12 respondents had been impartial and 7 respondents did now no longer agree. It additionally does now no longer agree with the aid of using classification. Respondents had been requested to signify whether or not there are bendy structures in vicinity that correctly facilitate Kenya's deliver chain. and six agree, strongly agree, impartial, strongly disagree and agree, respectively.

Multiple regression results

In Table 5, the dependent variable for the other predictor below contains information about the

amount of dispersion described by the variable above the predictor. The first statistics are .949A's first statistics, which are multiple correlation coefficients between all variables and dependent variables of the predictor. The cost of the model. 949A indicates that there are many dispersions separated by independent variables and dependent variables. R - simply a square value of R, which explains the excellent inactivity or dispersion amount described by the above predicted variable set. In this case, the value. 900 indicates that 90% of the dispersion of the dependent variable have been described by the independent variable of the model.

Table 5: Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.900	.885	.46852

Predictors: (Constant),
a. Warehousing system,
b. Material Handling,
c. Transportation System,
d. Information Integration

Table 6: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	181.045	4	45.261	205.230	.000[b]
	Residual	20.069	91	.221		
	Total	201.115	95			

b. Predictors: (Constant), Warehousing system, Material Handling, Transportation System, Information Integration

ANOVA analysis was used to determine the given values to use the regression model. The result showed that the value of f-significance was 0.000b. The value showed that the regression model has a probability of 0.000 to make an incorrect prediction, so it is effective in producing real results. ANOVA is used to determine if the model fits the data. F calculated was 205.23 while the F critical was 2.522. The p value was 0.000. Since the F calculated was greater than the F-critical and the p value 0.000 was less than 0.05, A model is considered a good fit to the data. Therefore, this model can be used to predict the impact of warehouse systems, material handling, transportation systems, and information integration on the performance of milk processing enterprises.

The regression model was as follows:

$$Y = 0.316+0.331X1 + 0.387X2 + \varepsilon$$

From the finding's, warehousing system has a significant effect on dairy processing firms β1=0.331, p value= 0.002). The link was considered significant since the p value 0.002 was less than the significant level of 0.05. The study findings are in line with the findings of Kimaiyo & Ochiri, (2014) who indicated that there is a very strong relationship between supply chain and performance of dairy processing firms, since β1=0.387, p value= 0.000). The relationship was considered significant since

Study coefficients

Y (Supply Chain Performance) = 0.095 (Constant) + 0.461 (Information Integration) + 25.479 (Shipping System) + 6,374 (Processing) + 3.414 (Inventory Management) + 0.206 (Consumer Error) standard).

According to the regression equation, information integration is the most important variable for supply chain performance, contributing 61.21% to supply chain performance, followed by processing with 52.14%. Warehousing system and transportation system.

The regression equation showed that there is a significant relationship between information integration and supply chain (p = 0.000); there is a significant relationship between the transportation system and the performance of the supply chain (p = 0.000); There is a significant relationship between the warehousing system and the performance of the organization (p = 0.001).

Table 7: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.095	.206		.461	.646
	Information Integration	1.321	.052	1.098	25.479	.000
	Transportation System	-.438	.069	-.274	-6.374	.000
	Material Handling	.180	.097	.072	1.861	.066
	Warehousing system	-.174	.051	-.140	-3.414	.001

a. Dependent Variable: Supply chain performance

CONCLUSIONS AND RECOMMENDATIONS

In terms of supply chain management, the regression coefficient was found to be significant. This means that supply chain management makes a difference in company operations when all factors remain constant. This can be explained by the existence and development of strategic supplier relationships between dairy farmers and their key suppliers. This may also be due to more efficient capacity utilization by dairy processing companies. Dairy processing companies recognize farmers as partners and engage in supplier development to promote capacity utilization. An important relationship reported about the leadership of the tilt shares. Managing the personnel management of all other factors that is permanently different from that of Lynn Inventory is permanently causing solid performance. This study concluded that the correct and regular data flows required for the flow of the system. Information integration shares data with power chain data power, helps display data for dimension and location, transaction, and data measurement data, logistics status data. Traffic system has been signed that the traffic system has a positive impact on the production of dairy products. In the future of this; The dairy company government has found a way to create a satisfactory tool to meet the transportation of terms and factors to update the performance of the entire structure of the production network. Therefore, the decentralization implementation increases. In securities management, the study has created a significantly positive relationship between supply reserves and supply chain performance.

Transportation management plays an important role in creating more competitive advantages for businesses in terms of customer support and business performance. Effective logistics management often ensures that logistics and supply chains run smoothly.

This study made recommendations based on the results and conclusions of the study. In particular, the recommendation was divided into two parts, including not only project performance, but also for further research on project performance, including recommendations for improvement and intent. This survey also includes warehouse management for an important plan for Kenya's dairy company. Warehouse management is evidence in the survey,

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

ensuring costs of cost, ensure complete use of assets, reducing the loss of data, increasing the nature of the generation, limit the inertia of the dairy plants, and increase the benefits from the customer of this method, it is buried as money but money.

Suggestion for further research

Kenya's Dairy Company's Research recommended manager must include an important agreement and interest in data innovation that can easily implement the company's progress and excellent data supply chain data supply chain. In addition, the test also specified the speculation for data structures for the administrator of dairy tasks to achieve quality items and reduce product change costs. This test specified that the supervisor of the dairy product is to protect the transportation system, for example, to protect the transportation system and the acquisition of the crude material and the total performance of the crude material and the subject price of the common industry, Time decreased to attach the effect of production and supply chain. This study was limited to KAMAB dairy technology companies in store management practices and productivity. Additional studies have been subject to the impact of logistics management methods for the implementation of other organizations such as manufacturers, service companies and companies, so that comparisons can be performed in conclusions.

REFERENCES

Adeyemi, S.L., and Salami, L.O. (2010). Inventory Management: A Tool of Optimizing Resources in a Manufacturing Industry. Journal *of Social Science, 23(2); 135-142.*

Bachetti, A., Plebani, F., Saccani, N. & Syntetos, A.A. (2010).*Spare Parts Classification and Inventory Management: A Case Study. Global Thinking, Sustainable Practice, Professional Success*. University of Salford, Manchester: Salford Business School.

Barney, J.B. (2012). Purchasing, Supply Chain Management and Sustained Competitive Advantage: The Relevance of Resource-Based Theory. *Journal of Supply Chain Management, 48(2), 3-6.*

Barney, J.B., Wright, M., & Ketchen, D.J. (2001). The Resource-Based View of the Firm: Ten Years after1991. *Journal of Management, 27, 625-641*.

Barratt, M. & A. Oke (2007). Antecedents of Supply Chain Visibility in Retail Supply Chains: A Resource-Based Theory Perspective. *Journal of Operations Management, 25(6), 1217-1233.*

Bassin, H. (2014). Multi-item Inventory Control: A Multi Criteria View. *European Journal of Operational Research,* 87, 685-692.

Beamon, B.M. (2019).Measuring Supply Chain Performance. *International Journal of Operations & Production Management 19(3), 275–292.*

Borg, W.R., & Gall, M.D. (2019).*Educational Research: An Introduction (5th ed.)* New York: Longman

Bowersox, D.J. (2002). Supply Chain–Logistics Management*. International Edition.* USA: McGraw Hill. [Google Scholar]

Brason, S. (2015).*Strategic Operations Management, (2nd ed.)* Butterworth, Heinemann, UK.

Browne J., Harben J. and Shivnan J., (2016).Production Management Systems: An Integrated Perspective, Second Edition, Addison-Wesley Press.

Chen I.J, (2005). Towards a Theory of Supply Chain Management: The Constructs and Measurements, *Journal of Operations Management, 22(2); 119–50.*

Cooper, D.R. & Schindler, P.S. (2013).Business Research Methods (8th Ed.) McGraw-Hill: New York.

Cooper, D.R. and Schindler, P.S. (2011).Business Research Methods (9th ed.). New Delhi, India: Published by Tata McGraw Hill Education Private Limited. 45

David, B. (2017). The Why of Inventory Management. Pearson Education Ltd. England

Dimitrios, P. (2018). The Effect of Inventory Management on Firm Performance. *International Journal of Productivity and Performance Management*, 57, 215-223

Frahm, S. (2013). Vendor Managed Inventory (VMI): Three steps in making it work, http://scm.ncsu.edu/scm-articles/article/vendor-managed-inventory-vmithreesteps-in- making-it-work

Goldratt, I. (2014). *Procurement Principles and Management*. Harlow: Pearson Education.

Halldorsson, M. (2017). Aligning Supply Chain Strategies with Product Uncertainties. California Management Review, 44(3), 105-19.

Handfield, B. (2012). Introduction to Supply Chain Management; London; Prentice-Hall International Management. *Strategic Management Journal, 18: pp. 515.*

Henry, K. (2010), "Research Methodology and Practices", Jomo Kenyatta Printers.

Hugo, M. Etim, J.J. & Eckert, S.G. (2018). Inventory Management and its effects on Customer Satisfaction. *Journal of Public Policy*, 3.

Hutchins, D. (2017). Just In Time. UK: Gower Publishing, Ltd. [Google Scholar]

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.

Kaplan, R.S. and Norton, D.P. (2010). "Strategic Supply Chain Performance Measurement in Non-profit Organizations", Nonprofit Management and Leadership, Vol. 11 No. 3, pp. 353-70.

Kaplan, R.S., & Norton, D.P. (2015).The Balanced Scorecard –Measures that Drive Performance. Harvard Business Review, 71.

Kazim, S. (2018). Inventory Inaccuracy and Performance of Collaborative Supply Chain practices. Industrial Management and Data Systems, 108, 495-509.

Ken, L. (2010). Management Information. Systems, Managing the Digital Firm, Pearson Education Ltd. New Delhi, India4). Technology Adoption in Developing Countries, Oxford University Press.

Kisioya, D. K., & Moronge, M. (2019). Influence of material handling practices on performance of large scale manufacturing firms in Nairobi County, Kenya. *The Strategic Journal of Business & Change Management, 6 (4), 745 – 760.*

Kleijnen, J.P.C., and Smits, M.T. (2013).Performance Metrics in Supply Chain Management, Journal of the Operational Research Society, Vol. 54, No. 5.and pp.507–514.

Kolarovszki P. and Vaculík J. (2013) Study on Warehouse Management Systems based on selected automatic identification technology in Slovakia. *International Journal of Productivity and Performance.*

Kombo, D.K., and Tromp, D.L.A. (2016). Proposal and Thesis Writing: An Introduction. Paulines Publications Africa, Don Bosco Printing Press, Nairobi Kenya.

Kushwaha, G.S. (2011). Competitive Advantage through Information and Communication Technology (ICT) Enabled Supply Chain Management Practices. International Journal of Enterprise Computing and Business Systems, 1(2), 2230-8849.

Lee Chang Won, Ik-Whan G. Kwon and Dennis Severance (2007) Relationship between supply chain performance and degree of linkage among supplier, internal integration, and customer, Supply Chain Management: *An International Journal*, Volume 12: 444–452

Lemma, H., (2015).*Determinants of Supply Chain Coordination of Milk and Dairy Industries in Ethiopia: a case of Addis Ababa and its surroundings*. India, Punjabi University.

Letinkaya, S., & Lee, C.Y. (2010).Stock Replenishment and Shipment Scheduling for Vendor- Management Inventory System Management Science, 46(2): 26-32.

Loice, K., & Ronald, B. (2011).*Effect of Entrepreneurial Supply Chain Management Competencies on Organizational performance in Manufacturing Firms, Nairobi County, Kenya.* Retrieved from: http://ir.mu.ac.ke:8080 /xmlui/bitstream/handle /123456789/1663/Effect%20of%20entrepreneurial% 20supply%20chain%20management%20competencies %20on%20 organizational %20performance%20in%20 manufacturing%20firms,% 20 nairobi %20 county,%20 kenya.pdf?sequence=1.

Lyson, K. (2016). Purchasing and Chartered Institute of Purchasing and Supply, London: Pitman Publishing.

Mathae, R. K., Paul, S. N. & Mbura, L. K. (2018). Effect of bullwhip on performance of milk processing firms in Kenya, *International Academic Journal of Procurement and Supply Chain Management, 3(1), 58-84*

Mazanai, M.N. (2012). Impact of Just-In-Time (JIT) Inventory System on Efficiency, Quality and Flexibility among Manufacturing Sector, Small and Medium Enterprise (SMEs) in South Africa. *African Journal of Business Management,* 6(17), 5786- 5791.

Mentzer, J.T. (2014). Fundamental of Supply Chain Management, Thousand Oaks, California: SAGE Publications.

Mentzer, J.T., Min, S., & Zacharia, Z. G. (2018). The Nature of Inter-firm Partnering in Supply Chain Management. *Journal of Retailing*, 76(4), 549–568.

Miller, R. (2010). Inventors Control: Theory and Practice. New Jersey: Prentice Hall.

Mugenda O, Mugenda, A. (2013). *Research Methods Quantitative and Qualitative Approaches*. Nairobi Acts press.

Mukopi, M.C.P. and Iravo, M.A. (2015). An Analysis of the Effects of Inventory Management on the Performance of the Procurement Function of Sugar Manufacturing Companies in the Western Kenya Sugar, *International Journal of Scientific and Research Publications*, 5(5),1-14.

Nsikan, E.J. Etimb, J.J. and Imec, T.U. (2015). Inventory Management Practices and Operational Performance of Flour Milling Firms in Lagos, Nigeria, *International Journal of Supply and Operations Management*, 1(4), 392-406.

Ogbo, A.I. (2011). *Production and Operations Management*. Enugu: De-verge Agencies Ltd.

Okore, C. A., & Kibet, Y. (2019). Influence of information sharing on supply chain performance in the tourism industry in the county government of Kakamega, Kenya. *The Strategic Journal of Business & Change Management*, 6 (2), 66 – 81.

Olhager, J. Persson, F., Parborg, B. and Rosen, S. (2002). Supply Chain Impacts at Ericsson-from Production Units to Demand Driven Supply Units. *International Journal of Technology Management*. Vol., No. 1/2/3.pp40-59.

Ondiek, G.O., &Odera, O. (2012).Assessment of Material Management in Kenya Parastatals in Kenya. *Journal of Business Studies Quarterly*, 3, 40-49.

Patlins, P. (2016). *Efficient transportation in cities and perishable goods secondary packaging. In proceedings of the international scientific conference*. Latvia University of Agriculture.

Potilen, T., & Goldsby, T. (2013). Vendor-Managed Inventory and Supplier-Managed Inventory Programs: How Economic Value Added can help sell the Change. *International Journal of Physical Distribution and Logistics Management*, 33(7), 689- 707.

Rolf, G., & Poluha (2017). Application of the SCOR Model in Supply Chain Management by Review by: Leroy B. Schwarz *Interfaces* Vol. 38, No. 5 (Sep. - Oct., 2008), pp. 414-416.

Sander, L., Matthias, H., & Geoff, W. (2010). The Impact of Decentralized Control on firm-level Inventory Evidence from the Automotive Industry. *International journal of Physical Distribution and Logistics Management,* 41, 435-456.

Simchi-Levi, D. (2019). Designing and Managing the. Supply Chain, Tata McGraw Hill Publishing Company Ltd New Delhi.

Smaros S.J., Lehtonen, J.M. Appelquist, P. & Holmstrom, J. (2013). The Impact of Increasing Demand Visibility on Production and Inventory Control Efficiency. *International Journal of Physical Distribution and Logistics,* 33(4), 445-465.

Spendolini Michael, J. (2012). *The Benchmarking Book.* Pp. 59-65

Tozay G. J. (2012). *Warehouse location and design decisions among large scale large manufacturing firms in Nairobi, Kenya*; Research Project, University of Nairobi.

Waters, C. (2013). *Inventory Control and Management*. 2nd ed. Chichester, England

Watson, N. (2010). *Strategic Supply Chain Planning & the Role of Forecasting, Research Associate.* CTL, MIT.

Wernerfelt, B. (1984). *A Resource-Based View of the Firm. Strategic Management Journal,* 5(2), 171-180.

Wijnands, J.H., and Ondersteijn, C. (2006), *Quantifying the Agri-food Supply Chain,* Springer. Dordrecht.

Wolcott, H. (2010). *Logistics and Supplies Management.* Pearson Education Ltd. England

Zipkin, P. (2010). *Foundations of Inventory Management*. New York: McGraw-Hill.