LOGISTICS MANAGEMENT STRATEGIES AND PERFORMANCE OF FOOD AND BEVERAGE FIRMS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The current world business environment has undertaken several changes creating more and more complexities and uncertainties. In the changing environment which characterizes the global economy today, firms face severe competitive pressure in doing business better, faster, and low priced to cope with the growing number of challenges arising from the environment and increase their ability to adapt. Logistics is a core activity with implications on the operations of an organization together with being an activity which cuts across all the departments in an organization. The main objective of the study was to analyze the influence of logistics management strategies on the performance of food and beverage firms in Nairobi city county, Kenya. The specific objectives of the study were to establish the influence of fourth party logistics, virtual logistics, logistics collaboration and reverse logistics on performance of food and beverage firms in Nairobi City County. Descriptive research design was used and a census sampling technique with a target population of all the 86 food and beverage firms in the Nairobi County, Kenya registered under the Kenya Association of Manufacturers as at December 2022. The head of logistics from each firm were the focus unit of perception. Primary data was collected by use of questionnaires. A pilot test was conducted to determine the validity and reliability of the data collection instrument. Collected data was analyzed with help of Statistical Package for Social Sciences (SPSS) Version 24 using descriptive statistics including frequencies, percentages, mean and standard deviation and inferential statistics which include regression and correlation analysis. The analyzed data was further presented in tables and figures. The study findings revealed that there exists a relationship between logistics management strategies and performance of food and beverage firms with a positive correlation coefficient between fourth party logistics ($r=0.176$), virtual logistics ($r=0.086$), logistics collaboration ($r=0.187$), reverse logistics ($r=0.447$) performance of food and beverage firms. The study concluded that use of fourth party logistics strategies, virtual logistics, logistics collaboration and reverse logistics strategies had a positive influence on the performance of food and beverage firms. The study further recommended the need for adopting fourth party logistics strategies, virtual logistics, logistics collaboration and reverse logistics strategies as this will boost performance of the food and beverage firms and lead to business success.

Keywords: Fourth Party Logistics. Virtual Logistics, Logistics Collaboration and Reverse Logistics.

Introduction

In the modern world, the market conditions have forced industries to increase their operation efficiency and effectiveness and also many firms have begun to see the development of a competitive supply chain as a matter of market survival rather than a choice (Dello & Schiraldi, 2013). Globalization further has pushed companies towards a challenging objective of increasing the range of new, fresh and high-quality products while guaranteeing effective customer service with the growing unpredictability in customer purchasing behavior (Pratapwar, 2016). This has led to the supply chain function as a center of interest in facilitating firm's performance to attain the overall organization goals (Grandia, 2015).

Manufacturing firms in Kenya have however been experiencing weak and poor supply chain practices hence making them less competitive in the market and attracting less customers therefore reducing their ability to contribute to the realization of the country's Vision 2030 (GOK, 2017). Logistics management strategies have however been projected to have capability of significantly improving organizational operation performance for achieving its competitive advantage (Ferdows, 2008). The study therefore aims to investigate the influence of logistics management strategies on performance of food and beverage firms based in Nairobi City County.

Logistics management strategies according to Hill (2017), are sets of guiding principles and driving forces that help a firm coordinate plans, policies, and goals between different supply chain partners to enhance its operation efficiency in a cost- effective manner. The logistics management strategies involve the degree which the manufacturing firms structure their organizational practices, strategies and processes into collaborative, synchronized processes to fulfill their customer needs and interaction with suppliers (Zhao, 2011).

According to Giulia (2013), there is evidence of success stories from operationalization of logistics management strategies around the globe. For example, Walmart's use of integrated logistics management strategy is the key driver of its growth and expansion from a retailer in Rural Arkansas to a global leader. This is through a decision-making system that relied much in analysis of data through bar coding systems, point of sale systems, and real time data collection system (Mark, 2012). The global leadership position of Walmart in the retail industry has resulted from their efficient logistics management strategies in their automated distribution centers, successful tracking systems, computerized inventory systems and innovative cross- docking logistics practices whereby delivery from inbound to outbound trailers without intermediate storage (Traub, 2012). According to Lee (2014), it is not enough for the Walmart Company to maintain a sustainable competitive advantage over its rivals and that not only Walmart, all companies need to redesign their supply chain and logistics strategies that is not just on basis of cost efficiency, but with all qualities of agility, incentive alignment and adaptability.

According to Kantars MFCG brands report of (2018), the coca- cola products are almost everywhere in the world, and over 10,000 coca- cola products are consumed globally per second. The credit for this success is attributed to their mammoth supply chain network and strategic logistics processes enhancing their seamless operations in the world. In the US, Coca- cola focused on real- time visibility by partnering with the solution providers to integrate GPS enabled logging devices to their delivery trucks, successful warehouse and distribution management information system for better visibility into its logistics operations by use of reliable data to communicate better with their strategic partners which include transportation companies that are in charge of their deliveries across the global supply market.

The African region is split into five economic regions which have created a growing demand for logistics management strategies among manufacturers and retailers that aim to expand their operations and improve their supply chain networks (Solistica, 2019). The East African zone is considered as the most structured and regulated logistics hub in Africa. With the membership of the East African community countries, the region shows the highest level of fast-growing commercial logistics integration (Adewole, 2019). As a landlocked country, Ugandan firms however face higher logistics and trade costs than its coastal partners Kenya and Tanzania which makes Uganda's economic performance intensively logistics depended (Chemutai, 2018). Superior logistics strategies would therefore offer Uganda firms improved potential for economic gain. According to Trademark East Africa (2018), Uganda's businesses still face a variety of high-level risks including lack of private sector logistics management strategy, bureaucracy in setting up logistics operations, poor transport facilities and weak adoption of strategic logistics practices.

The road transport is traditionally the most common mode of transport and distribution in the Kenyan logistics industry as a result of its flexibility. With the increasing markets and collaborations in the East African countries like Tanzania, Uganda, Rwanda, Burundi and even Congo, Phenomenal growth has been experienced over time which has created logistics and distribution opportunities to the industry players (Short, 2010). Kenya's logistics cost ranges from 18% to 30% of product value as compared to benchmarks of around 8% of product value in OECD (SCEA, 2018). There have been various strategies by the government to cut down the costs related to transport and logistics for example of the SGR in 2017, vast road networks across the country, construction of inland container deport in Nairobi and seamless adoption of technology in various government clearing agents such as the KWATOS system by KPA and ICMS by the Kenya Revenue Authority (NCTTCA, 2019). Logistics technology such as installation of GPS in delivery trucks has been adopted by various firms to avoid taking of erroneous routes in new supply territories and the use of transport management systems for route scheduling, fleet tracking and tracing loading orders (McKenna, 2011).

According to Kyusya (2015), the emergence of third- and fourth-party logistics service providers in the country has seen many large firms outsource their logistics services for effective countrywide delivery of their products. For example, Kuenhe + Nagel Kenya 4PL provider has been contracted by many Kenyan fresh chain firms, boosting their customer satisfaction objectives though real-time visibility, logistics automation, predictive logistics analytics and supply chain integration. The global logistics solutions provider DHL Kenya also provides 3PL to firms like the East Africa Breweries Limited, which is one of their key service providers in implementing their MOVE strategy to deliver an integrated, seamless, and agile logistics network from end of packaging line to the distributor (Adisa, 2017). The coca- cola company has dominated the Kenyan market for a long time, outshining most competitors like Softa and Pepsi companies due to their embracement of various logistics management strategies like reverse logistics for their packaging bottles, logistics collaboration with their six key bottle suppliers and logistics providers, strategic location of their warehousing and distribution centers (Nyangara, 2011). Embracing the various logistics management strategies in the Kenyan Logistics sector has placed Kenya in the 68th position globally out of 160, from a logistics performance index report (2018) by the World Bank.

As per the Kenya Association of Manufacturers KAM (2022), the total registered F&B firms in Kenya is 217. The study focused on the Nairobi City County since it is where most of them are based, both local and multinational firms. It is the largest sector in the country which constitutes 22% of the total KAM membership. The sector constitutes of alcoholic beverage and spirits, bakers and millers, cocoa, sugar and chocolate confectionery, dairy products, juice, water and carbonated

soft drinks, meat processing, tobacco and vegetable oils sub- sectors (KAM, 2018). The food and beverage sector is a key driver in economic growth in Kenya, and a growth in the sector can have a direct and significant influence on the overall economy growth (Okello, 2010). In terms of contribution to the Kenyan GDP, the food and beverage sector contributed 3.5% of the overall GDP in 2017 with the exports from the sector valued at ksh 254,686 million and imports ksh 245,280 million in the same year (KAM, 2018).

The sector has however recorded decline in performance over time and inconsistencies in the supply chain processes characterized by shortages, product safety scares and other disruptions (Kam, 2017) leading to poor customer service and high operation cost because of logistics related issues (Okello, 2018). This has created doubt on the sector's ability in realization of the country's projected vision 2030 and the big 4 agenda (RoK, 2017). This therefore calls for a new approach to improve on the sector's performance and according to Giulia (2018), logistics management strategies have been projected to positively influence firm's performance hence this study.

Statement of the Problem

Food and beverage firms in Kenya have reported inefficiencies in several areas ranging from customer service to high operation cost (Okello, 2018). For example, most manufacturing firms in Kenya operate at a technical efficiency of about 59% as compared to their counterparts in Malaysia with 74% range (Achuora, Odhiambo, Guyo, Arasa, 2015). This raises doubts about the sector's capacity to meet the country's vision 2030 goals (RoK, 2017). Further, World Bank (2017) reported that manufacturing firms in East Africa- Kenya included spend up to between 40% and 60% of logistics related operation costs compared to firms in the United States of America which spend about 6% on similar activities. This has heavily contributed to non- competitiveness of the sector's growth and contribution to the country's Vision 2030 realization (Muteshi, Owino and Kitiashi, 2018).

Despite the government's efforts to uplift the manufacturing sector's performance through various initiatives like the Kenya industrial Transformation program (KITP), buy Kenya build Kenya strategy, there has been a challenge of increased product costs as compared to the cheap imports from other global markets and inefficient market access for locally processed products to the local, regional, and international markets (KAM, 2020). According to the Kenya National Bureau of statistics (KNBS) economic survey report (2021), the food and beverage sector market share in Kenya stood at 44.58% in 2015, 45.09% in 2016, 47.95% in 2017, 47.66% in 2018 and 44.22% in the year 2019. Further, the food and beverage sector constituted of the largest share of the Kenyan exports accounting for 46.4% in 2020, as per the KAM report 2022. Despite the dominance of the sector, there has been a decline trend in the Kenya's overall economic growth contribution compared to the previous years (2018 and 2017). Bor (2020) opines that the weak performance can be attributed to high operation costs hence there is a need to investigate the relationship between logistics management strategies and performance of food and beverage firms in Kenya. According to Chirchir (2018), there is a major problem in coordination of operations in Kenya to achieve efficiency and customer satisfaction hence need for efficient logistics management strategies.

Empirical studies investigating the existence of logistics management strategy initiatives are limited especially in the food and beverage industries. Examples of these include Sasho and Natasha (2017) on the influence of logistics management strategies on firm performance in Macedonia and Azeem (2018) who examined on the impact of effective strategic logistics management on firm performance and studies by Abdul *et al* (2019), which found a positive

relationship between logistics strategies and firm performance. Locally, Mogaka and Arani (2020) also studied on logistics strategy as a tool for firm performance, which recommended further exploration of logistics strategy as it relates to expected and actual performance moderated by effectiveness of customer service. Most of the above studies were conducted on firms dealing with non-food and beverage products. The food and beverage firms could be different, therefore this study seeks to establish the relationship between logistics management strategies and performance of food and beverage firms based in the Nairobi City County, Kenya.

Objectives of the Study

The general objective of the study was to establish the influence of logistics management strategies on performance of food and beverage firms in Nairobi City County, Kenya. The specific objectives of the study were:

   i.   To establish the influence of Fourth party logistics on performance of food and beverage firms in Nairobi City County.
   ii. To assess the influence of virtual logistics on performance of food and beverage firms in Nairobi City County.
   iii. To determine the influence of logistics collaborations on performance of food and beverage firms in Nairobi City County.
   iv. To explore the influence of reverse logistics on performance of food and beverage firms in Nairobi City County.

LITERATURE REVIEW

Theoretical Framework

Agency Theory

Agency theory relates to relationships between two parties where one is the principal, and the other party is the agent who represents the principal in transactions with third parties (Gore, 2012). This relationship arises from the fact that these two groups of individuals have similar concerns and goals for the business in question and is therefore likely for problems to erupt when these goals are not aligned. Mahaney and Lederer (2013) states that agency theory is relevant for situations where one party delegates authority in terms of control and decision making about certain tasks to another party.

In the recent past, supply chain scholars have shown interest in using agency theory to show how participants in the supply chain manage risks, forge relationships, and align incentives (Shook, 2019). Mulama, (2012) asserts that the application of agency theory provides a justification for the establishment of relationships between organizations and their outsourced service providers, which is very important as far as the establishment of a long-term relationships is concerned especially in 3rd and 4th party logistics. In the supply chain, agency relationship arises when the firm hire a third party (agent) for the day-to-day operations of a supply outlet and some services delegated to the new decision-making authority like in the 4PL providers (Perryman, 2012).

Process Virtualization Theory

Many processes that have been conducted in physical environments are being transferred to virtual environments made possible by use of the internet (Watson, 2018). The process virtualization theory is designed to explain why some processes are suitable to be conducted in a virtual environment than others (Overby, 2018). The process virtualization theory posits that process

characteristics (sensory requirements, relationship requirements, synchronism requirements, and identification and control requirements) and information technology characteristics (representation, reach, and monitoring capability) influence how suitable a process is conducted virtually (Fuller & Denis, 2019).

Overby (2018) defined a virtual process as process that physical interaction between people or objects have been removed. Process virtualization can be measured as adoption of virtual process or the quality outcome that is achieved because of a virtual process. Process virtualization theory is applicable in different disciplines including virtual logistics. Use of internet technologies allow logistics processes to use virtualization in the supply chain function (Verdouw, 2015). This allows logistics players to monitor, plan, control and optimize business processes remotely in real- time via the internet, based on virtual objects instead of on- site (Thakur, 2016). Virtual logistics uses the process virtualization theory by building on product traceability systems that provide the information to track location of the items and trace its history virtually (Kassahun, 2016).

Network Theory

The network theory is one of the grand theories for purchasing and supply management which have been introduced during the last decades mainly considered to describe the relationships in which companies, suppliers, customers or buyer are engaged (Harland, 1996). The theory was first introduced during the 1970s and the 1980s and developed from the focus on relationships between just two entities, or strategic alliances, towards an approach which entails multiple relationships between different counterparts throughout the supply chain (Chang, 2012). According to Peterson and Waters (2010), in the current competitive business environment no organization can operate in isolation, but also acts as a customer while buying goods and services from suppliers for their own manufacturing processes.

Thorelli (2016) states that network refers to two or more organizations involved in long-term relationships and strategic alliances. Network theory is therefore based on collaborations in logistics and supply chain networks seen as beneficial for firms embedded through the investments of the other counterparts involved in the process (Hakansson and Ford, 2012). The network theory explains how firms in logistical collaborations enhance their business operations in the market. To establish a strong position, occupying a central position in supplier partnership and collaboration within a supply chain network enhances the awareness for resources and capabilities attainable within a supply network and further enhance a positive impact on coordination between the firm and its suppliers (Bernardes & Zsidisin, 2016).
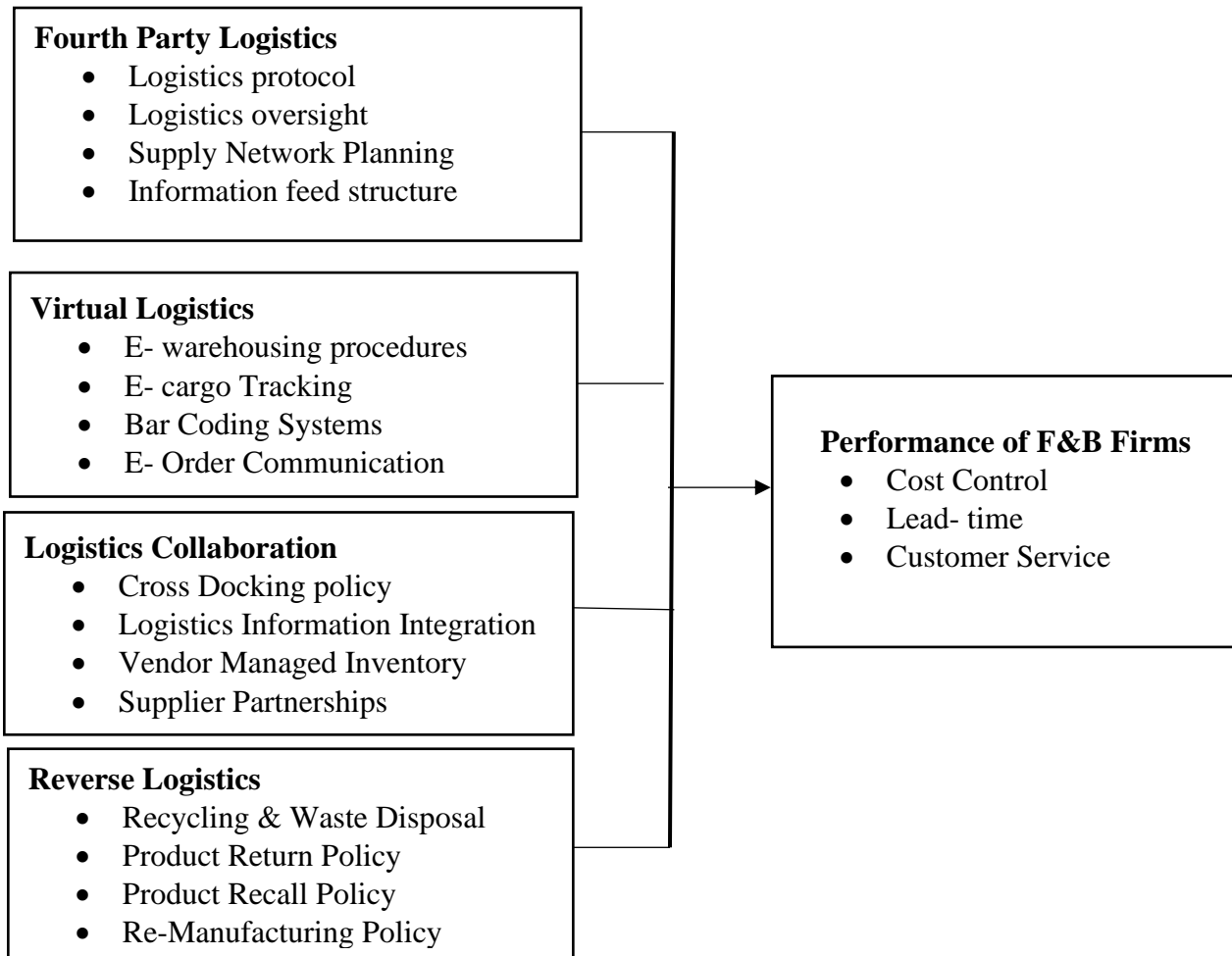
Stakeholders Theory (ST)

According to a definition by Freeman (1984), stakeholders are individuals or groups who are impacted by commercial activities of a firm. The stakeholder theory notes that other than firm stakeholders, there are other individuals or groups that the firm is obligated to and are likely to be directly affected by the firm's actions or with contractual relationship with it (Alkhafaji, 2011). The success and survival of a firm is a result of its capacity to establish and maintain sustainable relationship with its stakeholders' network (Tofel, 2015). Some firm stakeholders expect that firms will operate in ways that minimize environmental externalities such as water pollution, solid waste disposal, forest cover depletion, and emission of environmentally harmful gases and assume greater responsibility in correcting environmental effects that occur (Barney, 2016).

According to Hervani, Helms and Sarkis (2015), sustainable logistics practices such as reverse logistics directly contribute to the realization of stakeholder's interests of cost reduction, clean

environment, and quality enhancement. In this sense, Sidell (2017) stressed that reverse logistics is important for different pressuring groups and the requirements of different firm stakeholders like suppliers, customers, government, and others can be seen as instigators of reverse logistics. Different stakeholders have various claims which the firm can satisfy through reverse logistics activities (Post, 2015). For instance, customers may claim longer warranty periods resulting in returns and repair activities and recycling practices may satisfy NGOs demand for environmental protection.

Conceptual Framework

Fourth Party Logistics
- Logistics protocol
- Logistics oversight
- Supply Network Planning
- Information feed structure

Virtual Logistics
- E- warehousing procedures
- E- cargo Tracking
- Bar Coding Systems
- E- Order Communication

Logistics Collaboration
- Cross Docking policy
- Logistics Information Integration
- Vendor Managed Inventory
- Supplier Partnerships

Reverse Logistics
- Recycling & Waste Disposal
- Product Return Policy
- Product Recall Policy
- Re-Manufacturing Policy

Performance of F&B Firms
- Cost Control
- Lead- time
- Customer Service

Independent variables   **Dependent Variable**

Figure 1: Conceptual Framework

Empirical Review

Fourth Party Logistics and Performance of Food and Beverage Firms

The rapid changes in the logistics function and the growing complexity of customer demand and emerging technological advancements require collaboration with new and more advanced forms of logistics service providers (Pavlic, 2017). Several studies have been carried out on the influence of fourth party logistics on firm performance. Kalkan and Cuhadar (2020) explored on 4PL as a median and supply chain agility. The aim of the study was to examine the relationship between fourth party logistics capabilities and firm performance. The results of the study indicated that

firms benefit greatly if they consider contracting 4PL service providers in conjunction with their supply chain strategy. In their study, Cezanne and Sagliet, (2015) examined the role of 4PL on redefining the boundaries of the firm. The study concluded that incorporating a 4th Party approach in the logistics strategy approach enables to deliver distinct skills and new technology to the firm's in-house operations in business performance optimization in the market.

A study by (hingley & Lindgreen, 2011) explored the relationship between use of 4PL management and performance among grocery retailers, which used an explanatory research design and established that 4PL function enhances increased utilization of assets and marketability of more environmentally sound distribution management approaches. Liu and Zang (2015) further added their voice in their study on robust optimization of 4PL network design under disruptions. The purpose of the study was to construct a 4PL network that can provide satisfactory customer service at lower cost when disruption strike. The study concluded that there is a positive significant effect on supply chain performance by evading market risks effectively and reduced logistics cost when 4PL network design is applied.

Virtual Logistics and Performance of Food and Beverage Firms

Clarke (2015) investigated the relationship between virtual logistics and firm performance using a descriptive research design. The study established that in long-term, the application of virtual logistics concept could lead to increased efficiency of logistics operations and reduced lead- times. The study further suggested a possibility of environmental benefits as a result of better coordinated goods flow especially in city centers. A study by Dobrzynsk (2014) explored the concept of virtual logistics on performance of firm supply chains. The study was based on the elements of virtual stockholding, virtual storage, virtual distribution channels, virtual trading systems and virtual delivery. The study concluded that the virtual logistics elements enhance performance of many logistics operations by reduced delivery time, product accessibility and reduced time in customer order processing.

Remondes, (2015) studied the use of virtual logistics systems on materials demand and supply planning for supermarkets in Chile and the results were that virtual logistics systems in inventory management helped supermarkets to effectively reduce inventory levels and achieve corresponding economic benefits to the firms and the economy. According to recent research by Aziz and Hameed (2019) on the contributing factors towards virtual logistics on customer satisfaction on Pakistan firms, it was observed that virtual logistics is one of the key elements in the growth of Pakistan economy, and it enhances customer satisfaction level.

Logistics Collaboration and Performance of Food and Beverage Firms

Byrne, Panahifar and Salam (2018) conducted a study on logistics collaboration and firm performance. The purpose of the study was to assess the interrelationships between various characteristics of information sharing and trust among supply chain partners and their criticality for effective information centered logistics collaboration initiatives and its effect to overall firm performance. The study findings indicated that three logistics collaboration enablers including trust, information readiness and secure information sharing significantly influence on firm performance. Sandberg (2017) investigated the relationship between logistics collaboration and firm performance using a descriptive research design where the study established that there was a positively significant effect of logistics collaboration strategies on firm performance. The study recommended that firms should use logistics collaboration practices such as supplier partnerships and information sharing to enhance supply chain efficiency, effectiveness and market positioning for the firm's products and services.

Pateman, Cahoon and Chen (2016) in their study explored on the role of collaboration in the logistics industry and performance in Australia, where the study targeted 32 respondents who were senior managers in the Australian logistics industry. The study established that logistics collaboration is considered a natural consequence from logistics activities occurring due to competitive dynamics and organizations can annex strategic benefits from collaboration through the inter- activity and reciprocal flows occurring from the logistics strategy. Further, Rodrigues, Harris and Mason (2015) studied on horizontal logistics collaborations for enhanced supply chain performance. The study established that there was a positive relationship between logistics collaborations and supply chain performance. The researchers suggested that a true logistics-based collaboration among supply chain industry players can have significant benefits such as massive reduction of costs and improved customer service.

Reverse Logistics and Performance of Food and Beverage Firms

Several studies have been conducted on the influence of reverse logistics on firm performance. A study by Jones (2020) on how performance of food industries in Kenya are affected by reverse logistics adopted an explanatory research design and a census survey conducted to all the 187 food processing firms registered with Kenya Association of Manufacturers in Kenya. The study established that reverse logistics practices such as returns, remanufacturing, recycling, reuse, returnable packaging and incinerable products positively influence firm performance. Muttimos (2014) sought to establish the relationship between reverse logistics and performance of manufacturing firms in Kenya. The study established that performance of manufacturing firms in Kenya was dependent on increased adoption of remanufacture practices and recycling practices with minimal adoption of reuse practices.

Similarly, Nyarega (2015) conducted a study on reverse logistics and performance of government owned manufacturing firms in Kenya, which established that reverse logistics had a significant influence on firm performance and further recommended that management of various manufacturing firms should consider putting in place targeted measures to spur adoption of reverse logistics practices. Kariuki (2014), studied on the factors affecting adoption of reverse logistics in Kenya manufacturing sector: a case study of Coastal Bottlers Company. The study adopted a case study design and stratified sampling technique to select respondents. It concluded that the identified factors that is: recycling, remanufacturing and returns management were very significant in reverse logistics implementation and every organization planning to implement reverse logistics should consider them.

Data and Methodology

The study adopted a descriptive research design to provide a framework to examine the relationship of the independent variables and the dependent variable. The target population of the study was the heads logistics of all the 86 food and beverage firms in the Nairobi City County under the Kenya Association of Manufacturers (KAM) as of 31st December 2022. The study used census sampling technique to collect data from all the 86 Food and Beverage firms which consisted of the heads of logistics. Closed ended and open-ended questionnaires were administered to the respondents which were designed using the identified variables to meet the study objectives. The questionnaires were in form of Likert scale where respondents were required to indicate their views on the scale of 1 to 5 with 1 representing agree to a very little extent and 5 agree to a very large extent.

The researcher conducted a pilot test to confirm that the study collection instrument was valid and reliable in order to gather data that was compatible with the primary purpose. The pilot study

entailed 9 respondents (10% of the sample size) who were heads of logistics in the food and beverage firms in Nairobi City County. The results of the content analysis indicated that the instrument was valid in regards to Content clarity of words, relevant, simple objective, accurate, complete and credible.

Quantitative data was analyzed through inferential statistics and correlation analysis aided by the Statistical Package for Social Sciences (SPSS) version 24. Content analysis was used to analyze qualitative data from the open- ended questions. Descriptive statistics was presented in form of frequency tables, pie charts, percentages, means and standard deviation. The inferential statistics included Pearson's' correlation and regression analysis. To establish on the relationship between multiple independent variables and one dependent variable, multiple linear regression model was used to test the conceptualized model.

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistics are used to define and describe the properties of a set of data (Mboya, 2019). The presentation of descriptive statistics is based on the frequencies, percentage, mean and standard deviation of study variables. These variables were fourth party logistics, virtual logistics, logistics collaboration and reverse logistics which were independent variables while performance of food and beverage firms was the dependent variable. The respondents were asked to indicate their level of agreement from 1 very little extent, 2-little extent, 3-moderate extent, 4-large extent and 5 very large extent. The findings are as follows.

Fourth Party Logistics

The first objective of this study was to examine the influence of fourth party logistics on performance of food and beverage firms in Nairobi City County, Kenya. So as to achieve this objective, the respondents were asked to give their responses in regard to how various statements on fourth party logistics apply to their firm. Their responses were as summarized in table 1 below:

Table 1: Descriptive Statistics on Fourth Party Logistics

Statement	N	Mean	SD
Logistics protocol enhances performance of the firm operations.	61	4.049	.7400
Our firm has a well-established 4PL protocol for enhanced operations.	61	4.164	.8402
The firm's logistics and supply chain operations are oversighted by an external service provider.	61	4.082	.5858
Our fourth party logistics oversight has enabled efficient service provision to our customers.	61	3.984	.9397
Supply network plan enhances effective designing of the firm's logistics operations.	61	3.770	.9017
Our firm has a 4PL supply network plan in place for effective distribution channels.	61	4.115	.8386
Information feed structure affects the performance of the firm.	61	3.787	.9681
Our firm has an elaborate fourth party information feed structure.	61	4.115	.8963
Average	**61**	**4.008**	**.8388**

From the study findings as summarized in table 1 above, the respondents agreed to all the statements to a large extent in regard to fourth party logistics, with an average mean of 4.008 and a standard deviation of 0.8388. Majority of the respondents agreed to a large extent that logistics

protocol enhances performance of the firm operations, represented by a mean of 4.049 and a standard deviation of 0.7400. On whether the firms had a well-established 4PL protocol for enhanced operations, most of the firms agreed with the statement to a large extent with a mean of 4.164 and the standard deviation of 0.8402. On whether the firms' logistics and supply chain operations were oversighted by an external service provider, a mean of 4.082 was recorded and a standard deviation of 0.5858. This indicated that majority of the respondents agreed with the statement to a large extent.

Most respondents further agreed to a very large extent that logistics oversight had enabled efficient service provision to the firms' customers with a mean of 3.984 and a standard deviation of 0.9397. Additionally, most firms agreed to a large extent that 4PL supply network plan enhances effective designing of the firm's logistics operations with a mean of 3.770 and a standard deviation of 0.9017. Additionally, most firms had a 4PL supply network plan in place for effective distribution channels as per their agreement with the statement to a large extent with a mean of 4.115 and a standard deviation of 0.8386. On whether information feed structure affects the performance of the firms, most respondents agreed to large extent as evidenced by a mean of 3.787 and a standard deviation of 0.9681. Finally, the respondents were asked if their firms had an elaborate fourth party information feed structure. Most firms agreed to a large extent with a mean of 4.115 and a standard deviation of 0.8963.

The above findings were in concurrence with Aloo (2021) who investigated the relationship between fourth party logistics services and performance of manufacturing firms in Kenya, who concluded that using fourth party logistics is a smart move and can enhance firm performance significantly. Further, the study agrees with a study by Joto (2018), who established a high correlation between fourth party logistics and firm performance and concluded that it can enhance firm performance if fully adopted.

Virtual Logistics

The second objective of this study was to examine the influence of virtual logistics on performance of food and beverage firms in Nairobi City County, Kenya. So as to achieve this objective, the respondents were asked to give their responses in regard to how various statements on virtual logistics apply to their firm. Their responses were as summarized in table 2 below:

Table 2: Descriptive Statistics on Virtual Logistics

Statement	N	Mean	SD
E- Warehousing procedures enhance inventory management in our firm.	61	3.852	.7711
Our firm has a cloud-based warehousing data storage.	61	4.164	.8790
The firm uses an electronic cargo tracking system to monitor and trace goods in transit in its supply network.	61	3.754	1.0272
GPS systems in cargo tracking enhances security and supply chain visibility.	61	4.164	.8978
The firm uses bar coding system to identify and monitor its inventory in the warehousing operations.	61	3.984	.7851
Bar coding system has facilitated efficient and effective inventory management in your firm.	61	4.180	.7639
The firm has a system where orders are communicated electronically.	61	3.852	.6541
Our firm's electronic data interchange systems have enhanced efficiency in the logistics operations.	61	4.016	.7851
Average	**61**	**3.999**	**.8204**

As per the results in table 2 above, the respondents were in agreement with all the statements in regards to virtual logistics, with an average mean of 3.999 and a standard deviation of 0.8204. On the statement whether e- warehousing procedures enhance inventory management in the firms, the respondents agreed to a large extent with a mean of 3.852 and the responses varied with a standard deviation of 0.7711. On whether the firms had a cloud-based warehousing data storage system, most firms agreed to a large extent, resulting to a mean of 4.164 and a standard deviation of 0.8790. The respondents were further examined on whether their firms use an electronic cargo tracking system to monitor and trace goods in transit in their supply network. This also attracted a majority of the responses agreeing to a large extent, recording a mean of 3.754 and a varied standard deviation of 1.0272.

On the investigation whether GPS systems in cargo tracking enhances security and supply chain visibility, most respondents agreed to a large extent with a mean of 4.164 and a standard deviation of 0.8978. Most of the respondents also agreed to a large extent on the statement whether the firms used bar coding system to identify and monitor their inventory in the warehousing operations represented by a mean of 3.984 and a standard deviation of 0.7851. A further probe to this statement was to establish whether bar coding system had facilitated efficient and effective inventory management in the firms where most firms agreed to a large extent, representing a mean of 4.180 and the responses varied with a standard deviation of 0.7639. The study also sought to establish whether the firms had a system where orders were processed and communicated electronically, where a mean of 3.852 and a standard deviation of 0.6541. This showed that the respondents agreed to the statement to a large extent. Finally, majority of the respondents agreed to a large extent that electronic data interchange systems had enhanced efficiency in the logistics operations of their firms. A mean of 4.016 was recorded and a standard deviation of 0.7851.

The above findings on on virtual logistics agree with Ullah (2021) who investigated the impact of virtual logistics practices on firm performance in context of supply chain where the study revealed that virtual logistics practices and strategies have an impact on performance of firms and that virtual logistics was a vital component ant tool that the companies in the study used to achieve optimal supply chain performance. The study findings further concurred with Jepchumba (2020) who studied on the influence of logistics information management systems on performance of food and beverage firms in Kenya and established that companies can improve their competitive positioning through the virtual logistics strategy. According to Borena and Yilma (2021), virtual logistics strategies in particular cloud-based warehousing systems reduce constraints in firm information flow, increased product and service visibility and enhances flexibility in systems within supply chain partners and manufacturing as a whole.

Logistics Collaboration

The third objective of this study was to examine the influence of logistics collaboration on performance of food and beverage firms in Nairobi City County, Kenya. So as to achieve this objective, the respondents were asked to give their responses in regard to how various statements on logistics collaboration apply to their firm. Their responses were as summarized in table 3 below:

Table 3: Descriptive Statistics on Logistics Collaboration

Statement	N	Mean	SD
Crossdocking policy optimizes the firm's distribution network.	61	4.082	.9539
Our firm has a cross docking policy to reduce inventory storage costs.	61	3.902	1.1211
Through logistics information integration, the firm's logistics operations are well coordinated.	61	4.000	.8367
Our firm has a functional information flow structure that enhances logistics operations.	61	3.967	.8360
Inventory information sharing through VMI programs enhance inventory replenishment responsiveness.	61	4.033	.7951
The firm adopts a VMI system to optimize its inventory levels.	61	3.721	1.0821
Supplier partnerships management enhances the firm's logistics operations.	61	4.164	.7785
Our firm treats suppliers as partners in enhancing buyer supplier relationship.	61	4.164	.8978
Average	**61**	**4.004**	**.9126**

From the above analysis, majority of the respondents were in agreement to a large extent on the statements in regard to logistics collaboration with an average mean of 4.004 and a standard deviation of 0.9126. On the statement whether crossdocking policy optimizes the firms' distribution network, a mean of 4.082 and a standard deviation of 0.9539 was recorded, which showed that the respondents agreed with the statement to a large extent. On the investigation whether the firms had a cross docking policy to reduce inventory storage costs, a large number of the respondents also agreed to a large extent, with a mean of 3.902 which had varied responses shown by a standard deviation of 1.1211. Further, the study established that through logistics information integration, the firms' logistics operations are well coordinated. The recorded mean of 4.000 and a standard deviation of 0.8367 showed that most of the respondents agreed to a very large extent.On whether the firms had a functional information flow structure that enhances logistics operations, a mean of 3.967 and a standard deviation of 0.8360 was recorded, an agreement with the statement to a large extent.

Whether inventory information sharing through vendor managed inventory programs enhances inventory replenishment responsiveness, majority of the respondents agreed to a large extent with a mean score of 4.033 and a standard deviation of 0.7951 which implied a minimal variance on the responses to the statement. Additionally, the study sought to understand whether the firms adopted a vendor managed inventory system in order to optimize their inventory levels. A majority of the responses agreed with the statement to a large extent, denoted by a mean of 3.721 and a standard deviation of 1.0821, implying that there were some divergent opinions on the statement. The study also sought to establish whether supplier partnerships management enhances the firms' logistics operations where majority agreed with the statement to a large extent recording a mean score of 4.164 and a standard deviation of 0.7785. Finally, the study sought to examine whether the firms treated suppliers as partners in enhancing buyer supplier relationships, where most respondents agreed with the statement with a mean of 4.164 and a standard deviation of 0.8978.

These findings on logistics collaboration were in agreement with Kipruto (2020), who investigated on the role of logistics collaboration on performance of third-party service providers in Kenya. The study established that buyer- supplier collaboration influenced operational performance positively. The results further illustrated that customer collaboration also influenced operational performance positively. The study findings are further supported by Berut (2020), who found a

positive and significant correlation between logistics collaboration and performance of dairy firms. A study by Odinga (2015) also concluded that effective firm performance can be achieved by logistics and supply chain collaborations through partnerships, creativity, awareness and regulations.

Reverse Logistics

The fourth objective of this study was to examine the influence of reverse logistics on performance of food and beverage firms in Nairobi City County, Kenya. So as to achieve this objective, the respondents were asked to give their responses in regard to how various statements on reverse logistics apply to their firm. Their responses were as summarized in table 4 below:

Table 4: Descriptive Statistics on Reverse Logistics

Statement	N	Mean	SD
The firm has a return policy that manage customers' product returns.	61	3.623	1.0671
Product return policy enhances customer confidence in the firm's products.	61	4.131	.8846
The firm uses recycling practices in waste management.	61	3.852	1.0138
Material recycling practices enables firms to participate in environmental protection.	61	4.082	.7370
The firm adopts a product recall policy in managing product defects and safety issues.	61	3.672	.9613
Product recall policies protect the reputation of the firm.	61	4.033	.8557
The firm has a remanufacturing policy for products waste management.	61	3.787	1.0664
Remanufacturing policies help in waste reduction and product value addition.	61	4.115	.8185
Average	**61**	**3.912**	**.9256**

As per the above results, most of the respondents agreed to a large extent on the statements in regard to reverse logistics with an average mean of 3.912 and a varied standard deviation of 0.9256. On the examination whether their firms had a return policy that manages customers' product returns, majority of the respondents agreed to a large extent with the statement, recording a mean of 3.623 and a standard deviation of 1.0671 which indicated moderately varied responses to the statements. Further, on the statement whether product return policy enhances customer confidence in the firms' products, the mean was 4.131 and a standard deviation of 0.8846 which indicated an agreement with the statement to a large extent. On the establishment whether the firms used recycling practices in waste management practices, majority of the respondents further agreed to a large extent with a mean of 3.852 and a varied standard deviation of 1.0138. The study further probed on whether material recycling practices enabled the firms to participate in environmental protection which resulted to a mean of 4.082 and a standard deviation of 0.7370 depicting an agreement with the statement to a large extent.

The study also sought to establish whether the firms had adopted a product recall policy in managing product defects and safety issues. A majority of the respondents agreed with the statement with a mean score of 3.672 and a standard deviation of 0.9613. The respondents were further asked to what extent product recall policies protected the reputation of their firm. The findings indicated an agreement with the statement to a large extent with a mean of 4.033 and a standard deviation of 0.8557. On whether the firms had a re-manufacturing policy for products waste management, this resulted to a mean of 3.787 and a standard deviation of 1.0664 which indicated some variances in the responses. Finally, the study investigated whether re-

manufacturing policies help in waste reduction and product value addition. The statement was supported by a majority of the respondents who agreed to a large extent with a mean of 4.115 and a standard deviation of 0.8185.

The above findings agreed with a study by Mbovu and Mburu (2018), who examined the influence of reverse logistics on enhancing competitiveness in manufacturing firms in Kenya and established that there existed a relationship between reverse logistics strategies and firm performance. The study further revealed that there was need to enhance repackaging and that through repackaging, firms are able to portray high levels of responsibility and care to the end users. The findings were also in agreement with Moroni (2022), who established that reverse logistics contributes to a firm's eco-innovation practices and enhances a competitive edge for incorporating environmental values into reverse logistics performance.

Performance of Food and Beverage Firms

Finally, the study sought to establish how performance of the F&B firms was influenced by the logistics management strategies. The respondents were asked to indicate the extent to which they agreed with the statements on performance of F&B firms in a 5-point Likert scale. Their responses were as summarized in table 5 below:

Table 5: Descriptive Statistics on Performance of Food and Beverage Firms

Statement	N	Mean	SD
Our operation costs have reduced as a result of using logistics management strategies.	61	3.934	.9810
Our inventory related costs have been kept at a bare minimum as a result of logistics collaboration strategies.	61	4.033	.8750
Our products lead-time has reduced as a result of using logistics management strategies.	61	3.803	.9801
Reduced lead-time due to Logistics management strategies enhances customer satisfaction.	61	4.000	.8165
We have improved our customer order fulfilment services as a result of using virtual logistics strategies	61	4.033	.7951
Logistics management strategies have enhanced our firm's customer satisfaction and loyalty.	61	3.852	.9633
Average	**61**	**3.943**	**.9018**

From the above results, majority of the respondents agreed to a large extent on the statements of performance of food and beverage firms as shown by an average mean of 3.943 and a standard deviation of 0.9018. This indicated that their performance had been influenced by the application of logistics management strategies. On the investigation whether the firms' operation costs had reduced as a result of using logistics management strategies, there was a large agreement with the statement as shown by a mean of 3.934 and a standard deviation of 0.9810 which depicted an average variance on the responses. The study further sought to establish whether the firms' inventory related costs had been kept at a bare minimum as a result of logistics collaboration strategies. From the results, the respondents agreed largely with a mean and standard deviation of 4.033 and 0.8750 respectively, depicting a minimal variance of the responses.

Most firms had further reduced their products lead-time as a result of using logistics management strategies, as denoted by a mean of 3.803 and a bit varied standard deviation of 0.9801. A further probe on this established that lead-time reduction due to logistics management strategies enhanced

customer satisfaction, where a mean of 4.000 and a standard deviation of 0.8165 was recorded. Most firms had further improved their customer order fulfilment services as a result of virtual logistics strategies which was depicted by a mean of 4.033 and a standard deviation of 0.7951. Finally, the study established that logistics management strategies had enhanced the firms' customer satisfaction and loyalty. Majority of the respondents agreed with the statement, which resulted a mean of 3.852 and a standard deviation of 0.9018.

As per the above findings, all the six measures of performance of food and beverage firms had means greater than 3 which implied that the respondents agreed on the fact that performance of food and beverage firms is influenced by logistics management strategies. This reflects the findings by Karibo (2019), who established that firm performance was greatly impacted by logistics management strategies more so sales growth and on time delivery. The study further agreed with Ojalla (2021), who found out that firms which had adopted logistics strategies on order processing, transport management, information flow strategies and warehousing strategies had a significant positive correlation with their operational performance.

INFERENTIAL STATISTICS

Correlation Analysis

The study undertook a Pearson's Correlation to explain the relationship and significance between the independence variables; fourth party logistics, virtual logistics, logistics collaboration, reverse logistics and the dependent variable, performance of food and beverage firms. The results were as shown in table 6 below:

Table 6: Correlation Analysis

		Fourth Party Logistics	Virtual Logistics	Logistics Collaboration	Reverse Logistics	Performance of Firms
Fourth Party Logistics	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	61				
Virtual Logistics	Pearson Correlation	.357**	1			
	Sig. (2-tailed)	.005				
	N	61	61			
Logistics Collaboration	Pearson Correlation	.486**	.317*	1		
	Sig. (2-tailed)	.000	.013			
	N	61	61	61		
Reverse Logistics	Pearson Correlation	.572**	.372**	.574**	1	
	Sig. (2-tailed)	.000	.003	.000		
	N	61	61	61	61	
Performance of Firms	Pearson Correlation	.493**	.322*	.497**	.613**	1
	Sig. (2-tailed)	.000	.011	.000	.000	
	N	61	61	61	61	61

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

As per the correlation summary shown in table 6 above, the association between each of the independent variables and the dependent variable were all significant at the confidence level of 95%. Further, the correlation analysis to determine the relationship between logistics management

strategies influencing the performance of food and beverage firms in Nairobi city county, Kenya, Pearson Coefficient was computed and tested at 5% significance level.

The results indicated that there was a positive relationship (r= .493) between fourth party logistics and performance of food and beverage firms in Nairobi City County, Kenya. Additionally, the researcher established the relationship to be statistically significant at 5% level (P=0.000, <0.05). This implied that improving fourth party logistics strategies has the potential to enhance performance of F&B firms. The study also indicated that there was a positive relationship (r= .322) between virtual logistics and performance of food and beverage firms in Nairobi City County, Kenya. The study found the relationship to be statistically significant at 5% level (P=0.011, <0.05). This is an indicator that increased use of virtual logistics strategies translates to improved performance of food and beverage firms.

Further, the study results indicated that there was a positive relationship (r=.497) between logistics collaboration and performance of food and beverage firms in Nairobi City County, Kenya. The study also established that the relationship was statistically significant at 5% level (P=0.000, <0.05). Finally, the study conducted a correlation analysis to establish the relationship between reverse logistics and performance of food and beverage firms in Nairobi City County, Kenya. The study indicated that there was a positive relationship, where (r= .613). The study also found the relationship to be statistically significant at 5% level (P=0.000, <0.05).

Regression Analysis

A multiple Linear Regression was conducted to examine the relationship of the independent variables and the dependent variable. The multiple regression model analysis showed a positive relationship, $R^2 = 0.429$. This shows that 42.9% of variation in performance of food and beverage firms in the Nairobi City County in Kenya can be explained by the independent variables (Fourth Party Logistics, Virtual Logistics, Logistics Collaboration and Reverse Logistics) cooperatively. The remaining 57.1% of the variations is attributed to other factors not covered in this study. This shows that the predictor variables were good predictors of performance of the food and beverage firms.

Table 7: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655[a]	.429	.388	.4037

a. Predictors: (Constant), Reverse Logistics , Virtual Logistics, Logistics Collaboration , Fourth Party Logistics

The study further used analysis of variance (ANOVA) in order to test the significance of the overall regression model. According to Green and Salkind (2013), analysis of variance helps to determine the significance of the relationship between research variables. Table 8 below show the ANOVA test results.

Table 8: ANOVA[a]

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.866	4	1.716	10.530	.000[b]
	Residual	9.128	56	.163		
	Total	15.994	60			

a. Dependent Variable: Performance of Firms

b. Predictors: (Constant), Reverse Logistics , Virtual Logistics, Logistics Collaboration , Fourth Party Logistics

The results in table 8 above indicate that the significance level of the F value of 10.530 is less than 0.05 since p value is at 0.000 significance. This therefore indicates that the independent variables (Fourth Party Logistics, Virtual Logistics, Logistics Collaboration and Reverse Logistics) have a significant statistical influence on the performance of food and beverage firms in the Nairobi City County.

Table 9: Coefficients of Determination

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
1 (Constant)	.395	.653		.604	.121
Fourth Party Logistics	.176	.143	.158	1.232	.000
Virtual Logistics	.086	.154	.062	.558	.004
Logistics Collaboration	.187	.140	.170	1.335	.000
Reverse Logistics	.447	.152	.402	2.937	.001

a. Dependent Variable: Performance of Firms

From the coefficient table 9 above, the following equation was obtained:

$$Y = 0.395 + 0.176X_1 + 0.086X_2 + 0.187X_3 + 0.447X_4$$

The regression equation above established that taking all factors into account (Fourth Party Logistics, Virtual Logistics, Logistics Collaboration and Reverse Logistics) constant at zero, performance of food and beverage firms will be an index of 0.395. From the coefficient results for fourth party logistics, there was a significant contribution to the model with ($\beta_1 = 0.176$, P=0.000), which implies that holding all other independent variables (virtual logistics, logistics collaboration and reverse logistics) constant, a unit increase in fourth party logistics will increase performance of food and beverage firms by 17.6%. Virtual logistics also had a unique significant contribution to the model with ($\beta_2 = 0.086$, P=0.004) which implied that holding all other independent variables (fourth party logistics, logistics collaboration and reverse logistics) constant, a unit increase of virtual logistics will increase the performance of food and beverage firms by 8.6%.

Further, the coefficient results for logistics collaboration ($\beta_3 = 0.187$, P=0.000) indicated a significant contribution to the model, which implied that holding all other independent variables (fourth party logistics, virtual logistics and reverse logistics) constant, a unit increase of logistics collaboration will increase the performance of food and beverage firms by 18.7%. Finally, the coefficient results for reverse logistics ($\beta_4 = 0.447$, P=0.001) also indicated a significant contribution to the model and implied that holding all other independent variables (fourth party logistics, virtual logistics and logistics collaboration) constant a unit increase of reverse logistics will increase the performance of food and beverage firms by 44.7%.

CONCLUSION AND RECOMMENDATIONS

Based on the findings, the study concluded that logistics management strategies have a positive influence on performance of food and beverage firms in Nairobi City County, Kenya. This has been achieved through use of specific logistics management strategies like fourth party logistics, virtual logistics, logistics collaboration and reverse logistics in a firm's operations which significantly enhances their performance to a large extent. The study also concludes that use of

logistics collaboration through buyer supplier relationship, customer relationship management and information sharing improve customer service levels, reduced customer complaints and reduced costs. Further, the study concluded that virtual logistics strategies enhance supply chain visibility and significantly enhances the overall performance of firms through improved efficiency and effectiveness.

The study further concludes that fourth party logistics network planning enhances effective distribution channels which enables efficient service provisions to the customers. Finally, the study concluded that use of reverse logistics in the logistics operations enhances environmental protection, compliance with environmental policies and cost optimization through remanufacturing.

The study recommended the adoption of logistics management strategies as a management strategy to boost performance of food and beverage firms. The study established that there is a positive significant relationship between logistics management strategies and performance of food and beverage firms, and there is need to invest in sustainable logistics management strategies for the food and beverage firms. By so doing, the organizations will leverage on enhanced performance. The study also recommends that due to security threats and need to enhance supply chain visibility during transit, food and beverage firms should install GPS systems to electronically track all shipments. Further, the study recommended that information flow should be highly prioritized by ensuring timely sharing, and also ensure linkage of communication systems which help to achieve efficiency in information flow.

The firms should also use virtual logistics technologies such as electronic data interchange, barcoding among others to share information across the supply chain. Logistics collaboration should also be highly utilized in order to ensure effective flow of goods and services across the supply chain through a well-coordinated process. This includes use of vendor managed inventories to avoid stock-outs and enhance inventory optimization, cross-docking policies to reduce of storage costs, integration of information systems and supplier partnerships to improve on the buyer supplier relationships. The study further recommends that food and beverage firms should effectively maximize use of fourth party logistics strategies as this helps firms to concentrate on their core activities and utilize the expertise and resources of fourth party logistics service providers to effectively enhance their logistics and supply chain capacity. Despite these, the firms should also develop their internal logistics management capabilities to cushion against failures by fourth party logistics providers especially the shipment of fast needed items on short notices.

Finally, the study recommended continued adoption of reverse logistics by food and beverage firms as this enhances environmental management systems by the firms. Returns for packaging materials for recycling and reuse should be encouraged among the firms. This includes need for awareness creation about recycling and reuse of packaging containers and other materials as well documented and implemented recycling policies. Use of product returns policies were also recommended to ensure after sales customer service and satisfaction.

Areas for Further Study

The study is a milestone for further research in the performance of food and beverage firms in Kenya, particularly in the Nairobi City County. The findings demonstrated the important logistics management strategies to the performance of food and beverage firms in Nairobi City County which include: fourth party logistics, virtual logistics, logistics collaboration and reverse logistics which had a positive significance. Existing literature indicates that as a future avenue of research, there is need to undertake similar research studies in other counties in Kenya and other countries

in Africa in order to establish whether the explored logistics management strategies here in can be generalized to affect performance in other counties and countries.

The study also suggests that future studies on logistics management strategies may be conducted on other sectors of the economy apart from the food and beverage sector. The regression results further indicated the value of R square as 0.429 meaning that 42.9% change in performance of food and beverage firms describes strategies in logistics management thus it can be deduced that other than from strategies in logistics management, there are other influences compelling performance of food and beverage firms where future studies may deal with.

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