VALUE CHAIN MANAGEMENT PRACTICES AND PERFORMANCE OF FRUIT EXPORTING FIRMS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The value chain describes the full range of activities that firms and workers perform to bring a product from its conception to end use and beyond. The main aim of a value chain is to produce value-added products for a market, by transforming resources and by use of infrastructures within the opportunities and constraints of its firm environment. Agriculture is among the crucial sectors in the economy as it provides employment, foodstuffs, a source of foreign exchange earnings and provides linkages to other sectors of the economy. The fruit processing sector in Kenya is being underutilized and the firms are processing below their capacity. The general objective of the study was to examine the effect of value chain management practices on performance of fruit exporting firms in Nairobi City County, Kenya. The specific objectives are to examine effect of transport management and information flow performance of fruit exporting firms in Nairobi City County, Kenya. The study will be guided by two theories; value chain theory and agency theory. The study adopted a descriptive survey research design. The study targeted 88 fruit processing firms in Nairobi City County Kenya. The target was 88 procurements and 88 operations managers. Census sampling techniques was used to select the study sample. Therefore, a sample of 176 respondents. A pilot test was conducted with 18 participants, representing 10% of the sample size. The study emphasizes the significance of effective transport management practices in driving the performance of fruit exporting firms in Nairobi City County, Kenya. With a very strong positive correlation and substantial predictive power in the regression model, transport management emerges as a key determinant of firm performance. The study highlights the importance of efficient information flow practices in driving the performance of fruit exporting firms in Nairobi City County, Kenya. With a strong positive correlation and significant predictive power in the regression model, information flow emerges as a critical determinant of firm performance. To improve transport management and consequently firm performance, fruit exporting firms in Nairobi City County, Kenya should invest in advanced vehicle tracking systems with analytical capabilities to monitor and optimize vehicle performance and route planning. To improve information flow practices and enhance firm performance, fruit exporting firms in Nairobi City County, Kenya should establish robust communication channels and collaboration platforms with supply chain partners to facilitate information sharing and transparency.

Key Words; Transport Management, Information Flow, Value Chain Management Practices, Performance of Fruit Exporting Firms

Background of the Study

The value chain describes the full range of activities that firms and workers perform to bring a product from its conception to end use and beyond. Value chain can be used as a tool to disaggregate a business into major activities, thereby allowing the identification of sources of competitive advantage (Fernandez-Stark & Gereffi, 2019). According to Kano, Tsang, and Yeung (2020), the main aim of a value chain is to produce value-added products for a market, by transforming resources and by use of infrastructures within the opportunities and constraints of its firm environment. To develop the value chain of the commodity, the constraints related to market access (local, regional and national) and market orientation, available resources and physical infra-structures and institutions (regulative, cognitive and normative) should be identified.

Value chain management is a practice where a firm evaluates its internal activities to identify how each contributes to the firm's competitive advantage. The definitive goal of a value chain management is to pin down the practices and processes that differentiate a firm from its competitors (Ong, Goh, & Yong, 2022). Value chain management is conducted for a variety of purposes. The primary purpose of value chain management is to understand the reasons for inefficiencies in the chain, and identify potential leverage points for improving the performance of the chain, using both qualitative and quantitative data. Value chain management facilitates an improved understanding of competitive challenges, helps in the identification of relationships and coordination mechanisms, and assists in understanding how chain actors deal with powers and who governs or influences the chain (Murray, 2019). Anandajayasekeram and Berhanu (2019) concluded that Agricultural value chain analysis is a dynamic approach that examines how markets and industries respond to changes in the domestic and international demand and supply for commodities. Value chain management helps companies to make sound decisions, provide superior solutions to their customers' needs, and increase their members' understanding of the organization's aims.

According to Dubey and Singh (2020), a value chain includes the activities that take place within a company in order to deliver a valuable product or service to their market. Each stage of the value chain adds more value. The value chain provides a tool to visualize a firm's productivity by identifying the thousands of discrete activities involved. A business must use its value chain activities to create value, and then capture that value. The value created by this chain should exceed the sum of the values added by each individual activity. The purpose of value-chain analysis is to increase production efficiency so that a company can deliver maximum value for the least possible costs.

Horticulture sector in South Africa are undergoing a process of fast transformation. Supermarkets source horticultural products through coordinated value chains, with stringent requirements. These improve quality but increase the commercial pressures and costs for growers. Horticulture farmers have a wider range of buyers, and European supermarkets can no longer be assured of automatic availability of quality produce (Visser, 2018). Oloitan, Hubbard and Bamford (2020) noted that the key challenges to horticulture product export from Nigeria as; regulatory framework, poor infrastructure and logistics, marketing, poor farming techniques, high transaction costs, and poor operations capabilities at the horticulture exporting firms.

Value chain management helps companies to make sound decisions, provide superior solutions to their customers' needs, and increase their members' understanding of the organization's aims. Nonexistence of value management in an organization could result to fallacious decisions, low technology adoption, consumer discontentment, substandard products, and loss of market share as a result of firm's failure to compete in the market (Muthoka & Ogutu, 2018). Mulangu (2017) noted that adoption of strategic capabilities in horticultural firms in Kenya is very low hence

hindering their performance. According to Chege (2017), efficient and effective business value chain management optimizes value for the customer and the customers' customer. It focuses on creating competitive advantages and strengthening all strategically relevant corporate activities. Value chains operate both at the business level and at the industry level. Value can only be achieved at the industry level if and when an organization through connecting and convening key players, develops right strategies, practice seeing the system through one another's eyes, build partnership, evaluate and scale up the value chain and institutionalize successful approaches.

Statement of the Problem

Agriculture serves as a cornerstone of the economy, offering employment, sustenance, foreign exchange, and interconnections with various economic sectors. Currently, agro-processing contributes significantly to Kenya's economic landscape, with 2.4% of national employment, 3.2% to the gross domestic product, and 8.5% of export earnings (KHCP, 2022). Despite Kenya's success as a producer of fresh fruits and vegetables for export, it faces challenges in maintaining its market share in the global horticulture market due to escalating production costs, extended transport durations, and subpar regulatory compliance. Remarkably, only 4% of horticultural produce is exported, with the overwhelming majority, 96%, consumed domestically (Horticulture Crop Directorate, 2022).

The local fruit processing industry operates at a mere 62% capacity, with fruits and vegetables experiencing alarmingly high loss rates ranging from 40% to 50%. This underutilization of fruit processing capacity is a critical issue, with firms processing well below their potential. Several factors contribute to this low-capacity utilization, including challenges in raw material supply, price negotiations, quality assurance, packaging, and marketing (Mbogo, 2023). Additionally, Kinoti and Kyamanywa (2021) highlight that over 80% of fruit farmers in Kenya face crop losses within two years, leading to the abandonment of lucrative crops like passion fruit. Nzomoi et al. (2022) further note that local agro-processing factories struggle to operate efficiently due to infrastructural challenges such as poor roads, inadequate electricity, water shortages, and limited network connections. Consequently, approximately half of the farm produce is lost due to logistical hurdles, production surpluses, and inadequate policies supporting local agro-processing.

Financially, the fruit processing manufacturing sub-sector has witnessed a steady decline in performance from 0.6% in 2012 to -0.1% in 2021 (Kenya Association of Manufacturers, 2022). Furthermore, the Return on Capital Employed (ROCE) of fruit exporting firms in Nairobi City County has decreased from 21.6% in 2017 to 19.2% in 2019 (Kenya National Bureau of Statistics, 2020). Despite economic recoveries in both Europe and Kenya post-2010, Kenya's market share and export value failed to rebound. The decline in market share of Kenyan exports of fruits and vegetables, particularly to the EU, has been evident since 2011 (KNBS, 2019). Notably, Kenya's annual avocado exports amount to £5 million, representing a mere 2% share in a rapidly expanding, health-conscious consumer market.

There exist several studies on value chain and firm performance in Kenya. Kuria and Kariuki (2022) assessed effect of value chain on performance of floriculture exporting firms in Kenya and found that performance of floriculture firms in Kenya is affected by various value chain capabilities including logistics capability, operations, marketing and human resources capability. Chege (2017) on influence of internal value chain management revealed that internal business value chain was significantly related to performance of manufacturing companies. Munyi and Deya (2019) on effect of strategic value chain on performance of pharmaceutical companies in Kenya found that value chain activities have a significant relationship with firm performance. Nyandiwa (2016) sought to determine whether value chain management led to increased

organizational performance in food production companies in Kenya. The study concludes that there is a relationship between value chain management and performance of an organization. While various studies have explored the dynamics of value chains and firm performance in Kenya across different sectors, such as floriculture, manufacturing, and pharmaceuticals, no specific study has addressed the impact of value chain management practices on fruit processing firms in Kenya. Hence, there is an urgent need to investigate the effects of value chain management practices on the performance of fruit exporting firms in Nairobi City County, Kenya.

General Objective

To examine the effect of value chain management practices on performance of fruit exporting firms in Nairobi City County, Kenya.

Specific Objectives

i   To establish effect of transport management on performance of fruit exporting firms in Nairobi City County, Kenya.
ii To determine effect of information flow on performance of fruit exporting firms in Nairobi City County, Kenya.

Theoretical Review

Transaction Cost Theory

The transaction cost theory was introduced by Williamson (1979). The theory explains that the best governance structure attempts to achieve economic efficiency by lowering operating expenses. According to the Williamson, every kind of transaction incurs coordination costs for tracking, regulating, and controlling transactions. The theory explains why corporations may experience higher transaction costs in market-oriented operations and why corporates may be more effective at managing transactions than marketplaces. The organization will choose a transport service that lowers transportation costs that reduces costs and production expenses. Risks in terms of value chain management relate to unpredictable outcomes of performance indicators. Among the causes of risks in the value chain is transport management. The risks can have a negative effect on sales, where distributors and retailers down the chain are also affected (Koufteros, 1999). According to Halldorsson (2007), organizations may cut transaction costs while increasing the scope of conviction simultaneously by utilizing vertical integration. According to the theory, transaction costs need to be differentiated from production expenses, and decision-makers may opt to use firm resources or externally by comparing internal production costs to transaction costs. As a result, the primary consideration in such a decision is cost. Transaction costs are not incurred in the production of a product, but in the transfer of goods or services from one economic entity to another. Transport costs may either add or reduce costs in the supply chain. This depends on the distance where materials are sourced and customers' location if delivery is to be done.

Communication Theory

The study will be guided by Communication Theory developed by Shannon's and Weaver (1949). According to Communication theory, a message begins at an information source, which is relayed through a transmitter, and then sent via a signal towards the receiver. But before it reaches the receiver, the message must go through noise (sources of interference). Finally, the receiver must convey the message to its destination. Today, communication is being regarded as an important factor in business, and that the ability of the company to communicate can determine its success. This theory is specially designed to develop the effective communication between sender and receiver. Shannon and Weaver's explains that while one person is speaking,

the other is listening. How this listening is done constitutes information for the sender (Bryant and Heath, 2000).

This theory is relevant in study since effective communication in an organization can only be achieved if both the receiver and the sender are capable of interpreting meanings out of the information being communicated. For instance, in the supply chain context, the procurement manager may mean well and believe that he is delivering the messages properly to the suppliers/customers. However, because the receiver has not been briefed earlier about a particular piece of information that plays an important part on what the manager communicated, they miss the point of what the manager tries to say. In return, the manager may interpret that the receivers are still ignorant about a specific piece of information and still need further briefing. Effective internal and external communication is the key in enabling a successful procurement process. Clear and well-structured communication enables companies to effectively manage complex procurement activities and handle problems efficiently.

Conceptual Framework

The conceptual framework in Figure 1 presents the nexus between independent and dependent variable. The independent variables are; transportation and information flow. The dependent variable is the performance of fruits exporting firms.

Independent Variables   **Dependent Variable**
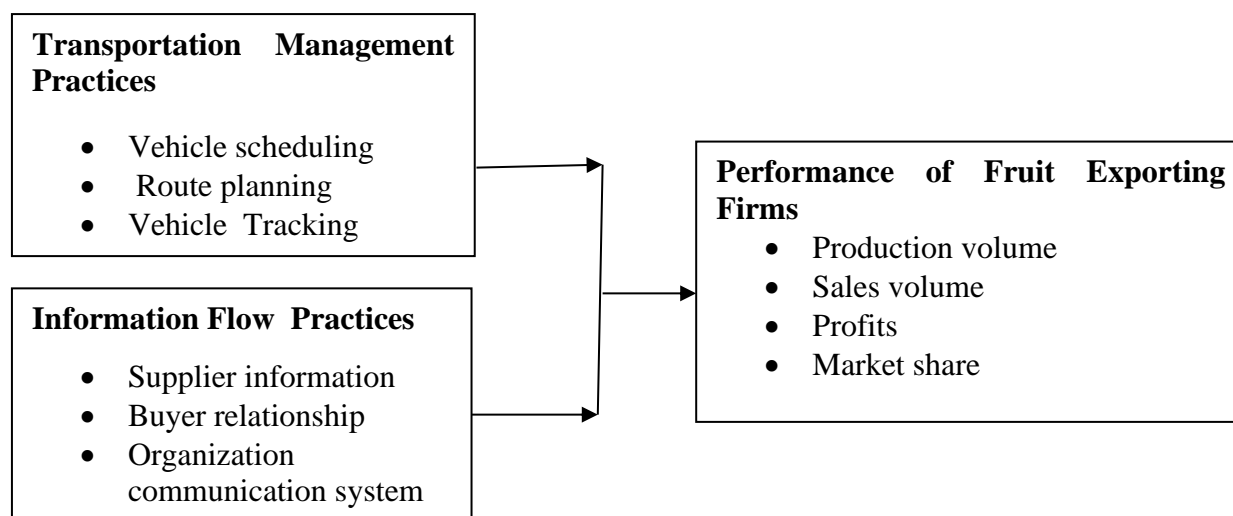

Figure 1: Conceptual Framework

Transport Management practices

Transport management practices refer to the planning, execution, and control of the movement of goods and people from one location to another. Transport management practices include route planning, vehicle scheduling, vehicle maintenance, freight consolidation, tracking and monitoring, safety management, fuel management, and driver management (Eisaeia et al., 2017). Munuhuwa et al., (2020) asserted that transport management encompasses all actions required to maintain and operate vehicles throughout their life cycles, from the initial stages of acquisition to the final stages of disposal. The overall goal of transportation is to connect sourcing locations with customers at lowest possible cost within the constraints of customer service policy. Transportation plays a key role in the supply chain, because without the efficient movement of finished goods and raw materials the entire system would not be able to work at its full potential. It is essential and major sub function of logistics that creates time and place utility in goods. Transportation management is the back bone of supply chain that makes it to achieve the well-known seven Rs the right product, in the right quantity, the right condition, at the right time, for the right customer and at the right cost (Chala, 2021).

Vehicle availability ensures that there are an adequate number of vehicles available for scheduling. In addition, specific requirements such as the number of passengers, the amount of cargo, and the distance to be traveled should be considered when assigning vehicles to tasks (Shui et al., 2015). Chiparo et al. (2022) noted that drivers must be available for each scheduled trip, and their hours of service must be considered to ensure compliance with regulations. They added that vehicles must be regularly maintained to ensure that they are safe and reliable. In addition, the cost of fuel, maintenance, and labor must be considered when scheduling vehicles at the starting and ending points of the journey are the most fundamental constructs in route planning as they help to identify the distance, time, and various modes of transport that can be used. Kaneko and Honda (2016) pointed out that when selecting a mode of transport, it is important to consider factors such as distance, time, cost, and personal preferences. In addition, navigation tools such as maps, global positioning system (GPS) are essential constructs in route planning as they help identify the most efficient and effective routes.

Li et al. (2018) explained that vehicle tracking allows the owner or operator of a vehicle to keep track of its movements as well as gather other valuable information such as fuel consumption, engine performance, and driver behavior. A global positioning system (GPS)-based vehicle tracking system typically consists of a GPS device that is installed in the vehicle, which is then connected to a network or software application that can track its location and other data. Begashaw (2018) asserted that vehicle tracking systems may significantly reduce accidents, improve fuel efficiency, and enhance the overall performance of fleets. Vehicle tracking systems help optimize logistics operations by reducing transportation costs, improving delivery times, and enhancing the overall efficiency of supply chains.

Information Flow practices
Information flow is the flow of information from supplier to customer and from customer back to supplier. This flow is bi-directional, that is, it goes both directions in the supply chain. Information has shown to be a key resource that improves company efficiency and helps a company efficiently satisfy client expectations. Today's businesses want to share information with their suppliers, but they also want that information to be useful and timely when it comes to ordering and replenishment, which will improve the performance of manufacturing companies. The flow of accurate and real time information in logistics is considered very important to the flow of materials (Stevenson & Spring, 2017). Patrucco et al.(2018) indicate that the buyer and the supplier need to create a new attractive relationship to create and transfer value. A strong supplier relationship can lead to positive feedback and returns. However, in some instances, this can put the firm at risk, especially when companies ask their suppliers for price concessions thereby, strain the relationship.

Information sharing amongst supply chain participants is a facilitator of better organization and planning of the supply chain activities as the best way to achieve optimum performance since all of the supply chain participants are kept well informed about their responsibilities towards the fulfillment of the market's needs (Marinagi, Trivellas, & Reklitis, 2015).While the role of information sharing among the participants of the supply chain is extremely essential, most of the chain participants are still hesitant to share the information as it is believed a source of power in the market can come from the information they could provide and that will directly affect their competitive position. The supply chain actors seem to be skeptical of information sharing with their business partners due to the apparent risks, associated costs, and different complexities, where the act of information sharing becomes a trade-off between the responsiveness of the information resources and efficiency (Kembro & Näslund, 2014). The information within the chain tends to be withheld and distorted in a way that limits the level of

information needed to assist decision making, despite the benefits that can be realized. Information flow can only be successful when firms impress on information technology use. Information technology provides the capacity to see data that is private in a system of cooperation and monitor the development of products, where information is passing in every process in the supply chain.

Empirical Review
Transport Management and Firm Performance
Adebayo and Aworemi (2021) examined the effect of transport management practices on firms' performance in Lagos State, Nigeria. Purposive sampling was used to select ten food and beverages companies listed on the Nigerian Stock Exchange. Data was collected from a sample of 300 respondents using questionnaires. The results of the multiple regression showed that transport management practices have a significant effect on the logistics performance of the sampled firms thereby influencing firms' performance. These factors are freight expenses; shipment tracking; vehicle routing and scheduling. Kanyepe (2023) sought to establish the effect of transport management practices on the performance of diamond mining companies in Zimbambwe. The sample size comprised of 92 respondents. Data was collected using a questionnaire. The study found that vehicle scheduling, route planning, vehicle tracking, and fuel management positively influence the performance of diamond mining companies.

Njeri (2016) conducted a study to determine how oil transport affected the performance of oil marketing firms in Rwanda. The study used a survey with a descriptive design, administering questions to the intended audience. Personal interviews with respondents served as the method of administering questionnaires. The study found a significant correlation between oil-marketing organizations' performance in Rwanda and transportation logistics management. Mihretu (2019) examined effect of transport management practice on logistics performance. This study adopted the descriptive and explanatory research design. The data was collected by using questionnaire and interview. Findings showed that both customer requirement strategy and carrier management practice were implemented to low extent and both freight payment and audit practice and transport performance monitoring practice were implemented to a moderate extent. The study further found out that there exists a strong relationship between transport management practice and logistics performance. The study also found out that there are challenges that limit the effectiveness in the implementation transportation process. The study concludes that increase in transport management practice would result in enhanced logistics performance.

Muhalia and Ngugi (2021) sought to determine the effect of transportation management systems on supply chain performance of FMCG in Kenya. The study adopted descriptive research design. Census was used to select 51 procurement officers. Primary data was collected using questionnaires. The study found that transport management systems positively and significantly influences Supply chain performance of FMCG in Kenya. The study established that transport management systems provides trade compliance information and documentation; transport management systems make it easier for businesses to manage and optimize their transportation operations, whether they are by land, air, or sea; transport management systems ensures timely delivery of freight and goods; transport management systems provides visibility into day-to-day transportation operations; and transportation management systems helps to streamline shipping process.

Mukolwe and Wanyoike (2015) assessed effect of logistics management practices on operational efficiency of Mumias Sugar Company Limited, Kenya. Purposive and convenience sampling methods were used to select 92 respondents. Questionnaires were used to collect data. Results showed that transport management and physical distribution practices allows faster and cost

effective flow of goods and raw materials thus improving operational efficiency. Ngesa and Namusonge (2023) studied effect of logistics management practices on performance of logistics firms in Nairobi County. The target was top ten (10) logistics services companies in Nairobi County. Sample size comprised of 88 employees from different departments in the 10 entities chosen., Questionnaires were used as research instruments. The data analysis was done by use of SPSS software, where inferential and descriptive was applicable to analyze quantitative data. Results showed that logistics management practices have a positive significant effect on performance of logistics firms in Nairobi County.

Information Flow and Firm Performance

Khalil, Khalil and Khan (2019) investigated the relationship between supply chain management practices and organizational performance. Data were collected from 207 small and medium enterprises in Pakistan. Findings revealed that there is no significant relationship between strategic partnership with supplier and organizational performance. However, quality of information sharing with suppliers, internal supply chain process, and lean practices significantly influenced   organizational   performance.
Gebisa and Ram (2020) investigated effect of information sharing on firms' performance in Ethiopia. Data were collected from 170 respondents including employees, suppliers, and distributors of the companies under investigation. The result showed that information sharing has a direct and significant effect on the firm's performance. Similarly, the higher share of information leads to a greater performance of firms. Dolo et al. (2018) evaluated the role of buyer-supplier relationships management strategies in the procurement performance of manufacturing firms in Kenya. The study used a cross-sectional survey research design with a sample size of 150 manufacturing firms. The findings established that strategic partnerships with buyers and suppliers help organizations to work more effectively.

 Okore and Kibet (2019) sought to examine the influence of information sharing on supply chain performance of tourism industry in Kakamega County. The study adopted an explanatory survey design was used. The target population comprised of 459 employees working in tour companies. Questionnaire was used to collect data. Findings showed that information sharing influences supply chain performance of tourism industry in Kakamega County. Ngetich et al.(2022) investigated strategic supplier partnerships and operational performance of food and beverage manufacturing firms in Nakuru county, Kenya. The study adopted an explanatory design with a cross-sectional approach and targeted 50 respondents. The study established that there was a strong and positive relationship between strategic supplier partnerships and the operational performance of food and beverage manufacturing firms. The study offered recommendations to food and beverage manufacturing firms to establish and maintain strategic supplier partnerships to increase efficiency for better operational performance and promote cost reduction.

Kiprotich, (2022) assessed influence of information sharing on performance of manufacturing firms in Kenya. The explanatory research design was used in the study. The sample size was 264 procurement managers from Kenyan manufacturing enterprises, with 766 procurement managers as the target population. The primary data collected using questionnaires. Information sharing had positive and significant effect on performance of manufacturing firms. The study concluded that information sharing has significant effect on performance of manufacturing companies in Kenya. It was determined that the implementation of information sharing, the quality of the shared information, the kind of shared information, and the technology used to communicate this information all affect how much information businesses exchange throughout supply chains.

Mwangi and Muli (2022) sought to find out the influence of supplier segmentation, supplier collaboration, information flow and supplier development on organizational performance of food

and beverage organizations. The study adopted cross sectional survey design using both qualitative and quantitative approaches. The target population for this study was Officers working in procurement, Warehousing and Logistics departments in 63 Food and beverage organizations in Kiambu County. Data was collected by using questionnaires. Results from correlation analysis showed that, supplier segmentation, information flow, supplier collaboration and supplier development were positively and significantly correlated with performance of food and beverages manufacturing firms. The study also concluded that supplier segmentation, information flow, supplier collaboration and supplier development are embraced by the management of various food and beverages manufacturers in Kiambu County.

RESEARCH METHODOLOGY

The study adopted a descriptive survey research design. The study targeted fruit processing firms in Kenya. According to Horticultural Crop Directorate (HCD), there are 88 fruit exporting firms in Nairobi City County, Kenya. The firms were the unit of analysis while the unit of observation was the firms' procurement and operations managers. The target population was therefore 88 procurement managers and 88 operations managers (176 respondents). Lavkaras (2011) opines that sample frame represents a list of the target population from which the sample is selected. A sampling frame includes every component of a target population. In this study, the sampling frame was 176 procurement and operations managers from the 88 fruit exporting firms in Kenya. The study employed census sampling technique which is a strategy that uses the whole populace as a sample. This strategy was adopted because the target population was small and manageable and it gives the true reflection of what is being studied. The sample size was hence 176 staffs.

Primary data was collected using open and close ended questionnaires. Questionnaires are a fast and cost-cautious technique of gathering data since they are simple and inexpensive to administer (Sekaran & Bougie,2013). The questionnaire had six sections focusing on the study objectives. The questions had a likert scale of Strongly disagree (1) to Strongly agree (5). The researcher obtained a clearance letter from the University and apply for a research permit from NACOSTI. A consent form was sent to the firms to request the procurement and operations managers to participate in the study. Data was collected online whereby questionnaires were sent to the respondent's email. This saved costs that are involved in field surveys such as logistics and questionnaire printing.

The researcher followed the five APA principles of ethics in human research namely, informed consent, beneficence, non-maleficence, fidelity and responsibility, integrity, justice, respect for peoples' rights and dignity. Respondents were provided with a consent form to sign indicating that they agree to participate in the study. The researcher created awareness on the purpose, benefits and risks of the study, the expected duration of the study, and the rights of participation and/or withdrawal from the research in order for them to make informed choices. The information which was collected from the respondents was treated with confidentiality and used for the purpose of the study only. No one was coerced to participate in the study since it was based on voluntary participation.

A pilot test was conducted with 18 participants, representing 10% of the sample size. Respondents in the pilot were not included in the actual study. A pilot study allows a researcher to assess the data's effectiveness by evaluating the questionnaires' reliability, and ensuring that statistical and analytical techniques are acceptable. Data was organized to facilitate analysis. Quantitative data obtained from questionnaires was coded and analyzed with the use of a computer in Statistical Package for Social Sciences (SPSS) Version 28 program. Primary data was analyzed using both descriptive statistics (frequency, percentage, mean) and inferential statistics that will include Pearson correlation and regression. The regression equation will be

RESEARCH FINDINGS AND DISCUSSION

Descriptive Analysis

Descriptive analysis was used to describe the basic features of the data under study as they provide summaries about the sample and its measures. In this study descriptive analysis including means, and standard deviation, were used to describe the likert scale questions associated with each of the study variable.

Transport Management

The first objective of the study was to establish effect of transport management on performance of fruit exporting firms in Nairobi City County, Kenya. Respondents therefore gave their level of agreement on the listed statements related to transport management. Table 4.6 presents summary of findings obtained.

Table 1: Descriptive Statistics on Transport Management

Statements	Mean	Std. Dev.
The firm considers transport costs when planning routes	4.012	0.527
The vehicle tracking system used has advanced analytical tools that enhance vehicle performance	3.976	0.362
The firm considers the cost of fuel, maintenance, and labor when scheduling vehicles	3.958	0.483
The vehicle tracking system report all the necessary data	3.903	0.565
The firm has adequate vehicles available for scheduling.	3.882	0.513
The c firm considers safety and security in route planning	3.83	0.656
The vehicle tracking system used provides notifications in real-time	3.814	0.276
The firm regularly repairs and maintains vehicles to ensure they are safe and reliable	3.748	0.082
The vehicle tracking system has security and anti- theft measures such as geofencing, immobilization, and remote engine shutdown features	3.694	1.043
Aggregate Score	**3.869**	**0.501**

The findings show that on average, the respondents were in agreement that the firm considers transport costs when planning routes (M= 4.012, SD= 0.527); that the vehicle tracking system used has advanced analytical tools that enhance vehicle performance (M= 3.976, SD= 0.362); and that the firm considers the cost of fuel, maintenance, and labor when scheduling vehicles (M= 3.958, SD= 0.483). They also agreed that the vehicle tracking system report all the necessary data (M= 3.903, SD= 0.565); that the firm has adequate vehicles available for scheduling (M= 3.882, SD= 0.513); and that the firm considers safety and security in route planning (M= 3.83, SD= 0.656). They further agreed that the vehicle tracking system used provides notifications in real-time (M= 3.814, SD= 0.276); that the firm regularly repairs and maintains vehicles to ensure they are safe and reliable (M= 3.748, SD= 0.082); and that the vehicle tracking system has security and anti- theft measures such as geofencing, immobilization, and remote engine shutdown features (M= 3.694, SD= 1.043).

The aggregate mean of 3.869 (SD= 0.501) suggests that there was consensus among respondents that transport management affects performance of fruit exporting firms in Nairobi City County, Kenya. The findings resonate with Adebayo and Aworemi (2021) who examined transport management practices in food and beverages companies in Nigeria, highlighted the significant impact of factors such as vehicle routing and scheduling on logistics performance and, consequently, firm performance. Similarly, and Kanyepe (2023) research on the diamond mining industry in Zimbabwe found that effective transport management practices, including vehicle scheduling and route planning, positively influence firm performance. These studies provide

empirical evidence supporting the importance of transport management in enhancing the overall performance of firms, aligning with the findings of the current study regarding fruit exporting firms in Nairobi City County, Kenya. Thus, the literature corroborates the notion that optimizing transport management practices can lead to improved performance outcomes within the context of the fruit exporting industry.

Information Flow

The fourth objective of the study was to determine effect of information flow on performance of fruit exporting firms in Nairobi City County, Kenya. Respondents therefore indicated their level of agreement on the listed statements related to information flow. Table 4.2 presents summary of findings obtained.

Table 2: Descriptive Statistics on Information Flow

Statements	Mean	Std. Dev.
The firm receives complete information from the supply chain partners	3.983	0.623
Suppliers collaborate with the firm to enhance competitive advantage	3.954	0.34
The firm collaborates with both the middle, upstream and downstream suppliers in order to access information	3.894	0.426
There is information sharing between the firm and suppliers within the supply chain	3.841	0.775
The supply chain department collaborates with suppliers in order to increase firm-supplier relationship	3.806	0.906
The firm maintains supplier responsiveness when it comes to product delivery	3.769	1.045
The firm has an enterprise resource planning system for sharing information with its suppliers	3.685	0.088
Aggregate Score	**3.847**	**0.600**

From the findings, the respondents were in agreement that the firm receives complete information from the supply chain partners (M= 3.983, SD= 0.623); that suppliers collaborate with the firm to enhance competitive advantage (M= 3.954, SD= 0.34); that the firm collaborates with both the middle, upstream and downstream suppliers in order to access information (M= 3.894, SD= 0.426); and that there is information sharing between the firm and suppliers within the supply chain (M= 3.841, SD= 0.775). They also agreed that the supply chain department collaborates with suppliers in order to increase firm-supplier relationship (M= 3.806, SD= 0.906); that the firm maintains supplier responsiveness when it comes to product delivery (M= 3.769, SD= 1.045); and that the firm has an enterprise resource planning system for sharing information with its suppliers (M= 3.685, SD= 0.088).

The aggregate mean of 3.847 (SD= 0.600) show that the respondents agreed on average that determine effect of information flow on performance of fruit exporting firms in Nairobi City County, Kenya. The finding agree with Khalil, Khalil, and Khan (2019) study on supply chain management practices in small and medium enterprises in Pakistan revealed that quality information sharing with suppliers and internal supply chain processes significantly influenced organizational performance. Similarly, and Gebisa and Ram (2020) research in Ethiopia found a direct and significant effect of information sharing on firm performance, with greater information sharing leading to higher performance outcomes. These studies provide empirical evidence supporting the importance of information flow in driving performance improvements within organizations, which resonates with the findings of the current study regarding fruit exporting firms in Nairobi City County, Kenya. Thus, the literature supports the notion that

fostering efficient information flow mechanisms can contribute to enhanced performance outcomes in the fruit exporting industry.

Firm Performance

Study's main objective was to examine the effect of value chain management practices on performance of fruit exporting firms in Nairobi City County, Kenya. Respondents were therefore asked to indicate their level of agreement on the listed statements related to firm performance. Table 3 presents summary of the findings obtained.

Table 3: Descriptive Statistics on Firm Performance

Statements	Mean	Std. Dev.
The firm is able to rapidly change production volume	4.087	0.908
The fiem provides on time delivery to customers	4.046	0.223
The firm produces quality products that meets customer expectations	3.987	0.176
Sales volume has increased in the past few years	3.825	0.273
The firm profits have been increasing	3.716	0.668
Aggregate Score	**3.932**	**0.450**

Based on the findings, the respondents were in agreement that the firm is able to rapidly change production volume (M= 4.087, SD= 0.908); that the firm provides on time delivery to customers (M= 4.046, SD= 0.223); that the firm produces quality products that meets customer expectations (M= 3.987, SD= 0.176). They were also in agreement that sales volume has increased in the past few years (M= 3.825, SD= 0.273); and that the firm profits have been increasing (M= 3.716, SD= 0.668).

These findings align with relevant literature on various dimensions of firm performance. Firstly, studies like those by Atnafu and Bald (2018) and Muhindo and Rwakihembo (2021) emphasize the importance of factors such as rapid production volume changes and on-time delivery in enhancing overall firm performance. Atnafu and Bald's research in Ethiopia highlighted the positive impact of inventory management practices on firms' competitiveness and organizational performance, which likely includes aspects such as production volume flexibility and timely delivery. Secondly, research by Ikechukwu (2019) and Ngesa and Namusonge (2023) underscores the significance of producing quality products that meet customer expectations in driving firm performance. Ikechukwu's study in the Democratic Republic of the Congo found that effective supply chain management, including meeting customer requirements, led to increased productivity and improved organizational performance. Lastly, findings related to increased sales volume and growing profits resonate with the literature on firm growth and financial performance. Studies such as those by Muhalia and Ngugi (2021) and Mwangi and Muli (2022) demonstrate how effective logistics management practices and supplier collaboration contribute to improved operational efficiency and financial performance. These studies collectively highlight the interconnectedness of various aspects of firm performance and provide empirical support for the findings indicating agreement among respondents regarding different performance metrics within the context of fruit exporting firms in Nairobi City County, Kenya.

Correlation Analysis

Correlation analysis was used to test the strength and the direction of the relationship between the dependent and the independent variables. The correlation values were interpreted as $r = \pm 0.1$ to ± 0.29 is small, if it is $r = \pm 0.3$ to ± 0.49 the relationship is medium, and when $r = \pm 0.5$ and

above there is a strong relationship between the two variables under consideration. Table 4.10 presents correlation analysis findings for this study.

Table 4: Correlation Analysis

		Performance of Fruit exporting firm	Transport management	Information low
Performance of Fruit exporting firm	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	156		
Transport management	Pearson Correlation	.944**	1	
	Sig. (2-tailed)	.000		
	N	156	156	
Information low	Pearson Correlation	.902**	.367	1
	Sig. (2-tailed)	.000	.189	
	N	156	156	156

For the correlation between performance of fruit exporting firms and transport management, a highly significant positive correlation of r = 0.944 (p < 0.05) is evident. This indicates a strong relationship between the performance of fruit exporting firms and the management of transportation logistics. Efficient transport management practices, including route planning and vehicle scheduling, are likely key factors in ensuring timely delivery and reducing operational costs, thereby positively impacting firm performance. This finding aligns with literature such as that by Kanyepe (2023), which highlights the importance of transport management practices in influencing the performance of organizations, albeit in different industries.

Lastly, the correlation between performance of fruit exporting firms and information flow shows a highly significant positive relationship with an r-value of 0.902 (p < 0.05). This suggests a strong association between firm performance and the efficiency of information flow within the organization. Effective information flow, including communication channels and data sharing practices, likely facilitates decision-making processes and operational efficiency, ultimately leading to improved performance outcomes. While not directly linked to fruit exporting firms, this finding resonates with literature such as that by Gebisa and Ram (2020), which emphasizes the positive impact of information sharing on firm performance in different contexts.

Multiple Regression Analysis
Using multiple regression analysis, the study examined the effect of value chain management practices on performance of fruit exporting firms in Nairobi City County, Kenya which were explained in three tables presented and discussed in sub-sections below.
Model Summary
The study used model summary to test the amount of variation in dependent variable as a result of changes in independent variables. In this study, the amount of variation in performance of fruit exporting firms in Nairobi City County, Kenya as a result of changes in transport management, and information flow was examined. Table 4.5 presets the findings obtained.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.893ª	.797	.786	.06665

a. Predictors: (Constant), Information flow ,Transport management

The R value of 0.893 suggests a very strong positive correlation between the predictors and the performance of fruit exporting firms. This indicates that the predictors collectively explain approximately 79.7% of the variance in the performance of fruit exporting firms, as indicated by the R Square value of 0.797. The Adjusted R Square value of 0.786 also accounts for the number of predictors in the model, suggesting that the model's explanatory power remains high even after adjusting for the complexity of the predictors. These findings therefore indicate that the regression model provides a highly accurate and reliable prediction of the performance of fruit exporting firms based on the specified predictors, suggesting that Information flow and Transport management collectively play a crucial role in determining firm performance.

Analysis of Variance
The ANOVA table provides information about the overall significance of the regression model in predicting the performance of fruit exporting firms based on the specified predictors: Information flow and Transport management. The significance of the model was tested at 95% confidence interval.

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	48.108	2	24.054	6013.5	.000[b]
1	Residual	0.604	153	.004		
	Total	48.712	155			
a. Dependent Variable: Performance of Fruit exporting firm						
b. Predictors: (Constant), Information low and Transport management						

The regression model accounts for a significant amount of variance in the dependent variable, as indicated by a highly significant F-value of 6013.5 ($p < 0.05$). This suggests that the predictors collectively have a significant impact on explaining the variation in the performance of fruit exporting firms. These results indicate that the regression model is highly significant in predicting the performance of fruit exporting firms, with the specified predictors playing a crucial role in explaining variations in firm performance.

Beta Coefficients of the Study Variables
The findings from coefficients table helps to fit the regression model;
Table 7: Beta Coefficients of Study Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.127	.036		3.518	.001
1	Transport management	.366	.020	.379	18.717	.000
	Information low	.241	.016	.280	15.345	.000
a. Dependent Variable: Performance of Fruit exporting firm						

From the findings, the following regression equation was fitted;
$$Y = -0.127 + 0.366 X_1 + 0.241 X_2$$
The constant has a beta value (B) of 0.127, and its significance is reported as .001, indicating that it is statistically significant. This means that even in the absence of any influence from the independent variables, there is still a significant baseline level of performance for fruit exporting firms. This could be due to various factors such as inherent efficiency in the firm's operations, market demand, or other external factors not accounted for in the model.

Moving on to Transport management, the beta coefficient of 0.366 ($p < 0.05$) indicates a strong positive relationship between Transport management practices and the performance of fruit exporting firms. This suggests that effective management of transportation logistics leads to improved firm performance. For every one-unit increase in Transport management practices, there is a corresponding increase in the performance of fruit exporting firms. This finding resonates with Lai and Cheng (2019) who highlights the positive impact of efficient transport management practices, such as route optimization and fleet management, on firm performance in the logistics sector. Thus, the significance of Transport management in this regression model underscores its critical role in driving the performance of fruit exporting firms in Nairobi City County, Kenya.

Information flow also exhibits a significant positive relationship with the performance of fruit exporting firms, with a beta coefficient of 0.241 ($p < 0.05$). This suggests that efficient information flow within organizations leads to improved firm performance. For every one-unit increase in Information flow practices, there is a corresponding increase in the performance of fruit exporting firms. This finding is supported by Liang et al. (2020) research which highlights the positive impact of information flow on firm performance in the context of supply chain management. Thus, the significance of Information flow in this regression model underscores its crucial role in driving the performance of fruit exporting firms in Nairobi City County, Kenya.

Conclusion

The study emphasizes the significance of effective transport management practices in driving the performance of fruit exporting firms in Nairobi City County, Kenya. With a very strong positive correlation and substantial predictive power in the regression model, transport management emerges as a key determinant of firm performance. The agreement among respondents on various transport management aspects, including cost considerations, vehicle tracking systems, safety measures, and route planning, highlights their perceived impact on logistics efficiency and service reliability. Therefore, the study concludes that optimizing transport management processes, such as route planning, vehicle maintenance, and safety measures, is crucial for enhancing the overall performance of fruit exporting firms.

The study highlights the importance of efficient information flow practices in driving the performance of fruit exporting firms in Nairobi City County, Kenya. With a strong positive correlation and significant predictive power in the regression model, information flow emerges as a critical determinant of firm performance. The consensus among respondents on various information sharing practices, supplier collaboration, and responsiveness underscores their perceived impact on supply chain efficiency and relationship management. Therefore, the study concludes that fostering effective information flow mechanisms, such as supplier collaboration platforms and enterprise resource planning systems, is essential for enhancing the overall performance of fruit exporting firms.

Recommendations
To improve transport management and consequently firm performance, fruit exporting firms in Nairobi City County, Kenya should invest in advanced vehicle tracking systems with analytical capabilities to monitor and optimize vehicle performance and route planning. Additionally, considering cost factors such as fuel, maintenance, and labor when scheduling vehicles can lead to cost savings and operational efficiency. Moreover, implementing safety measures and regular vehicle maintenance can ensure the reliability and safety of transport operations. Furthermore, fostering collaboration with transport service providers and leveraging technology for real-time

communication can enhance responsiveness and service delivery. By implementing these recommendations, fruit exporting firms can optimize their transport management practices and improve overall performance outcomes.

To improve information flow practices and enhance firm performance, fruit exporting firms in Nairobi City County, Kenya should establish robust communication channels and collaboration platforms with supply chain partners to facilitate information sharing and transparency. This includes implementing enterprise resource planning systems to streamline information flow and enhance data visibility across the supply chain. Additionally, fostering strong relationships with suppliers and customers through regular communication and feedback mechanisms can improve responsiveness and service quality. Moreover, investing in training and capacity building for employees on information management tools and techniques can enhance their skills in managing and utilizing information effectively. Furthermore, continuous evaluation and improvement of information flow processes based on feedback and performance metrics can drive ongoing enhancements and optimizations. By implementing these recommendations, fruit exporting firms can strengthen their information flow practices and achieve better performance outcomes.

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