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LOGISTICS OUTSOURCING AND PERFORMANCE OF DISTRIBUTION FIRMS IN NAIROBI CITY COUNTY, KENYA

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ABSATRACT

Distribution firms play a crucial role in Kenya's economy by facilitating the movement of goods from manufacturers or suppliers to end consumers, ensuring that products are readily available in the market. However, distribution firms in Kenya have been facing significant challenges that have resulted in declining performance over the years. According to the Kenya National Bureau of Statistics (KNBS), logistics and transportation inefficiencies cost the country up to 12% of its Gross Domestic Product (GDP), which is higher than the global average. The main objective of this study was to investigate the influence of Logistics Outsourcing on performance of distribution firms in Nairobi City County, Kenya. Specifically, the study sought to assess the effect of warehouse management on performance of distribution firms in Nairobi City County, Kenya and to determine the effect of distribution management on performance of distribution firms in Nairobi City County, Kenya. The research design employed is descriptive in nature. According to KIFWA, the study's target audience consisted of 135 respondents from 45 registered distribution companies in in Nairobi city County. Each of the distribution firms' deputy heads and heads of the transport and logistics departments provided responses to the study's questions regarding the impact of Logistics Outsourcing on those firms' operations in Nairobi City County, Kenya. This study made use of census sampling method. The respondents used in pilot test represented 10 percent of the units to be used in data collection. The data obtained was analysed using qualitative and quantitative data, which was analysed using different techniques. The use of means, frequencies, standard deviation and percentages was employed to describe the demographic information of the respondents, which was then presented in form of tables and graphs. Regression analysis was carried out to determine the outcome of the relationship between the independent variables and the dependent variable. The study concludes that warehouse management has a positive and significant effect on performance of distribution firms in Nairobi City County, Kenya. The study also concludes that distribution management has a positive and significant effect on performance of distribution firms in Nairobi City County, Kenya. This study therefore recommends that the management of distribution firms in Nairobi City County should continue embracing value addition operations and warehouse automation to enhance firm performance.

Key Words: Logistics Outsourcing, Warehouse Management, Distribution Management, Distribution Firms in Nairobi City County, Kenya

Background of the Study

Distribution firms play a vital role in the economic structure of a country by serving as intermediaries between producers and consumers (Emel, *et al*, 2021). They facilitate the movement of goods from manufacturers to retailers, ensuring that products reach their intended markets in a timely and efficient manner. This role is crucial for the functioning of the supply chain, as it ensures that products, whether they are raw materials, consumer goods, or industrial products, are available where and when they are needed. Distribution firms help maintain the flow of goods, minimizing stockouts and ensuring that demand is met, which is key to stabilizing prices and ensuring market efficiency (Cho, Ozment, & Sink, 2022).

In addition to their logistical functions, distribution firms also contribute to economic growth by stimulating trade and fostering competition (Kalinzi, 2020). They often operate across regional and national borders, enhancing the flow of goods between different areas and supporting the development of both local and international markets. By improving access to goods and services, distribution firms play a critical role in enhancing consumer welfare and driving economic activity. This, in turn, can lead to job creation, increased tax revenues, and greater market diversity. As distributors expand their networks, they contribute to the overall competitiveness of industries and enhance market access for small and medium-sized enterprises (SMEs) (Kilasi, Juma, & Mathooko, 2019).

Moreover, distribution firms are often integral to supply chain optimization. Through innovations in logistics, inventory management, and digital technologies, these firms enhance efficiency and reduce operational costs (Ndeto, & Mwendwa, 2023). Distribution firms, particularly those involved in technology-enabled logistics, play a pivotal role in modernizing the supply chain by employing strategies such as just-in-time (JIT) delivery and automated inventory systems. This not only improves the availability of goods but also reduces wastage and enhances sustainability efforts. As economies increasingly transition towards digital platforms, distribution firms are key players in ensuring that the last mile of delivery is optimized, meeting consumer expectations for convenience and speed (Achola, 2024).

Logistics outsourcing refers to the practice where companies delegate the management and execution of their logistics operations to third-party service providers, often referred to as third-party logistics (3PL) providers. This can encompass a wide range of logistics functions, including transportation, warehousing, inventory management, order fulfillment, packaging, and distribution. Instead of managing these operations in-house, businesses choose to partner with specialized firms that can perform these tasks more efficiently or at a lower cost, allowing the business to focus on its core competencies (Sizya, 2021).

One of the primary benefits of logistics outsourcing is cost efficiency. By outsourcing logistics functions, companies can avoid the high overhead costs associated with owning and maintaining warehouses, vehicles, and personnel (Kilasi, Juma, & Mathooko, 2019). This can be particularly advantageous for smaller companies that may lack the resources to build an internal logistics infrastructure. 3PL providers often have the scale and expertise to operate more efficiently, leveraging advanced technologies and economies of scale to reduce operational costs. Additionally, outsourcing allows businesses to shift from fixed costs to variable costs, as they only pay for the logistics services they require, depending on demand (Ndeto, & Mwendwa, 2023).

Outsourcing logistics also enables companies to gain access to specialized expertise and advanced technologies that may otherwise be out of reach. Third-party logistics providers invest in state-of-the-art technologies for inventory management, data analytics, and transportation optimization, which can significantly enhance operational efficiency (Achola, 2024). For example, 3PL providers can offer real-time tracking, automated order processing, and advanced route optimization, which improve the accuracy and speed of delivery. This

access to technology can enhance customer satisfaction by providing faster, more reliable service without requiring a company to invest heavily in infrastructure (Sizya, 2021).

Emel et al (2021) investigated on the use of outsourcing logistics activities: The case of turkey. This study is based on a descriptive research model; the population consists of all top 500 companies registered with industrial associations and chambers of commerce in Turkey. A structured survey was selected as a tool for data collection. Findings include the types of logistics services outsourced and planned to outsource, problems encountered in outsourcing these services, logistics costs, decision makers in outsourcing logistics activities, and information sources used in the decision-making process. The findings concluded that the actual purpose of building a BBN model is to provide a decision support system that might assist 3PLs as to which characteristics of firms to consider and what areas to focus on while preparing offers to such firms.

In Tanzania, Sizya (2021) researched on outsourcing supply chain management for tour operators selling tanzania. Outsourcing, as found in this study the majority of the tour operators were aligned on partners, alliances and mergers and acquisitions. The study concluded that This evidence that the tour operators agreed that outsource is better for them to cut costs and increase their profitability and maximize their competitiveness in the tourism business.

Magutu, Maghanga and Nyamwange (2022) studied on the logistics outsourcing drivers, practice and challenges among Tea Processing Firms in Kenya. According to the study findings, logistics outsourcing among the tea firms was most prevalent in operations such as warehousing, fleet management, fleet operations, transport and distribution. The survey also established that some of the challenges faced by the firms as they moved to outsource their business activities included loss of control of the activities, loss of employee loyalty, industrial unrests, switching costs, loss of information to competitors and resistance to change by the stakeholders. The concluded that logistics outsourcing among the tea firms was most prevalent in operations such as warehousing, fleet management, fleet operations, transport and distribution.

Ndeto and Mwendwa (2023) studied on outsourcing logistics management strategies and performance of food and beverage firms in Nairobi city county, Kenya. The results indicated that there was a positive relationship between fourth party logistics and performance of food and beverage firms in Nairobi City County, Kenya. Further, the study results indicated that there was a positive relationship between logistics collaboration and performance of food and beverage firms in Nairobi City County, Kenya 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.

Statement of the Problem

Distribution firms play a crucial role in Kenya's economy by facilitating the movement of goods from manufacturers or suppliers to end consumers, ensuring that products are readily available in the market (Chirchir, 2022). These firms are integral to the supply chain, handling warehousing, transportation, inventory management, and order fulfillment. In Kenya, distribution firms are especially important given the growing retail sector, expanding e-commerce, and the increasing demand for timely and efficient delivery services. Their operations directly impact businesses' ability to meet consumer demand, influence the flow of goods across regional and global markets, and support economic growth (Timna, 2021).

However, distribution firms in Kenya have been facing significant challenges that have resulted in declining performance over the years. According to the Kenya National Bureau of Statistics (KNBS), logistics and transportation inefficiencies cost the country up to 12% of its Gross Domestic Product (GDP), which is higher than the global average. The sector has been hindered by poor infrastructure, high operational costs, rising fuel prices, and inefficient management practices (Makau, 2023). Furthermore, firms are grappling with rising customer

expectations for faster, more reliable delivery services, which has further strained operational capacities. These issues have resulted in delays, increased transportation costs, and a reduction in overall customer satisfaction, negatively impacting the competitiveness and profitability of many distribution firms (Kimeu, 2023).

Logistics outsourcing has emerged as a viable solution to address the operational challenges facing distribution firms in Kenya. By outsourcing logistics functions to specialized third-party logistics (3PL) providers, companies can reduce costs, access advanced technology, and benefit from operational efficiencies that they may not be able to achieve in-house. Outsourcing allows firms to focus on their core competencies while leveraging the expertise and infrastructure of logistics service providers to manage transportation, warehousing, and inventory effectively. Studies have shown that firms that adopt logistics outsourcing experience improved delivery performance, reduced overhead costs, and enhanced customer satisfaction. Given the challenges faced by distribution firms in Kenya, logistics outsourcing offers an opportunity to improve efficiency, streamline operations, and boost overall performance.

Objectives of the Study

General Objectives

The main objective of this study was to investigate the influence of Logistics Outsourcing on performance of distribution firms in Nairobi City County, Kenya

Specific Objectives

i. To assess the effect of warehouse management on performance of distribution firms in Nairobi City County, Kenya

ii. To determine the effect of distribution management on performance of distribution firms in Nairobi City County, Kenya

Theoretical Review

Resource Based Theory

Resource- Based View was first introduced by Wernerfelt (1984), it was later improved by Barney (1991). According to this theory, firms' resources are valuable; enabling firms grasp opportunities presented by their external environments, scarce; not available to all the firms, imperfectly imitable; unique and cannot be replicated by other firms and non- substitutable; cannot be equated with another resource. The theory asserts firms' profitability is determined by its ability to effectively and efficiently exploit its valuable resources. A firm's capability is as a result of the resources it has, which controls the activities the firms can engage itself in. A firm's ability to utilize its capabilities so as to carry out firms' critical activities enables it to attain competitive advantage.

There are four types of capabilities; cross functional capabilities, broad-functional capabilities, activity-related capabilities and specialized capabilities. Due to limited resources available, firms need to concentrate on their core operations and outsource non- core operations. Logistics outsourcing enables firms to efficiently utilize the resource they have by contracting service providers to offer services which are not their core activities. This helps them became more competitive in the market. The theory asserts that firms can only achieve competitive advantage with the help of other key players in its operations such as suppliers and other service providers. Through establishing these relationships with other firms, they are able to pull resources together with complementary resources of partnering firms; establishing a unique resource bundle.

The Network Perspective Theory

The Network Theory of Affect, introduced by Bower (1981), attempts to account for the mood-congruency effect. One of the salient factors of this theory is the importance of mood state during the learning process. The mood state is thought to serve as a cue when recalling this information and included in associations with coincident events. When this emotion unit is activated, it is used as a cue to retrieve its associated events. According to this theory, emotions may be viewed as nodes providing points of contacts within a semantic network. Nodes related to a particular affective state are connected to other nodes of related moods that provide representations of events or connections that were formed during learning.

The organization performance depends not only on how effectively it cooperates with direct partners, but also on how well these partners cooperate with the own business partners in cooperative relationship. The network theory (NT) contributes profoundly to an understanding of the dynamics of inter organisational relations by emphasizing the importance of ‘‘personal chemistry between the parties, the build-up of trust through positive long term cooperative relations and mutual adaptation of routines and systems through exchange process.

Conceptual Framework

The independent variables of the study were warehouse management and distribution management; on the other hand, the dependent variable was performance of distribution firms in Nairobi City County, Kenya. Conceptual framework illustrates how the system of concepts, expectations, beliefs, assumptions and theories informs and support the research and forms key part of the research design.

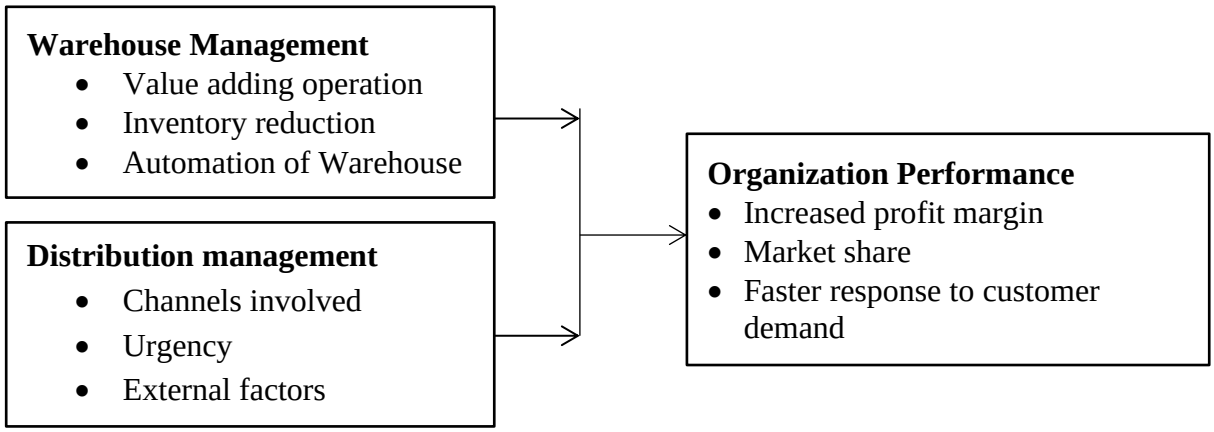

Figure 2. 1: Conceptual Framework

Warehouse Management

Warehouse management encompasses the principles and processes involved in running the day-to-day operations of a warehouse (Mor, Singh & Khan, 2021). At a high level, this includes receiving and organizing warehouse space, scheduling labor, managing inventory and fulfilling orders. Choosing the right WM will depend on the specifics of the warehousing operation and what is to be achieved. Above all, the right WM should help the organization achieve greater efficiency and fulfill orders more accurately so you can do more at a lower cost. Since a primary goal is to save money, ROI is key. Additionally, a WMS should act as a guide to help all warehouse staff become more efficient in the workplace. To do so, the right WMS will provide real-time actionable insights into each aspect of your warehousing operation to help staff be more efficient and programmatic, including receiving, shipping, inventory, order fulfillment, and labor while providing easy-to-understand statistics and reports that managers and workers can easily understand and then use to improve daily and long-term processes. A WMS should

also be scalable so it can help your business grow and adapt to changing market conditions (Chesesio & Makokha, 2021).

One of the main functions of a Warehouse Management is to improve all stock control and tracking. This should in the long run improve all customer satisfaction levels. Also, remove all potential operating costs incurred due to any errors which can improve profits and cost reductions (Chesesio & Makokha, 2021). With a Warehouse Management System, it enables all inventory. Paper work which can be reduced so all tickets, packing lists and reports can all be maintained. Not to mention by streamlining all processes from order to delivery, availability on products can be more accurate by specific delivery dates to customer which in the long haul will reduce customer complaints and an overall improved customer service (Lemma, Singh & Kaur, 2019).

Distribution management

Distribution management refers to the process of overseeing the movement of goods from supplier or manufacturer to point of sale. It is an overarching term that refers to numerous activities and processes such as packaging, inventory, warehousing, supply chain, and logistics. Distribution management is an important part of the business cycle for distributors and wholesalers. The profit margins of businesses depend on how quickly they can turn over their goods. The more they sell, the more they earn, which means a better future for the business. Having a successful distribution management system is also important for businesses to remain competitive and to keep customers happy (Dubey, Bose & Ochoa, 2020).

Distribution management is critical to a company's ability to successfully attract customers and operate profitably. Executing it successfully requires effective management of the entire distribution process. The larger a corporation, or the greater the number of supply points a company has, the more it will need to rely on automation to effectively manage the distribution process. Modern distribution management encompasses more than just moving products from point A to point B. It also involves gathering and sharing relevant information that can be used to identify key opportunities for growth and competitiveness in the market. Most progressive companies now use their distribution forces to obtain market intelligence which is vital in assessing their competitive position (Boardman, 2019).

Empirical Review

Warehouse management and Organization Performance

Joto (2022) did a study to find out the relationship between the dairy supply chain management (DSCM) practices and organizational performance. Various practices of DSCM through extensive literature review is taken into account i.e. Information and Communication Technology Practices, Supplier Relationship Practices, Supply Chain Manufacturing Practices, Inventory management system, Warehousing Management System, Transportation Management System, Customer Relationship Management for establishing the relationship with organizational performance. Organizational implementing supply chain management (SCM) has obtained improved performance. Cost savings, increased revenues and the reduction of defects in products are some of the main advantages of introducing dairy supply chain management. These are also mentioned as long-term goals of the supply chain. Business profitability is closely associated with market and business shares. Based on the long-term goals of the SCM, the organizational performance measures are identified as financial and market performance and customer satisfaction. The study however did not indicate how warehousing influenced the performance of Dairy firms.

Qazi (2020) did a study on the Issues & Challenges Faced by Warehouse Management in the FMCG Sector of Pakistan. Exploratory research has been used in the qualitative approach. The phenomenology research design has been used to reveal the inner thought of perception in certain situations. Research reveals multiple challenges like fast movement inventory flow,

space utilization, abnormal and non-seasonal trends, expire and slow-moving inventory, etc. These issues and challenges are directly affected by warehouse management and their KPIs. The study will help warehouse managers, strategic planners to overcome these issues. The 3PL business may plan their strategies according to the outcome of this study. Papers imply supply chain officials to get a competitive advantage in their effective and efficient warehousing. The study however focused on FMCG on general unlike the current study which is specific on dairy firms.

Distribution management and Organization Performance

Mor, Singh and Khan (2021) identifies predictors to measure distribution performance in the dairy industry and to establish their importance. A distribution model is developed through exploratory structural equation modelling (SEM) techniques. The key performance predictors are marketing and distribution management, quality management, supply chain coordination, and brand management, which account for 71.5% of the variability in distribution performance. The predictor's help improving the distribution performance, specifically in quality, order fill rate, and food safety. The outcomes of this research can help dairy professionals in managing their distribution channels, improving traceability, on-time delivery, and shipment accuracy. Consequently, these factors can improve distribution performance. Four predictors are elicited from the data to estimate the distribution performance and the relative importance of predictors is also established. The study however failed to indicate how distribution management influences the performance of dairy firms.

Chesesio and Makokha (2021) analysed influence of distribution channels on supply chain performance: New KCC Eldoret. The specific objective of the study was to evaluate the effect of product efficiency on supply chain performance in the New KCC. The research employed descriptive research design. The study involved 84 employees from various departments in the company. Data was collected through self-administered questionnaires that consist of both open and closed ended questions. The data was analyzed using both descriptive statistics and inferential statistics. The findings indicated as significant relationship between the product efficiency 0.010. The study concluded that distribution channels have a significant impact on supply chain performance. For any organization to be effective there should be effective distribution management process to convey finished products from the manufacturer to the final consumers. The study however was done in KCC unlike the current study which is a case of Dairy firms.

Lemma, Singh and Kaur (2019) aims to investigate the determinants of supply chain coordination of milk and dairy industries. The data were collected from 330 milk suppliers, processors, and retailers in the central part of Ethiopia. The structural equation modeling has been employed to develop the structural relationship between key constructs and measured variables. In total, 15 measured variables for coordination in the supply chain have been identified. These are further grouped into four factors namely, non-price coordination, price coordination, relationships and product development decision. It has been observed that the implementation of these factors could maximize the coordination linkage among supply chain members.

RESEARCH METHODOLOGY

Research Design

The research design employed is descriptive in nature and focuses on the influence of outsourcing logistics and the performance of dairy industry. Russell (2019) recommends a survey design in the investigation of the views and attitudes of individuals as they are without making any changes or interventions. The researcher was able to accumulate findings from all forms of data such as personal accounts, case studies or observations. This therefore made it

possible to the researcher to collect data that has a numerical as well as a personal observational element involved.

Target Population

The target population is a group of people or study subjects who are related in one or more ways and who are the focus of a survey's research (Martínez-Mesa, González-Chica, Duquia, Bonamigo & Bastos, 2019). According to KIFWA, the study's target audience consisted of 135 respondents from 45 registered distribution companies in in Nairobi city County. Each of the distribution firms' deputy heads and heads of the transport and logistics departments provided responses to the study's questions regarding the impact of Logistics Outsourcing on those firms' operations in Nairobi City County, Kenya.

Sample Size and Sampling Technique

This study made use of census sampling method. The researcher divided the target population into four mutually exclusive groups and then selected a sample from each group. The target population is segmented into three groups with reference to employment status: firms' deputy heads and heads of the transport and logistics departments. The study made use of stratified random sampling Techniques. This implies all of the 135 respondents participated in the study.

Data Collection instrument

In this study, questionnaires were used in the collection of primary data. Structured questionnaires allow the respondents to give more candid and objective responses to research questions (Munn and Drever, 2019). Moreover, the questionnaire contained close – ended and open – ended questions. Closed ended questions were mainly in a 5-point Likert scale that start from strongly disagree. On the other hand, open-ended questions were included in the research instrument in an effort to give the participants a chance for freedom of expression and provide their opinions or views and to make suggestions.

Pilot Study

Pilot study was carried out in Rift valley region to enable validity and reliability of research instruments to be determined. The respondents used in pilot test represented 10 percent of the units to be used in data collection. Those selected for the pilot test were not included in the main study.

Data Analysis and Presentation.

The data obtained was analysed using qualitative and quantitative data, which was analysed using different techniques. The use of means, frequencies, standard deviation and percentages was employed to describe the demographic information of the respondents, which was then presented in form of tables and graphs. Regression analysis was carried out to determine the outcome of the relationship between the independent variables and the dependent variable.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics Analysis

Warehouse Management and Performance of Distribution Firms

The first specific objective of the study was to assess the effect of warehouse management on performance of distribution firms in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on warehouse management and performance of distribution firms in Nairobi City County, Kenya. The results were as shown in Table 4.1

From the results, the respondents agreed that their firm has adopted warehouse management as a logistics outsourcing services. This is supported by a mean of 3.996 (std. dv = 0.865). In addition, as shown by a mean of 3.819 (std. dv = 0.945), the respondents agreed that warehouse

management influences firm performance. Further, the respondents agreed that warehouse management in their firm is effective enough. This is shown by a mean of 3.798 (std. dv = 0.611).

The respondents also agreed that they are satisfied with the effectiveness of warehouse management in their organization. This is shown by a mean of 3.731 (std. dv = 0.908). With a mean of 3.711 (std. dv = 0.776), the respondents agreed that dairy products in their firms are properly management to minimize wastage. The respondents agreed that their organization has ensured warehouse automation. This is shown by a mean of 3.675 (std. dv = 0.897).

Table 4.1: Warehouse Management and Performance of Distribution Firms

	Mean	**Std. Dev.**
Our firm has adopted warehouse management as a logistics outsourcing services	3.996	0.865
warehouse management influences firm performance	3.819	0.945
Warehouse management in our firm is effective enough	3.798	0.611
Am satisfied with the effectiveness of warehouse management in our organization	3.731	0.908
Dairy products in our firms are properly management to minimize wastage	3.711	0.776
Our organization has ensured warehouse automation	3.675	0.897
Aggregate	**3.732**	**0.841**

Distribution Management and Performance of Distribution Firms

The second specific objective of the study was to determine the effect of distribution management on performance of distribution firms in Nairobi City County, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to distribution management and performance of distribution firms in Nairobi City County, Kenya. The results were as presented in Table 4.2.

From the results, the respondents agreed that their organization has adopted distribution management. This is supported by a mean of 4.168 (std. dv = 0.905). In addition, as shown by a mean of 3.959 (std. dv = 0.885), the respondents agreed that various channels are involved in distribution management in their firm. Further, the respondents agreed that distribution management channels adopted by their firm are effective. This is shown by a mean of 3.920 (std. dv = 0.605). The respondents also agreed that dairy products in their firm reach to the customers on time. This is shown by a mean of 3.915 (std. dv = 0.981).

The respondents agreed that external factors influence distribution management channels adopted. This is supported by a mean of 3.911 (std. dv = 0.873). In addition, as shown by a mean of 3.897 (std. dv = 0.786), the respondents agreed that flexibility of distribution channels influence organization performance.

Table 4. 2: Distribution Management and Performance of Distribution Firms

	Mean	**Std. Dev.**
Our organization has adopted distribution management	4.168	0.905
Various channels are involved in distribution management in our firm	3.959	0.885
Distribution management channels adopted by our firm are effective	3.920	0.605
Dairy products in our firm reach to the customers on time	3.915	0.981
External factors influence distribution management channels adopted	3.911	0.873
Flexibility of distribution channels influence organization performance	3.897	0.786
Aggregate	**3.890**	**0.867**

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (warehouse management and distribution management) and the dependent variable (performance of distribution firms in Nairobi City County, Kenya) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients.

Table 4. 3: Correlation Coefficients

		Firm Performance	Warehouse Management	Distribution Management
Firm Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	121		
Warehouse Management	Pearson Correlation	.858**	1	
	Sig. (2-tailed)	.001		
	N	121	121	
Distribution Management	Pearson Correlation	.906**	.189	1
	Sig. (2-tailed)	.000	.081	
	N	121	121	121

Moreover, the results revealed that there is a very strong relationship between warehouse management and performance of distribution firms in Nairobi City County, Kenya (r = 0.858, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings conform to the findings of Joto (2018) that there is a very strong relationship between warehouse management and firm performance.

The results also revealed that there was a very strong relationship between distribution management and performance of distribution firms in Nairobi City County, Kenya (r = 0.96, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the results of Mor, Singh and Khan (2021) who revealed that there is a very strong relationship between distribution management and firm performance

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (warehouse management and distribution management) and the dependent variable (performance of distribution firms in Nairobi City County, Kenya)

Table 4. 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.925	.848	.849	.10120

a. Predictors: (Constant), warehouse management and distribution management

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.856. This implied that 85.6% of the variation in the dependent variable (performance of distribution firms in Nairobi City County, Kenya) could be explained by independent variables (warehouse management and distribution management).

Table 4. 5: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	2	6.014	52.95	.000[b]
	Residual	6.568	118	.056		
	Total	18.595	120			

a. Dependent Variable: Performance of distribution firms
b. Predictors: (Constant), warehouse management and distribution management

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 52.95 while the F critical was 2.449. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of warehouse management and distribution management on performance of distribution firms in Nairobi City County, Kenya.

Table 4. 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.311	0.071		4.380	0.000
	warehouse management	0.486	0.107	0.487	4.542	0.000
	distribution management	0.398	0.095	0.399	4.061	0.001

a Dependent Variable: Firm Performance

The regression model was as follows:

$$Y = 0.311 + 0.486X_1 + 0.398X_2 + \varepsilon$$

The results also revealed that warehouse management has significant effect on performance of distribution firms in Nairobi City County, Kenya, β1=0.486, p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings conform to the findings of Joto (2018) that there is a very strong relationship between warehouse management and firm performance.

In addition, the results revealed that distribution management has significant effect on performance of distribution firms in Nairobi City County, Kenya β1=0.398, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings are in line with the results of Mor, Singh and Khan (2021) who revealed that there is a very strong relationship between distribution management and firm performance

Conclusions

The study concludes that warehouse management has a positive and significant effect on performance of distribution firms in Nairobi City County, Kenya. The study revealed that value adding operation, inventory reduction and automation of Warehouse influence performance of distribution firms in Nairobi City County, Kenya

The study also concludes that distribution management has a positive and significant effect on performance of distribution firms in Nairobi City County, Kenya. The study revealed that channels involved, urgency and external factors influence performance of distribution firms in Nairobi City County, Kenya.

Recommendations

The study found that warehouse management has a positive and significant effect on performance of distribution firms in Nairobi City County, Kenya. This study therefore recommends that the management of distribution firms in Nairobi City County should continue embracing value addition operations and warehouse automation to enhance firm performance.

The study also found that distribution management has a positive and significant effect on performance of distribution firms in Nairobi City County, Kenya. This study therefore recommends that the management of distribution firms in Nairobi City County should consider channels involved, urgency and external factors.

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