Transportation management as a supply chain driver and performance of large manufacturing firms in Kenya

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https://doi.org/10.51867/ajernet.6.3.26

ABSTRACT

The manufacturing sector in Kenya stands to be at the centre of economic growth and development owing to its role in job creation and value addition. Despite its promising potential, the sector has over the past five years faced stagnation and overall decline in performance, as a result of accelerating disruptions in the operating environment such as sky rocketing costs of production, political instability, increased competition, unpredictable policy frameworks among others. Available evidence shows that one of the major supportive aspects that could enable modern businesses particularly manufacturing firms to be more resilient and competitive amid the disruptions is transportation management, which helps streamline the logistics processes for cost-efficiency, timely deliveries, and customer satisfaction. However, there remains scant evidence on embrace of transportation management as a supply chain driver in large manufacturing firms in Kenya, hence the motivation of this study. The study was anchored on Transaction Cost Economics theory, which upholds the essence of streamlining processes like transportation to minimize on costs and maximize on value. Using a cross-sectional research design, the study targeted supply chain managers drawn from 553 large manufacturing firms in Kenya. Using Slovin's sampling formula, a total of 233 respondents were sampled. A questionnaire was used to collect primary data, which was analyzed using quantitative and qualitative techniques. The findings revealed that transportation management had not been effectively embraced among most of the surveyed large manufacturing firms in Kenya. It was also uncovered that the large manufacturing firms recorded declining and unstable performance for the period under review. The downward trend in performance was strongly correlated with low embrace of transportation management, implying that transportation management significantly influenced performance of large manufacturing firms. This raises the need for supply chain managers in large manufacturing firms in Kenya to uphold effective transportation management to strengthen and streamline the flow of goods across the supply chain network for enhanced performance.

Key Words: Firm Performance, Large Manufacturing Firms, Supply Chain Drivers, Transportation Management

I. INTRODUCTION

In today's fast-paced and highly volatile business environment, characterized by frequent disruptions, increased competition, and rapidly evolving customer expectations, organizations are compelled to adopt innovative approaches to sustain their market presence and improve overall performance (Halassa & Al Saed, 2023). One such strategic approach is the streamlining of supply chain processes and functions to facilitate the seamless and efficient flow of goods, information, and resources across the supply chain network (Tarigan et al., 2021). Efficient supply chain management has become a critical priority for manufacturing firms aiming to enhance operational performance, reduce costs, and respond effectively to market demands. Despite the growing emphasis on enhancement of supply chain processes, the outcomes of such initiatives have been inconsistent.

As Emon (2025) observes, while some organizations have recorded significant improvements in their performance following the adoption of streamlined supply chain management processes, others have seen minimal or no significant improvements. This disparity underscores the need to examine the underlying factors that influence the success of supply chain approaches. Alsmairat (2021) points out that the effectiveness of a supply chain in contributing to organizational performance largely hinges on specific foundational elements known as supply chain drivers. These drivers serve as the critical enablers that support and sustain the core functions of the supply chain, including procurement, production, distribution, and customer service.

According to Koul and Ghatak (2024), supply chain drivers refer to the strategic inputs and operational levers that an organization deploys to optimize supply chain efficiency and responsiveness. They are the fundamental components that determine the performance, efficiency, and responsiveness of a supply chain (Emon, 2025). These

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include key elements such as facilities, inventory, transportation, information, sourcing, and pricing all of which collectively determine how well a supply chain can perform (Attia et al., 2023). Therefore, understanding the role and impact of supply chain drivers is essential for manufacturing firms seeking to improve performance outcomes. This study sought to examine the extent to which transportation management influence the performance of large manufacturing firms in Kenya providing empirical insights that can guide strategic decision-making and enhance supply chain effectiveness in a dynamic business landscape.

Globally, manufacturing sector is recognized as one of the fundamental sectors that contribute significantly to economic growth and development in both developed and developing countries (World Bank, 2022). Despite its immense contribution to the global economic landscape, the manufacturing sector remains one of the most vulnerable industries to any supply chain disruptions, as it relies on a dynamic and complex supply chain network that is both upstream and downstream in nature (International Trade Administration, 2024). This calls for not only integration of robust supply chain management aspects, but also to embrace key enablers (supply chain drivers) of these Supply Chain Management (SCM) aspects for better results. In Kenya, the manufacturing firms face similar dynamics in their supply chain network, however integration of key supply chain drivers to support the supply chain strategies has not been adequately addressed empirically. According to Dalal et al. (2023), it remains imperative to address the antecedents (essential drivers) of supply chain that could enable the manufacturing sector achieve the ultimate goal of supply chain management which is to meet customer demands while balancing costs, speed, and flexibility.

Transportation management refers to the process overseeing the movement of people, goods, or materials from one place to another (Samita et al., 2020). It encompasses various modes such as road (via vehicles like cars, trucks, and buses), rail (trains), air (airplanes), water (ships, boats), and even pipelines for certain materials. Transportation serves to connect different locations, facilitate trade and commerce, enable travel and tourism, and support economic and social activities. It plays a fundamental role in the functioning of societies and economies by providing access to resources, markets, employment opportunities, and essential services. Additionally, transportation involves infrastructure, regulations, logistics, and systems designed to ensure the efficient and safe movement of passengers and cargo (Muhalia et al., 2021).

Transport Load Planning involves the strategic organization and optimization of cargo loads for transportation. It includes determining the most efficient allocation of goods to vehicles, considering factors such as weight, volume, destination, and delivery deadlines. Transport load planning aims to maximize the use of transportation resources while minimizing costs and transit times. Advanced software systems and algorithms are often used to assist in load planning, helping companies streamline operations, reduce empty space in vehicles, and improve overall efficiency (Coltman, 2017).

Logistics outsourcing refers to the practice of hiring third-party logistics (3PL) providers to handle various aspects of the supply chain, including transportation, warehousing, inventory management, and order fulfilment. Companies may choose to outsource logistics functions to specialized firms to leverage their expertise, resources, and networks (Adelwini et al., 2023). Outsourcing logistics can offer several benefits, such as cost savings, access to advanced technology and infrastructure, scalability, and flexibility. It allows businesses to focus on their core competencies while relying on external partners to manage complex logistical operations efficiently (Musau et al., 2017).

On-time delivery is a critical performance metric in transportation and logistics. It refers to the ability to deliver goods or services to customers within the agreed-upon timeframe or specified delivery window. Achieving on-time delivery requires effective planning, coordination, and execution of transportation operations (Musau et al., 2017). This includes factors such as accurate scheduling, reliable transportation services, efficient route planning, proactive communication with customers, and contingency planning for unforeseen events or delays. Meeting on-time delivery commitments is essential for customer satisfaction, maintaining competitiveness, and building trust and loyalty with clients (Adebayo & Aworemi, 2021).

1.1 Statement of the Problem

The manufacturing industry is a pivotal sector in Kenya's economic landscape, contributing significantly to employment creation, foreign exchange earnings, and national development goals outlined in Vision 2030 (Ngesa & Namusonge, 2023). Despite its strategic importance, the performance of large manufacturing firms in Kenya has been on a consistent decline, with evidence from the Kenya National Bureau of Statistics (KNBS, 2024) showing that manufacturing firms' contribution to the GDP dropped from 9.3% in 2016, to 7.8% in 2022 and further to 7.3% in 2024. While the large-scale manufacturing firms contribute the largest portion of the sector's productivity, they recorded the largest decline in overall productivity from 42% in 2022 to 36% in 2024. Moreover, at least seven (7) large manufacturing firms in Kenya exited the market either completely or shifted their production to other countries between 2021 and 2024. This downward trajectory raises a concern over the ability of the sector to withstand the changing dynamics in the operating environment (Kenyan Association of Manufacturers [KAM], 2024). Available

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empirical evidence shows that transportation management is fundamental in enhancing seamless flow of both inbound and outbound logistics for cost efficiency, responsiveness ad overall performance. However, there exists scarce empirical evidence in a local context on the extent to which large manufacturing firms in Kenya embrace transportation management. The study therefore sought to bridge this gap by assessing the effect of transportation management on the performance of large manufacturing firms in Kenya.

1.2 Research Objectives

i. To examine the extent to which transportation management as a supply chain driver has been embraced among large manufacturing firms in Kenya
ii. To establish the current performance status of large manufacturing firms in Kenya.
iii. To evaluate the relationship between transportation management and performance of large manufacturing firms in Kenya.

1.3 Research Hypotheses

H_O: Transportation management has no significant effect on performance of large manufacturing firms in Kenya.
H_A: Transportation Management has a significant effect on performance of large manufacturing firms in Kenya

II. LITERATURE REVIEW

2.1 Theoretical Review

The paper was anchored on Transaction Cost Economics (TCE) theory by Oliver Williamson (1979). The theory analyzes the costs associated with economic transactions among corporates and how these costs can be contained to enhance organizational effectiveness (Williamson, 2010). It emphasizes on how organizations can structure themselves to minimize these transaction costs and optimize efficiency. TCE helps explain why firms may choose to perform activities in a given manner as opposed to the tradition framework, implicating the need for saving on transactional costs and maximizing value for enhanced performance (Roeck et al., 2020). According to Ketokivi and Mahoney (2020), entities such as the large manufacturing firms face diverse costs of undertaking their mandates, and if these costs are not controlled, they are likely to crumble the effectiveness of the firms.

In an operating environment where there are competing needs, organizations that aim at being effective and seamless mitigating modern-day dynamics, ought to contain costs by optimizing their transportation processes, especially the manufacturing firms where transportation takes a major portion of their costs despite this not being their core business function (Cuypers et al., 2021). This brings the context of transportation management as a core supply chain driver, which aims at integrating and streamlining the transportation processes and function of the manufacturing firms to save on costs and optimize the available transportation solutions. TCE theory provides valuable insights into how effective management of transportation can impact the costs and enhance efficiencies in supply chain processes of the manufacturing firms.

Transportation represents a critical driver of supply chain that enables the movement of raw materials, intermediate goods, and finished products across the supply chain network (Cuypers et al., 2021). This implies that transportation decisions inherently involve recurring transactions with external logistics providers, shippers, and distributors, all of which can be costly and complex (Ketokivi & Mahoney, 2020). TCE theory, therefore, highlights that when the transaction costs associated with such logistics arrangements are high due to factors such as asset specificity, uncertainty, and transaction frequency firms are more likely to internalize transportation functions or establish long-term strategic partnerships to minimize risk and enhance control (Rindfleisch, 2020). The TCE theory, therefore, provided the theoretical foundation for examining transportation management as a supply chain driver that can significantly impact the performance of large manufacturing firms in Kenya.

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2.2 Conceptual Framework

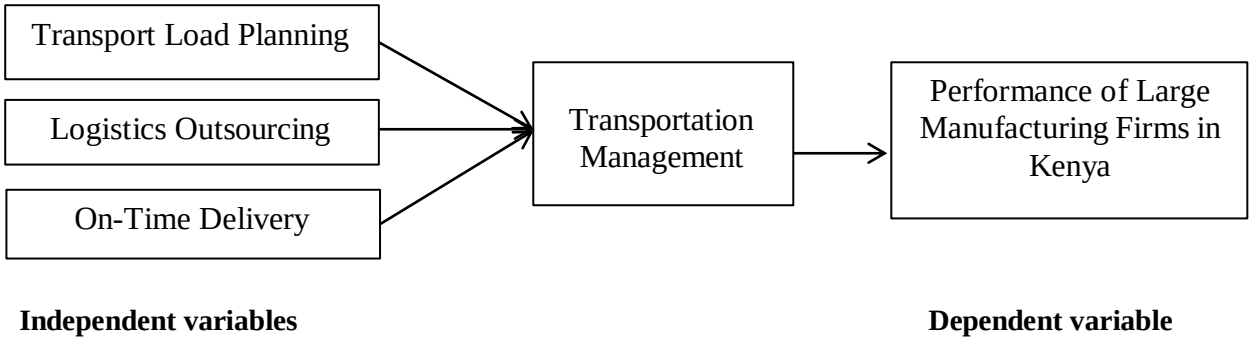

Figure 1
Conceptual Framework

2.3 Empirical Review

Adebayo and Aworemi (2021) researched on transport management practices and firms' performance in Nigeria. The study indicated that transport management practices have significant effect on logistics performance of the selected food and beverages companies. This implied that an increase in firms' performance can be influenced by embracing transport management practices within the logistics management function. Also, the study tested and confirmed the conceptual model built as well as the hypothesis postulated. Thus, the study concluded that transport management positively influences firm performance. This research notes that reduced freight expenses, enhanced shipment tracking, vehicle routing and scheduling influences firms' logistics performance. This indicates the importance of transport management practices in driving firm performance. However, based on the finding of the study, it was recommended that managers of the sampled firms should in addition to the use of transport management practices develop a dynamic transportation strategy for their supply chains that must be responsive, both as to service and cost demands and in addition, implement logistics that goes beyond the use of traditional information and communication technology to further drive performance.

Izabayo and Nimpano (2025) carried out a study in Rwanda on the effect of transportation management on performance of organizations in Rwanda. The study focused on Dubai Ports World in Rwanda, and sought to evaluate how transportation scheduling, transport planning and transport tracking as key transportation management practices influenced organizational performance. The authors utilized a descriptive and correlational approach and obtained data from 181 participants using a structured questionnaire. Their findings revealed that transportation management practices including transport route planning, transport scheduling, and transport tracking had a strong correlation with organizational performance. Their study concluded that through continued emphasis on optimizing transportation processes, organizations were able to meet shorter lead times and timely deliveries, thus saving on costs while promoting customer satisfaction. Their findings concur with those by Ngesa and Namusonge (2023) who while focusing on logistics firms in Kenya established that transportation management through freight management and route planning was integral in streamlining and optimizing transportation processes thus significantly contributing to enhanced performance.

Musau et al. (2017) researched on the effect of transport management on organizational performance among Textile Manufacturing Firms in Kenya. The study was guided by the cooperative game theory. The study adopted the convergent parallel mixed methods design. The study targeted a total of 196 respondents drawn from employees of procurement departments and departmental heads of respective 15 textile manufacturing industries operating in Nairobi City County. The sample size was therefore 139 respondents. Stratified and simple random sampling methods were used to select employees of procurement departments from their respective textile firms. Questionnaires and interview schedules were used to gather the data from primary sources. The study applied the use of both qualitative and quantitative data. The study revealed that transport management influences organizational performance among Textile Manufacturing Firms in Kenya.

III. METHODOLOGY

3.1 Research Design and Philosophy

This study adopted a cross-sectional research design, which involves collecting data from different individuals at a single point in time, allowing for observation without manipulation (Dubey & Kothari, 2022). It enabled generalization across large manufacturing firms, enhancing external validity and minimizing bias. The research was

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grounded in the positivist philosophy, which emphasizes objectivity, measurable facts, and empirical validation (Cooper & Schindler, 2017). Positivism supports hypothesis testing and knowledge acquisition through observable phenomena, aligning well with the study's aim to assess the effect of transportation management as a supply chain driver on performance of large manufacturing firms in Kenya using statistical inference.

3.2 Target Population and Sampling

The target population for the study comprised of 553 supply chain managers drawn from the 553 large manufacturing firms registered in Kenya as per the Kenya Association of Manufacturers (KAM, 2024). The firms are classified into 12 major categories based on their specialization/sub-sectors. Using Slovin sampling formula, the study established an appropriate sample size of 233 respondents. The sample size is computed as follows:

$$n = \frac{N}{1 + \text{Ne}2}$$

Whereby:

n = Appropriate sample size
N = Target population (553)
e = error margin / margin of error (0.05)

$$n = \frac{553}{1 + (553 * 0.05^2)}$$
$$n = 232.109$$

3.3 Data Collection and Analysis

The study utilized a questionnaire to collect primary data. The questionnaire contained both closed-ended and open-ended questions to collect quantitative and qualitative data respectively. The collected data was analyzed using both quantitative and qualitative analysis techniques.

IV. FINDINGS & DISCUSSION

4.1 Response Rate

The study had a sample of 233 respondents, who were issued with questionnaires. Out of the 233 questionnaires issued, 227 were dully filled and returned for analysis. This represented a response rate of 97.4%, which according to Curtis (2025) was considered adequate for analysis.

4.1.1 Integration of Transportation Management in Large Manufacturing Firms

The findings as shown in Table 1 revealed that there was ineffective embrace of transportation management as a supply chain driver in most of the surveyed large manufacturing firms in Kenya. This is evidenced by the aggregate mean score of 2.473, which is an indication of a generally low level of agreement among respondents regarding the effective implementation of transportation management practices. The standard deviation of 0.845 indicates a moderate level of variability in responses, implying some divergence in practices across firms. The findings suggested that transportation management as one of the supply chain drivers had been ineffectively upheld among most of the large manufacturing firm surveyed; a matter that could potentially hinder supply chain effectiveness and performance of the firms. The findings are consistent with Adelwini et al. (2023), who argued that strategic transport planning is a foundational element for achieving operational excellence in supply chains. Failure to embrace planning reflects a reactive approach to logistics management, rather than a proactive, performance-driven strategy. The findings also concur with those by Buyko (2022) who emphasized that efficient transport load planning, often enabled through Transportation Management Systems (TMS) and algorithms, is essential for cost reduction and timely delivery. Further, Ghamisi et al. (2021) noted that firms integrating Artificial Intelligence (AI) and Internet of Things (IoT) technologies into transportation management achieve significant logistics cost savings compared to firms relying on traditional planning. Thus, the low levels of systematic load planning and technology utilization in Kenyan firms could contribute to higher transport costs, delays, and inefficiencies.

According to James and Inyang (2022), reliable and timely delivery is a critical Key Performance Indicator (KPI) for supply chain success. Delays erode customer trust, increase inventory costs, and disrupt production schedules. Similarly, Olaleke (2023) observed that firms that did not establish strict KPIs for transport providers faced frequent service disruptions, leading to performance volatility. The findings therefore reveal a critical gap in delivery reliability management, undermining overall supply chain performance.

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Table 1

Descriptive Statistics on Transportation Management

Statement	Mean	Std. Dev.
Our organization systematically plans transport loads to optimize efficiency and minimize costs.	2.635	1.054
We utilize advanced technologies and algorithms to optimize transport load planning processes.	2.619	0.933
Our organization has embraced transport load planning to ensure timely and cost-efficient deliveries.	2.531	0.877
Our organization frequently outsources logistics functions to specialized third-party providers.	2.624	1.109
Outsourcing logistics operations has allowed our firm to focus on core manufacturing activities and strategic decision-making.	2.405	0.807
We regularly evaluate the performance and cost-effectiveness of our logistics outsourcing partnerships.	2.271	0.873
Meeting on-time delivery commitments is a top priority for our organization.	2.453	0.664
We closely monitor and track the on-time delivery performance of our transportation providers.	2.343	0.814
Our organization has upheld consistency in on-time delivery for better reputation.	2.574	0.888
Transport load planning is regularly reviewed and refined to adapt to changing market conditions and customer requirements.	2.536	0.572
Our organization conducts periodic audits and assessments to evaluate the performance and reliability of logistics outsourcing partners.	2.312	0.708
Aggregate Score	**2.473**	**0.845**

4.1.2 Qualitative Data Analysis Results on Integration of Transportation Management

The findings from qualitative data on the integration of transportation management as a supply chain driver revealed that most of the surveyed large manufacturing firms had not effectively embraced transportation management. One of the recurring themes was on lack of strategic transport planning, where most respondents felt that their respective organizations did not effectively plan for their transportation systems, thus limiting the effectiveness of supply chain. One respondent noted the following:

> *"Our transport systems are mostly reactive. We respond to delivery requests as they come in rather than following a structured plan."*

The statement reflects the overall sentiment that firms lacked systematic approaches to transport load planning. Such reactive models not only increase logistics costs but also result in inefficiencies and delivery delays. As AlKheder *et al.* (2022) emphasized, strategic transportation planning, particularly when supported by advanced tools like Transportation Management Systems (TMS), is vital for enhancing cost-efficiency and ensuring timely deliveries. The limited use of such technologies, as reported by the respondents, corroborates this gap.

A theme on logistics outsourcing was also noted, where most of the respondents frequently reported that outsourcing was irregular and ineffectively managed, thus limiting the effectiveness and responsiveness of their supply chain processes. The following were sentiments from one of the respondents:

> *"We outsource transport, but the service quality is inconsistent because we don't evaluate the providers regularly. There's no clear framework for performance review."*

This anecdote underscores a systemic issue on ineffective performance monitoring for third-party logistics providers (3PLs). James and Inyang (2022) observed that while outsourcing has potential to boost efficiency, without structured oversight and frequent evaluations, the benefits remain unrealized. Respondents expressed concern over inadequate tracking mechanisms, further affecting the effective and timely deliveries. One participant remarked:

> *"We do not have systems to track delivery punctuality; we usually rely on driver reports, which are not always reliable."*

The finding highlights the operational inefficiencies stemming from insufficient investment in tracking systems. Literature by Muhalia *et al.* (2021) supports these claims, noting that poor monitoring and the absence of KPIs for delivery performance result in disruptions, damaged reputations, and loss of customer trust.

The results revealed a prevailing pattern of inadequate investment, planning, and oversight in transportation management, corroborating the descriptive results where most of the respondents disagreed on embrace of key aspects of transportation management as a supply chain driver. These inefficiencies as noted by Puvanasvaran *et al.* (2020) hinder supply chain performance and competitiveness. The results echo Olaleke's (2023) argument that without embracing modern tools, developing dynamic logistics strategies, and enforcing regular performance assessments, firms risk lagging behind in today's complex supply chain environments. Nurmasari *et al.* (2025) emphasized that structured transport load planning is essential for minimizing logistics costs and improving service reliability.

4.1.3 Performance of Large Manufacturing Firms in Kenya

The study assessed the performance of large manufacturing firms, and from the findings (*fig. 2*), there is a downward trend for sales revenue between 2019 and 2021, and a slight increase in 2022 and 2023. This shows a fluctuation in sales revenue for the large manufacturing firms, which implies that the sector is not yet stable especially

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after the disruptions from the Covid-19 Pandemic.

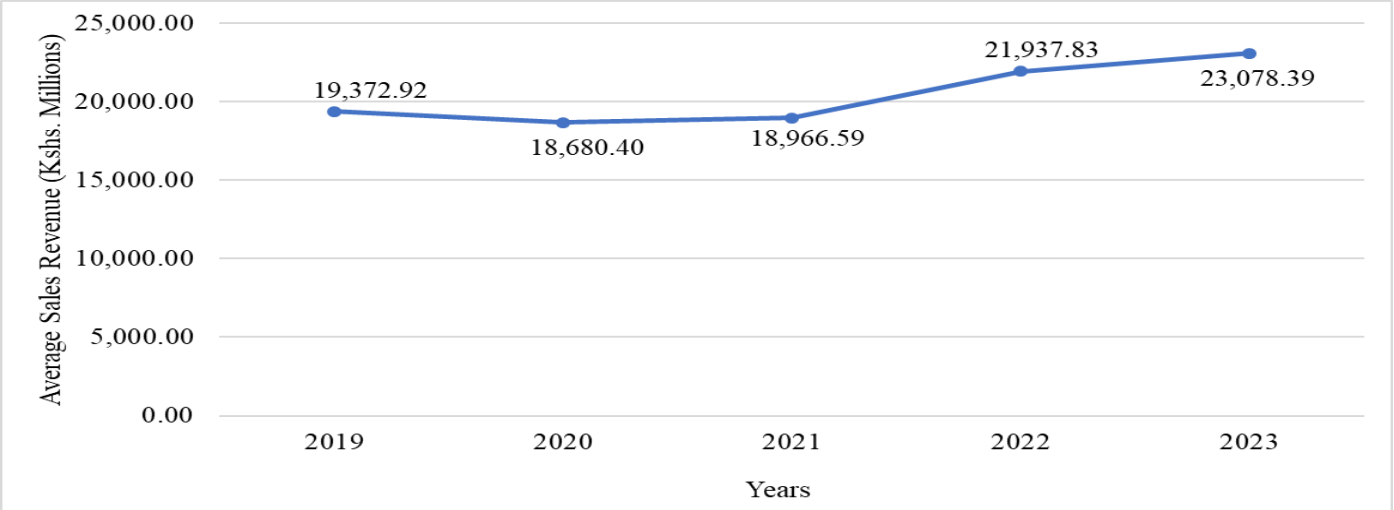

Figure 2
Sales Revenue for the Large Manufacturing Firms in Kenya

Further, performance of the large manufacturing firms in Kenya was sought using profitability of the firms, and as the trend on Figure 3 portray, the average profits recorded by the large manufacturing firms has been on decline from 2019 to 2023, implying that while there have been some instances of revenue growth, the profits have not stabilized across the sector, an indication of a volatile operating market.

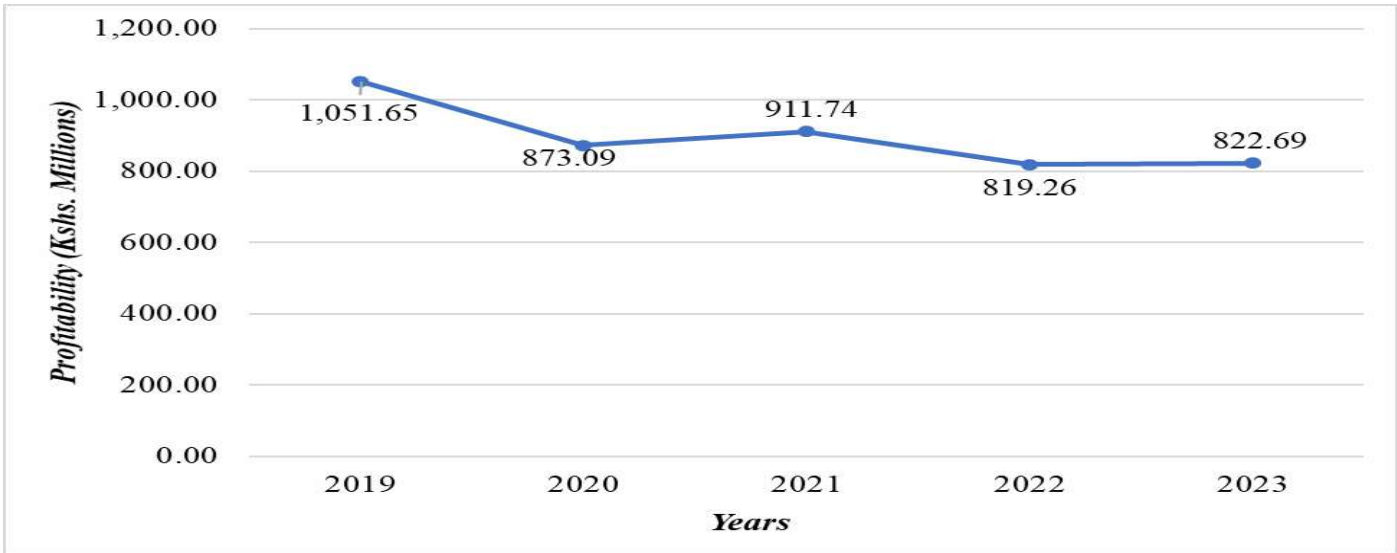

Figure 3
Profits Margin for the Large Manufacturing Firms in Kenya

Return on Assets (ROA) was another measure used to assess the performance of large manufacturing firms in Kenya. The results (Fig. 4) revealed that the ROA for the large manufacturing firms has been on a decline from 2019 with a slight increase in 2021. The results show that the ROA had minimal recovery after Covid-19 Pandemic, with an increase to 8.5% in 2021, but this was short-lived as there was a decline to 7.9% in 2022. Such a decline implies an unpredictable market which therefore calls for the realignment of supply chain processes and embrace of transportation management as one of the supply chain drivers which were found highly missing among the surveyed large manufacturing firms.

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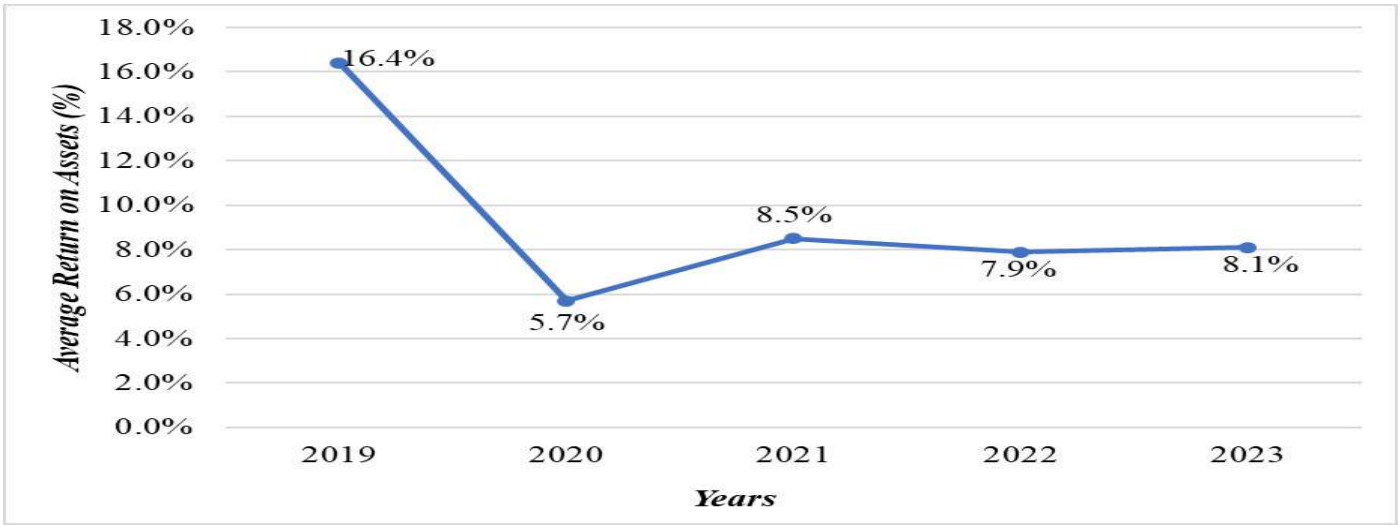

Figure 4
Return on Assets for the Large Manufacturing Firms in Kenya

4.2 Correlation Analysis

Correlation analysis results on the relationship between transportation management and performance of large manufacturing firms in Kenya (Table 2) revealed that transportation management had a strong positive (r=0.698) and significant (P=0.000<0.01) correlation with performance of large manufacturing firms in Kenya. The findings concur with those by Adebayo and Aworemi (2021) who established that transportation management was one of the five fundamental supply chain drivers, arguing that effective transportation ensures timely delivery, reduces lead times, and enhances overall customer satisfaction factors that directly contribute to firm performance. Further, Nurmasari *et al.* (2025) established that transportation management was critical in determining the operational efficiency of modern organizations, thus steering their continued performance.

Table 2
Correlation Results for Transportation Management and Firm Performance

Variable		Performance of Large Manufacturing Firms	Transportation Management
Performance of Large	Pearson Correlation	1	.698**
Manufacturing Firms	Sig. (2-tailed)		.000
	N	227	227
Transportation	Pearson Correlation	.698**	1
Management	Sig. (2-tailed)	.000	
	N	227	227

4.3 Hypotheses Testing

A regression analysis was used to test the research hypotheses. The following hypotheses were tested:
H_O: Transportation management has no effect on performance of large manufacturing firms in Kenya.
H_A: Transportation management has a significant effect on performance of large manufacturing firms in Kenya.
The following model was used:

$$Y = \beta o + \beta_{TM} X_{TM} + \varepsilon$$

Where:

$\boldsymbol{Y}$ is performance of large manufacturing firms, $\boldsymbol{\beta_0}$ is constant term, $\boldsymbol{\beta_{TM}}$ is coefficient for Transportation Management, $\boldsymbol{X_{TM}}$ is the independent variable (Transportation Management); and ε is the error term.

The results as shown in Table 3 revealed that the R-Square for the model was 0.487, an implication that 48.7% of the variation in performance of large manufacturing firms in Kenya was as a result of transportation management. The ANOVA test results showed that the model was statistically significant to test the hypotheses (F=66.746; P=0.000<0.05). The regression coefficients revealed that a Beta coefficient of 0.511 was obtained, implying that a unit change in transportation management influenced performance of large manufacturing firms in Kenya by 51.1%. The results revealed that transportation management had a significant influence on performance of large manufacturing firms in Kenya (P=0.000<0.05). Based on the results, the null hypothesis that transportation management has no significant effect on performance of large manufacturing firms in Kenya was rejected, and the

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alternative that transportation management has positive significant effect on performance of large manufacturing firms in Kenya accepted. The findings conform to those of Adebayo and Aworemi (2021) who found that transport management practices have significant effect on logistics performance of the selected food and beverages companies.

Table 3

Regression Results on Transportation Management and Firm Performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.698	0.487	0.473	0.56021

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.780	1	25.780	66.746	0.000
	Residual	86.933	225	0.386		
	Total	112.713	226			

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		(B)	Std. Error	Beta		
1	(Constant)	1.007	0.208		4.838	0.000
	Transportation Management	0.511	0.056	0.487	9.063	0.000

a. Dependent Variable: Performance of Large Manufacturing Firms

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concluded that transportation management is a crucial supply chain driver that significantly influences performance of large manufacturing firms in Kenya. While it was evident that transportation management was a key supply chain driver, the driver is significantly underdeveloped and inadequately leveraged among large manufacturing firms in Kenya. Despite its strong correlation with firm performance, transportation functions remain largely reactive, lacking strategic planning, technological integration, and performance monitoring. The absence of structured approaches to route planning, delayed adoption of modern tracking systems, and ineffective outsourcing management all contribute to inefficiencies, delayed deliveries, and elevated operational costs. The findings underscore a critical disconnect between transportation management and broader supply chain objectives, suggesting that without targeted reforms, firms will continue to face performance limitations rooted in logistical weaknesses. This is a justification that the noted declining performance of the large manufacturing firms is strongly associated with the ineffective embrace of transportation management as a supply chain driver.

5.2 Recommendations

The manufacturing sector in Kenya plays a pivotal role in the country's economy, thus there is need for the stakeholders in the industry including the management, government and policy makers to develop policies and measures that strengthen key processes on transportation management that enable the sector to be more resilient and capable of being competitive.

The management of large manufacturing firms has a duty to support transportation processes in their firms by developing and implementing strategic transportation plans that streamline how transportation is done in line with the overall business strategy. Large manufacturing firms in Kenya should move away from reactive logistics practices and adopt proactive, structured transportation strategies. This involves aligning transportation management with supply chain and corporate objectives. Strategic planning should include clear performance targets, risk mitigation plans, and contingency frameworks to improve reliability and cost-effectiveness

Most of the large manufacturing firms mainly operate in a centralized production facility but with products moving across the country and some even in the region. This makes transportation a core driver to the companies' success, hence the need for the management to address inefficiencies in transportation by prioritizing investments in modern transportation technologies such as route optimization, transportation management systems and real-time GPs tracking systems. This way, the firms will optimize their transportation processes to save on costs and enhance speedy deliveries for better customer satisfaction.

The core business of large manufacturing firms is mainly production of finished goods from raw materials. While transportation is a major function that involves distribution of these goods to the final consumers, the

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companies can outsource logistics services to ensure it is effectively done while at the same time directing their focus on core functions. However, the firms must adopt robust outsourcing strategies to ensure accountability and effectiveness of the outsourced service providers.

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