

**EFFECT OF SUPPLY CHAIN DRIVERS ON SALES PERFORMANCE AMONG
FISH TRADERS IN GIKOMBA MARKET, KENYA**

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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DEFINITION OF TERMS

Consumer preferences	This refers to the tastes, attitudes, and purchasing behaviors of customers.
Government regulation	A set of policies, laws, and enforcement mechanisms that govern fish trading activities.
Route to market	The channels and pathways through which a product moves from the producer to the final consumer.
Sales performance	The extent to which a business, salesperson, or trading entity achieves its sales objectives within a given period.
Supplier relationship	The interactions and collaborations between traders and their fish suppliers, focusing on trust, reliability, pricing, and consistency of supply.
Supply chain drivers	Elements that shape how products move from suppliers to consumers, how information flows between actors, and how value is created at each stage.

LIST OF ABBREVIATIONS

FAO	Food and Agriculture Organization
FCR	Feed Conversion Ratio
IUU	Illegal Unreported, and Unregulated Fishing
NACOSTI	The National Commission for Science, Technology & Innovation
SCG	Supply Chain Governance

ABSTRACT

The fish trade plays a vital role in Kenya's food security and urban livelihoods, with Tilapia as one of the most consumed fish species in Kenya. Gikomba Market serves as one of the largest informal hubs for tilapia distribution, linking producers, wholesalers, and retailers to urban consumers. However, these markets are characterized by inefficiencies in their supply chains leading to traders in these markets struggling to achieve consistent and sustainable sales performance despite the growing demand for fish in urban areas. This study therefore set to examine the effect of supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Nairobi County. Specifically, the study focused on four key supply chain drivers: route-to-market avenues, consumer preferences, supplier relationships, and government regulation. The study was guided by the Supply Chain Management Theory and the Resource-Based View. A positivist research philosophy was utilized to underpin the study. Further, a cross-sectional research design aided in examining the phenomena within the current period to get a current view of the effect of the selected factors. The population was drawn from 1,500 traders within Gikomba market who specialize in Tilapia fish trading. The sample was 315 as derived using the Yamane formula. The research applied a structured questionnaire using a 5-point Likert scale format. The questionnaire was developed in line with the objectives of the study. Descriptive and inferential analysis were used to quantitatively examine the gathered data. Tables and figures were used to present the findings. Findings from the study were that sales performance was rated highly overall, and that all the four supply chain drivers under investigation have strong, positive, and statistically significant correlations with sales performance. Regression results reaffirm this finding, confirming that supplier relationships have the strongest predictive effect on sales success, followed by consumer preference and finally route to market avenues which had moderate positive effects on sales performance. However, government regulations were revealed to have insignificant effects on sales performance. Recommendations were for traders to invest in supplier partnerships, quality differentiation, and to explore collectively logistic arrangements. Furthermore, Policymakers were recommended to simplify regulatory processes by streamlining licensing and tax collection to reduce the perceived burden, to invest in market infrastructure, and ensure there are adequate training opportunities for traders.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

The efficiency of supply chains has increasingly been recognized as a critical determinant of business performance, particularly in the trade of perishable goods (Achebe, Soyinka, Thiong'o, & Tanvir, 2021). Globally, fish is one of the most traded food commodities with a value of more than USD 143 billion a year (FAO, 2019). Therefore, its timely distribution from producers to consumers is essential for ensuring quality, reducing losses, and sustaining profitability. For Tilapia, which is both a staple and a commercially important fish species, effective supply chain management is especially vital to meeting growing urban demand. Understanding how supply chain practices influence sales performance in various markets is therefore crucial in enhancing food security, trader livelihoods, and the competitiveness of the fisheries sector (Cai, Quagrainie, & Hishamunda, 2017).

Globally, the link between supply chain management and sales performance in perishable goods such as fish has been widely acknowledged. Studies from Asia and Latin America, where tilapia aquaculture and trade are well-developed, show that strengthening supply chain processes leads to significant improvements in trader profitability and market reach. In the Philippines, Parilla and Abadilla, (2021) demonstrated that well-coordinated supply chain structures in aquaculture enhanced traders' ability to meet demand and capture higher-value markets, thereby improving their sales performance. Similarly, in Brazil, Cruz, Medina, and Júnior, (2022) found that improvements in logistics and cold chain management reduced post-harvest losses by over 25%, enabling traders to increase both sales volume and consistency.

Across Africa, the relationship between supply chain effectiveness and sales performance in fisheries is equally evident (Okoumba, Mafini, & Bhadury, 2020). Suleiman, (2023) highlights post-harvest losses as a key barrier to sales growth in fish markets, with estimates suggesting that 20–30% of fish harvested in Sub-Saharan Africa is lost before reaching consumers due to poor handling, inadequate storage, and weak distribution systems. A study by the African Union–InterAfrican Bureau for Animal Resources (2021) reported that fragmented and inefficient supply chains significantly undermine traders' capacity to meet rising urban demand, resulting in lost sales opportunities. Similarly, in Tanzania Suleiman, (2023) documented how strengthening linkages between producers and traders, alongside better

market coordination, boosted sales by reducing inconsistencies in supply and improving product quality at retail points.

In Kenya, Muthoni and Mose, (2020) noted the importance of an effective supply chain to the sustainability of the fisheries' sector performance, and in sustaining urban food systems. However, despite its importance, the country's Tilapia supply chain is significantly ineffective and characterized by high production costs, fragmented marketing, and a massive supply-demand deficit (Abwao, Bett, & Gathungu, 2025). These inconsistencies in the supply chain often leave traders facing considerable challenges in maintaining product quality and consistency (Ogello, Outa, & Ouma, 2021). Research by the Kenya Marine and Fisheries Research Institute found that traders in informal markets incur significant losses due to inadequate cold storage and poor supply predictability, which reduces the quantity and quality of fish available for sale (KMFRI, 2022).

Empirical evidence established that traders with access to timely market information sold fish more efficiently and at better prices, compared to those without such access (Aura, et al. 2019), while according to Muthoni and Mose (2020), fish traders in urban centers with more integrated supply chains have more reliable access to fresh fish as well storage facilities consistently reported higher daily sales and improved customer retention. Despite the centrality of tilapia fish trading in Kenya's urban food systems, limited empirical research has focused on the role of supply chain drivers in driving sales performance among fish traders.

The study is therefore important because despite informal fish markets being the backbone of fish distribution in urban Kenya, the sector remains critically under-researched in terms of factors influencing the sector's supply chain efficiency. Most studies on fisheries in Kenya look into production, aquaculture development, and sustainability, with less attention paid to supply chain dynamics and their effect on market performance. This study therefore sought to examine the effect of supply chain drivers on the sales performance of tilapia fish traders in Gikomba Market, Kenya.

1.1.1 Sales Performance

Sales performance refers to the extent to which a business, salesperson, or trading entity achieves its sales objectives within a given period (Chawla, Lyngdoh, Guda, & Purani, 2020). In practice, sales performance is not only about the quantity of goods sold but also about the quality of customer relationships, consistency of supply, and the ability to sustain sales growth

over time. It is therefore a multidimensional construct that integrates both financial outcomes and non-financial outcomes (Chawla, Lyngdoh, Guda, & Purani, 2020).

Hai (2023) posits that sales performance is shaped by both internal and external factors. Internal factors include product availability, pricing strategies, customer service, and trader experience while external factors may involve supply chain dynamics, market demand fluctuations, competition, and regulatory frameworks. In the case of tilapia fish traders at Gikomba, sales performance is a critical measure of livelihood sustainability. Traders depend on daily sales to meet operating costs and household needs. Poor sales performance caused by supply chain inefficiencies such as delays in transport, lack of cold storage, or inconsistent sourcing translates into losses through spoilage, lower bargaining power, and reduced income (FnB Fishery, 2024). Conversely, efficient supply chain management enhances product freshness, widens customer reach, and improves both sales volumes and profitability (Muthoni & Mose, 2020).

Hai, (2023) notes that in formal enterprises, sales performance is often evaluated using metrics such as sales growth, number of new customers acquired, market share, and achievement of set sales targets. High sales performance reflects effective marketing, strong product-market fit, and efficient operational support, including supply chain management (Chawla, Lyngdoh, Guda, & Purani, 2020). For small-scale traders such as tilapia fish sellers in Gikomba Market, sales performance can be observed in daily sales volumes, speed of stock turnover, ability to minimize unsold inventory, income earned per trading day, and retention of loyal customers. Thus, for traders, sales performance is directly tied to how quickly and effectively they can move stock before spoilage occurs (Hai, 2023). The study therefore adopted daily sales volumes, speed of stock turnover, income earned per trading day and retention of loyal customers as the sales performance metrics.

1.1.2 Supply Chain Drivers

Supply chain efficiency is a central concept in modern supply chain management, referring to the ability of a supply chain to deliver products and services to customers in the most cost-effective, timely, and resource-optimized manner, while maintaining high quality standards (Negi, 2021). Supply chain consists of the activities and operations involved directly or indirectly in fulfilling a customer order with the general objective of maximizing overall value generated. Supply chain profitability, then is the difference between the revenue generated from the customer and the overall cost across the supply chain. (Chopra & Meindl, 2016).

Supply chain drivers refer to the key operational and strategic components that determine how effectively a supply chain performs in delivering products or services to end consumers (Negi, 2021). According to Chopra and Meindl, (2016), a supply chain's performance measured in terms of responsiveness and efficiency is based on the interaction between the following logistical and cross-functional drivers of supply chain performance i.e. facilities, inventory, transportation, information, sourcing, and pricing. The aim is to structure the drivers to achieve the desired level of responsiveness at the lowest possible cost, thus improving the supply chain surplus and the firm's overall financial performance.

Existing studies reveal that fish traders often face challenges such as poor distribution systems, fluctuating consumer demand, unstable supplier relationships, and regulatory barriers (FAO, 2019; AU-IBAR, 2018; KMFRI, 2022). These issues collectively determine how much fish is sold, how often customers return, and how sustainable trading activities are and thus contribute to the variables adopted in the current study. The study adopted route to market avenues, consumer preferences, supplier relationship, and government regulation as the study variables. Route-to-market avenues capture distribution and transportation aspects. Consumer preferences represent demand-side information and responsiveness. Supplier relationships reflect sourcing and coordination efficiency while government regulation influences operational and pricing constraints.

Route to market refers to the channels and pathways through which a product moves from the producer to the final consumer (Afzal, 2019). These may include wholesale markets, retail stalls, mobile vendors, supermarkets, restaurants, or direct farm-gate sales. For perishable goods like fish, the choice of route to market is critical to sales performance (SokoJumia, 2025). Efficient market routes reduce spoilage, ensure timely delivery, and expand customer reach (FAO, 2019). In Kenya, traders often use informal wet markets, but some are diversifying into supermarkets and hotels, which offer higher margins and stable demand (KMFRI, 2020). Asamoah, Agyei-Owusu, Andoh-Baidoo, and Ayaburi, (2021) confirm that traders in Ghana with diversified routes to market record better turnover and profitability, since they can serve both mass and niche customers.

Essl, von Bieberstein, Kosfeld, and Kröll, (2023) define consumer preferences as the tastes, attitudes, and purchasing behaviors of customers, including choices regarding fish species, size, freshness, preparation style, and price sensitivity. They also note that consumer preferences are central to sales performance, as they directly determine demand. For instance, according to

Farm Africa, (2024), Kenyan urban consumers prefer tilapia and Nile perch due to taste and availability. Price sensitivity is also high, making affordability a key determinant of purchase decisions (Farm Africa, 2024). In Tanzania, Kimaro, Timothy, and Mgale, (2024) found that traders who adjusted their offerings to match consumer preferences experienced higher customer retention. Aligning product attributes to customer expectations therefore boosts repeat purchases, customer satisfaction, and ultimately, sales performance.

Supplier relationship refers to the interactions and collaborations between traders and their fish suppliers, focusing on trust, reliability, pricing, and consistency of supply (Vanichchinchai, 2021). Strong supplier relationships ensure steady availability of fresh, high-quality fish at predictable costs. Weak supplier ties often result in shortages, high variability in quality, and price fluctuations which all negatively impact sales (Lees, Nuthall, & Wilson, 2020). In Nigeria, Ibrahim & Peter, (2025) found that traders who had long-term partnerships with fish suppliers enjoyed better margins and more reliable product flow. In Kenya, some traders benefit from supplier credit arrangements, which improve working capital and enhance their ability to meet customer demand (KMFRI, 2020).

Government regulation refers to the set of policies, laws, and enforcement mechanisms that govern fish trading activities, including licensing, taxation, hygiene and safety standards, environmental laws, and trade facilitation measures (Rakhmawati, Kusumawati, Rahardjo, & Muhammad, 2020). Regulation plays a dual role in shaping sales performance. On one hand, compliance with safety and quality standards builds consumer trust and market access. On the other hand, excessive or poorly enforced regulations can discourage traders and increase operational costs (FAO, 2019). A study in Bangladesh by Khan and Prodhan, (2024) highlighted how strict sanitary standards, if poorly supported with infrastructure, reduced traders' ability to sell in formal markets. In Kenya, government policies on aquaculture promotion have increased supply to urban traders, but challenges remain in licensing, taxation, and enforcement (KMFRI, 2020).

1.1.3 Tilapia Fish Traders in Gikomba Market

According to the State Department for Fisheries (GoK, 2022), the fisheries sector contributes approximately 0.7% to the national GDP and provides direct employment to more than 500,000 people, with over 2 million Kenyans depending on fisheries both directly and indirectly for their livelihoods (Kenya Fisheries Service, 2023). Fish also plays a central role in the nation's food security agenda, with the annual per capita fish consumption estimated at 5.6 kilograms,

which, although lower than the global average of 20.3 kilograms, continues to rise in urban centers such as Nairobi due to growing middle-class demand and increased awareness of the nutritional benefits of fish (Kenya Fisheries Service, 2024).

Tilapia is one of the most consumed fish species in Kenya, accounting for nearly 60% of total aquaculture production (Farm Africa, 2024). According to El-Sayed and Fitzsimmons, (2023), the Nile tilapia, is frequently described as the ‘aquatic chicken’ since it can be a low-priced fish compared with other farmed fish and is sometimes considered a food for the masses. With this, tilapia has played a significant role in social economic wellbeing as well as human health improvement in the developing and least developed countries thereby directly contributing to the achievement of the United Nations Sustainable Development Goals. (El-Sayed & Fitzsimmons, 2023).

Kenya’s aquaculture production of tilapia has grown significantly in the last decade, from 4,218 metric tons in 2009 to over 24,000 metric tons in 2021 (KMFRI, 2022). Lake Victoria also remains a major source of tilapia, contributing to both domestic supply and exports. The demand, however, still outpaces supply, leading to imports from countries such as China, Uganda, and Tanzania. For instance, Kenya imported over 20,000 tons of fish in 2020, with tilapia comprising a significant share, to meet the growing local demand (Kenya National Bureau of Statistics, 2021).

Nairobi is a major consumption hub for fish, and the Gikomba Market serves as one of the largest wholesale and retail trading points for Tilapia (Farm Africa, 2024). The market handles several tons of tilapia daily, linking suppliers from Lake Victoria, aquaculture farms in Central and Western Kenya, and importers with consumers, hotels, restaurants, and smaller traders (Obiero, et al., 2019). Many fish farmers sell their harvest to wholesalers. However, some farmers, especially those producing small amounts, sell their fish to retailers and sometimes directly to consumers (Obiero, et al., 2019). Farmers at times have agreements with wholesalers who purchase their harvest directly at the farm gate. The Kenya Markets Trust (2020) reported that fish trading in Nairobi contributes substantially to urban food distribution and provides income opportunities for thousands of small-scale traders. However, the efficiency of fish trading in such informal markets is highly dependent on the effectiveness of supply chain operations.

Gikomba Market is uniquely suited for this study because it represents the largest, oldest, and most diverse fish trading hub in Nairobi’s informal economy, making it a microcosm of the

broader challenges and opportunities in Kenya's urban fish trade (Farm Africa, 2024). The major dilemma among fish traders in Gikomba market is how to balance market demand, product freshness, and operational costs in an environment with weak infrastructure, informal supplier networks, and limited institutional support. The study sought to find out whether this dilemma directly affects sales performance and the long-term sustainability of the fish trading business

1.2 Problem statement

Tilapia is one of the most consumed fish species in Kenya, accounting for nearly 60% of total aquaculture production (Farm Africa, 2024). In Nairobi, Gikomba Market serves as one of the largest informal hubs for tilapia distribution, linking producers, wholesalers, and retailers to urban consumers. Despite its importance, these markets are characterized by inefficiencies in their supply chains, including poor distribution channels, unreliable supplier networks, weak alignment with consumer demand, and regulatory constraints (KMFRI, 2022) (FAO, 2019). The highly perishable nature of fish further magnifies these inefficiencies, resulting in post-harvest losses, compromised product quality, and unpredictable sales volumes (Kenya Fisheries Service, 2024). Globally, effective supply chain systems have been credited with addressing these challenges, yet similar gains are often elusive in the Kenyan context. This created a knowledge gap that the study sought to bridge.

Globally, various studies have focused on the relationship between supply chain drivers and sales performance. Islam, Nielsen, and Bosselmann, (2023) found a positive relationship between supply chain determinants and consumption of tilapia in Bangladesh. Gilson, New, Rodrigues, and Valenti, (2023) further noted that effective supply chains increased income generation and led to increased wealth among fish farmers and traders in Brazil. Additionally, Mengesha, (2020) noted that in Ethiopia, the sale of fish was affected by the market, infrastructure and resource availability. Ibrahim and Peter, (2025) also found that supply chain was a significant constraint in the sales performance of fish in Nigeria. These studies, despite being relevant were conducted in different regions and therefore differ in context from the current study bringing about a contextual gap.

In Kenya, there is limited empirical information on role of supply chain drivers in influencing sales performance among fish traders in informal markets. Obiero et al. (2019) investigated the governance and sustainability challenges of aquaculture value chains in Kenya, but their focus was largely on production systems rather than the sales outcomes of traders. Similarly, Aura et

al. (2020) examined post-harvest fish handling and quality loss in Kenyan markets, highlighting inefficiencies that contribute to high wastage, but did not link these inefficiencies to sales performance. In addition, Awuor, et al., (2019) studied the economics of fish farming and distribution in Kenya, showing the importance of tilapia in urban markets, yet their emphasis was on profitability at the producer level rather than the sales performances of traders in informal markets like Gikomba. These studies bring about a conceptual gap that the study sought to bridge the gap investigating the effect of supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya.

1.3 Research Objectives

1.3.1 General Objective

The main aim of the research was to find out the effect of supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya.

1.3.2 Specific Objectives

- i. To determine the effect of route to market avenues on sales performance among tilapia fish traders in Gikomba Market, Kenya.
- ii. To establish the effect of consumer preferences on sales performance among tilapia fish traders in Gikomba Market, Kenya.
- iii. To examine the effect of supplier relationship on sales performance among tilapia fish traders in Gikomba Market, Kenya.
- iv. To determine the effect of government regulation on sales performance among tilapia fish traders in Gikomba Market, Kenya.

1.4 Research Questions

- i. What is the effect of route to market avenues on sales performance among tilapia fish traders in Gikomba Market, Kenya?
- ii. What is the effect of consumer preferences on sales performance among tilapia fish traders in Gikomba Market, Kenya?
- iii. What is the effect of supplier relationship on sales performance among tilapia fish traders in Gikomba Market, Kenya?
- iv. What is the effect of government regulation on sales performance among tilapia fish traders in Gikomba Market, Kenya?

1.5 Scope of the Study

This research's scope was to explore the effect of supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya. The study specifically investigated the impact of route to market avenues, consumer preferences, supplier relationship, and government regulation on sales performance among tilapia fish traders. The study was guided by supply chain management theory and the resource-based view theory. Geographically, the research was limited to the Gikomba tilapia fish market. This market has a special mix of large fish farmers with their sale outlets, wholesale traders and the small fish farmers who supply the market with large quantities disrupting the forces of demand and supply. The scope was limited to the Tilapia fish trade in this market. Methodologically, the study adopted a descriptive and correlational research design, employing quantitative data collected through structured questionnaires administered to a representative sample of 315 Tilapia fish traders at Gikomba. Data was collected in February 2026.

1.6 Significance of the Study

From a policy perspective, the findings will provide evidence to inform fisheries management and market development strategies in Kenya. Policymakers such as the State Department for Fisheries and the Blue Economy, as well as county governments, will benefit from insights on how regulatory frameworks, infrastructure investment, and trader support can improve market efficiency and reduce post-harvest losses. The study further supports Kenya's Blue Economy agenda and the Big Four Agenda on food security by identifying practical interventions that strengthen fish supply chains and enhance trader livelihoods.

For traders and market stakeholders, this study will offer actionable insights on how to optimize supply chain practices to improve sales performance. The findings from the study will equip traders with strategies to minimize losses, enhance customer satisfaction, and build more resilient business models. Additionally, development partners and NGOs supporting small-scale fisheries can also apply the findings to design training programs, market linkages, and capacity-building initiatives tailored to the realities of informal fish traders in Kenya.

This study contributes to the growing body of literature in supply chain and sales performance by extending its application to informal fish markets in developing countries. While most studies on supply chain management and performance have been conducted in formal manufacturing and retail sectors, little empirical work has been done in perishable food markets.

1.7 Organization of the Study

In this chapter, the background as well as the study's general and specific objectives were covered. Additionally, the chapter includes a full description of this problem statement, the significance of the study, and the scope in which the study was conducted.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter focused on the studies conducted by other scholars who have carried out similar studies in the previous period. The chapter's structure entailed the theoretical framework, empirical review, research gaps as well as a conceptual framework.

2.2 Theoretical Framework

The study used the supply chain management theory and the resource-based view theory as the anchors.

2.2.1 Supply Chain Management Theory

The supply chain management theory, developed in the early 1980s by Oliver and Webber (1982), emphasizes the integration and coordination of activities along the supply chain to enhance efficiency, responsiveness, and competitiveness (Snyder & Shen, 2019). The theory posits that effective management of flows of goods, information, and finances from suppliers to end consumers determines competitiveness. The theory highlights principles such as collaboration, agility, trust, and visibility across the supply chain to reduce costs and maximize value delivery (Snyder & Shen, 2019).

The theory has however been criticized for its complexity, as informal markets often lack structured systems and rely on trust rather than formal contracts (Seuring, Yawar, Land, Khalid, & Sauer, 2020). Moreover, applying the theory in perishable food markets may be difficult due to seasonality and unpredictability of supply. To mitigate these criticisms, the current study adapts this theory to the informal market context by focusing on practical constructs such as distribution channels, supplier reliability, and regulation compliance, rather than assuming highly formalized supply chains.

The supply chain management theory has been applied across diverse sectors. For instance, Dani, (2015) in logistics and supply chain management applied the theory to retail distribution, showing how responsiveness improves customer satisfaction. Mutua and Njeru (2018) applied the theory in Kenya's horticulture sector, revealing that supply chain integration improved export performance. Similarly, Agyemang et al. (2020) used the theory in Ghana's artisanal fish trade, showing that coordination among suppliers and traders improved market access and

reduced post-harvest losses. These applications demonstrate the theory's relevance in both global and African food systems.

In the context of informal fish markets, the theory is highly relevant because fish traders rely on multiple interconnected actors such as fishermen, transporters, wholesalers, and regulators. Route to market avenues, supplier relationships, and even government regulations can be understood as elements within the supply chain that influence the flow of fish from landing sites to consumers. Applying the theory allows the study to assess how well coordination, channel choices, and supplier relationships enhance sales performance in a perishable product setting where timeliness and quality are critical (Seuring, Yawar, Land, Khalid, & Sauer, 2020).

2.2.2 Resource Based View Theory

The resource-based view, first articulated by Wernerfelt (1984) and later advanced by Barney (1991), argues that firms achieve sustainable competitive advantage by acquiring and utilizing resources that are valuable, rare, inimitable, and non-substitutable (Aliane, Gharbi, Bouzguenda, & Seraj, 2023). Resources include tangible assets like capital and infrastructure, as well as intangible ones like knowledge, relationships, and reputation. The theory posits that performance differences across firms are largely explained by how resources are acquired, developed, and leveraged.

Critics argue that the resource-based view can be vague in defining what constitutes valuable resources and may overlook external environmental factors such as government regulation (Aliane, Gharbi, Bouzguenda, & Seraj, 2023). Others suggest that the theory overemphasizes internal resources without considering industry dynamics. To mitigate these limitations, the current study combines the resource-based view with the supplier chain management theory, ensuring both internal resources and external conditions are considered to provide a more holistic framework for understanding sales performance.

Globally, this theory has been applied in various industries such as agribusiness and trade. For example, Aliane, Gharbi, Bouzguenda, and Seraj, (2023) examined RBV in dynamic capabilities, showing how firms adapt resources for competitiveness. Similarly, Amoah, Antwi, and Sarfo, (2021) applied the theory in Ghana's fish processing industry, demonstrating that unique knowledge and supplier linkages enhanced market penetration. In Kenya, Muthoni and Mose, (2020) applied resource-based view to firms in Kenya, finding that intangible resources like managerial skills and supplier networks influenced performance more than

financial capital. These applications show the theory's robustness in explaining performance in resource-constrained environments.

In this study, the resource-based view is relevant in explaining sales performance as the dependent variable. Fish traders' ability to outperform competitors in sales depends on how they leverage resources such as strong supplier relationships, consumer knowledge, strategic route-to-market choices, and compliance with regulations. Traders with unique networks or better handling practices may achieve superior performance despite operating in the same environment. The theory thus provides a framework to analyze how access to and utilization of resources drive competitive advantage in fish trade (Shibin, et al., 2020).

2.3 Empirical Review

2.3.1 Route To Market Avenues and Sales Performance

In Brazil, Pedroza Filho and Castilho, (2020) looked into the level of integration of farmers and processing industry in the aquaculture value chain. Through face-to-face interviews with producers, processors and traders, the paper highlights how weak integration between farms and marketing actors constrained access to formal retail and reduced the value for small scall fish farmers and traders. For traders, poorly integrated routes to market resulted in inconsistent product quality and limited ability to supply institutional buyers thus lowering average unit prices and daily turnover. Formalized routing in some areas improved traders' ability to maintain quality standards and access higher-margin customers. The research was, however, conducted in Brazil which has a different regulatory support and governance context from the Gikomba market which is the focus of the current study.

Similarly, Martínez-Cordero, Delgadillo, Sanchez-Zazueta, and Cai, (2021) assessed how targeted supply-chain interventions altered routes to markets in Mexico urban Tilapia markets. Using pilot interventions, transaction data and trader interviews, the study reported that formalized routes to market, where small producers were aggregated and assigned scheduled deliveries, enabled entry into supermarkets and fast-food supply chains and substantially improved stable volumes and pricing for intermediaries. This led to the conclusion that structured routes to market raise realized sales and reduce spoilage losses. The findings were however based on the Mexican context where the aquaculture industry is under proper governance and institutions that have supported the industry's growth. This differs to the Kenyan sector which the current study sought to address.

Focusing on a different context, Kamaylo, et al. (2021) looked into the Ethiopian tilapia supply chain and sort after performance opportunities and constraints using a mixed-methods approach of value-chain mapping, field observation and interviews with different stakeholders. The study found that the fish value chain suffers from inefficient, weak linkages and poor infrastructure, as well as poor market knowledge and storage facilities. Fishermen highlighted increased production costs with minimal profit due to accessibility of the market. The study highlighted that better-designed routes to markets would increase sell-through rates and reduce price dispersion that arises from market uncertainty. While the study documents inefficiencies and commercial opportunities, it does not examine trader-level daily sales outcomes in informal urban markets, a gap which the current study can address.

Amoah, Antwi, and Sarfo, (2021) also analysed the value chain of Tilapia, but in Accra, Ghana. The empirical study combined surveys from 100 respondents, made up of 40 tilapia producers, 30 tilapia processors and 30 tilapia distributors with margin and cost analyses to examine market channels in Ghana. The study found that the availability of market was an important factor in the value chain. It further highlights that limited aggregation and direct market linkages constrain traders' volumes and bargaining power, with input suppliers showing disproportionate margins. For sales performance, traders integrated into formalized RTMs (aggregators to retailers/food service) sold larger volumes more consistently and faced less price volatility. The study however did not specifically focus on the performance of sales among the producers and distributors, a gap which the study intends to fill.

Locally, Munguti, et al., (2023) looked at the role of multilateral development organizations in aquaculture subsector in Kenya focusing on the interventions to link smallholder producers to urban buyers. The study established that buyer agreements strengthened RTMs and enabled more reliable supply to Nairobi traders, improving sell-on rates and reducing last-mile losses. Additionally, Farm Africa, (2024) reviewed Kenya's fisheries market and found that the ability to switch sources and routes helped traders manage seasonality and demand spikes, improving realized daily sales. It further found that traders involved in associations or who used pooled sourcing had steadier volumes. This shows that RTM arrangements such as aggregation and shared distribution support better sales performance in urban markets. The study was however generalized to urban markets in Nairobi while the current study focused on Gikomba market.

2.3.2 Consumer Preferences and Sales Performance

Astana and Meliani, (2024) investigated the influence of consumer behavior and preferences on the sales performance of traders in Arta Sedana Ngurah Rai market in Indonesia. Using a mixed-methods approach involving consumer surveys and firm-level sales data, the findings reveal that customer preferences positively and significantly influence sales performance. The study also found that businesses aligning their offerings with evolving consumer tastes such as healthy and sustainable food options recorded higher sales growth. They show that traders who monitor and adapt to customer demand patterns secure stronger market performance compared to those offering generic products. The study was, however, based on all types of traders while the current study was limited to tilapia traders.

Similarly, in Taiwan, Jhan, Lee, Ting, and Liu, (2023) also explored preferences and consumer behaviour and their impact on the sale and production of white shrimp. The study utilized questionnaires to obtain data from 787 seafood consumers to assess purchasing decisions. Findings revealed that freshness, taste, and price significantly influenced buying behavior, with freshness accounting for 47% of the decision-making weight. The study showed that vendors aligning supply with these preferences recorded consistently higher sales. This highlights that for fish traders; perishability management directly affects consumer trust and repeat purchases. The study was however based on sale of white shrimp while the present research is based on the sale performance of tilapia traders.

On the other hand, Femi-Oladunni, Martínez-Ruiz, Ruiz-Palomino, and Muro-Rodríguez, (2023) examined the factors affecting consumer decisions among consumers in Nigeria's food sector. The researcher conducted a survey of 500 residents of Lagos, Nigeria and used regression analysis. The results indicated that responsiveness to customer preferences particularly on product quality, packaging, and price sensitivity was a significant predictor of consumer decisions. The study further found that nutrition, weight and measurement values were important aspects on food products that contribute to consumers' decisions. The study suggested that firms and traders should conduct regular market feedback assessments to align products with consumer expectations. The study was however limited to Nigeria's food sector while the current study examined Nairobi's tilapia sector.

In Kenya, Kilonzo and Njoroge (2021) showed that customers' choices were driven by freshness, hygiene standards, and affordability. Traders who invested in better handling practices and provided clean storage areas reported higher sales than those who did not. However, most informal traders lacked resources to consistently meet customer expectations.

Most recently, Ochieng and Atieno (2023) used a mixed-methods design involving focus group discussions with consumers and sales data analysis from 150 fish traders and revealed that fish buyers prioritized freshness, visible cleanliness, and fair pricing when making purchasing decisions.

In addition, according to a study by Githukia, Obiero, Manyala, Ngugi, and Quagrainie, (2020), Nile Tilapia is the most preferred fish in their study carried out in 5 major urban centers in Kenya i.e., Nairobi, Kisumu, Eldoret, Nakuru and Nyeri. They also found that markets were the most preferred places to buy fish compared to supermarkets, landing sites and other areas. Customers purchasing frequency was overwhelmingly weekly with 61% of consumers purchasing fish once a week, 23% once in a fortnight, 8% daily and only 7% of consumers purchasing fish once a month. The factors driving this purchasing behavior were predominantly found to be price, nutritional value, quality of fish product, health consciousness, taste of fish and product form especially fresh whole fish. Other important factors included: size, ease of availability in the market, wild sourced fish, appearance, and smell. Value addition efforts like filleting and fried ranked low in score as shown in the figure below. In conclusion, factors affecting consumer preference of Nile tilapia fish in Kenyan urban centers were price, overall fish quality, nutritional value, and healthiness. Other factors like infrastructure that support value chain activities such as smoking kilns, cold rooms, drying racks, fish stores, electricity supply and accessible all-weather roads are inadequate, and not well developed.

2.3.3 Supplier Relationship and Sales Performance

Muyot, Balunan, and Mutia, (2021) conducted a value chain analysis of Sardines trade in the Philippines, sourcing data from producers, processors, wet-market traders, buyers and market managers. The study used mixed methods and findings revealed that close, trust-based supplier linkages and aggregation mechanisms reduced transaction costs and helped some retailers and intermediaries consistently access quality sardines for urban demand. Traders involved in stronger supplier networks were able to meet institutional buyer specifications, especially in terms of sizes and delivery timing more reliably than small-scale buyers. Stable supplier relationships therefore translated into steadier supply, fewer same-day stockouts and better ability to supply higher-value outlets. Sardines was the basis of this study as compared to Tilapia, which may attract different market aspects.

This was also supported by Pedroza-Gutiérrez and Hernández, (2020) who examined the relationship between social networks and supply chain management in fish trade in Mexico.

The study conducted an empirical network analysis and qualitative interviews across seafood trading nodes for small traders, middlemen, and distributors to examine how social ties influence supply reliability. The study shows that in informal food chains, social capital often substitutes for formal contracts i.e. traders with dense personal supplier networks faced fewer disruptions and negotiated better informal credit and flexible delivery terms. The study deduced that where formal contracting is weak, social supplier relationships reduce uncertainty and enable traders to maintain supply continuity leading to higher customer satisfaction.

In the same breadth, Hsiao, Chen, and Nan, (2025) conducted econometric analysis of price transmission along Taiwan seafood supply chains using market price vs time series and supplier transaction data for tilapia and milkfish. The research demonstrates that supplier concentration and bargaining power strongly influence downstream price stability. The study notes that when traders have limited supplier choices or weak supplier relationships, they face greater price volatility and reduced margins. This shows that unstable supply pricing undermines traders' ability to set consistent retail prices and maintain buyer trust, which can reduce repeat purchases and daily sales. The study was however conducted in Taiwan while Kenya was the focus of the current study.

In an African context, Nkwabi and Fallon, (2020) conducted a qualitative study on factors affecting supplier relationship management relying on expert interviews and SME case analyses in Tanzania's food sector. The study found that poor transportation, limited storage, and weak communication capacities impair supplier relationship management and firms with structured SRM practices experienced fewer stock interruptions. Makhitha, (2019) conducted a survey of South African independent retailers assessing supplier selection criteria, relationship marketing practices, and performance outcomes. Results showed that retailers that prioritized supplier reliability, flexible terms and local proximity reported better inventory management concluding that supplier selection criteria were significantly associated with downstream sales reliability. While informative for small retailers, these studies are not specific to perishable fish trade which the current study addressed.

Locally, Obar, Matofari, and Nduko, (2025) sought to understand the socio demographic factors and handling practices affecting post-harvest fish losses in Kakamega. The study conducted household and value-chain surveys, handling practice observations and post-harvest loss measurement in Kakamega's cultured tilapia chain. Findings indicated that handling and supplier timing critically influenced post-harvest loss. Additionally, traders sourcing via

reliable suppliers who adhered to agreed harvest/delivery schedules experienced lower post-harvest loss and higher net sale volumes. The study was conducted in Kakamega county and focused on farmers while the current study was focused on Gikomba traders.

2.3.4 Government Regulation and Sales Performance

Rao, Bast, and De Boer, (2021) explored regulatory interventions in food markets across global agri-food supply chains in Europe. Using a qualitative policy analysis approach, they found that food safety standards enforced by governments and private actors significantly influenced market access, customer trust, and ultimately sales performance. However, small traders often lacked the resources to comply, leading to exclusion from lucrative markets. This highlights the challenge for fish traders in informal markets, where compliance costs may hinder participation.

In contrast, Noman, Mu, Nisar, Mohsin, and Memon, (2022) investigated the problems brought about by the national fisheries policy of Pakistan. The study found that the national fisheries policy of Pakistan failed to address any of the fisheries problems such as emergence of small-scale artisanal fisheries, the nonexistence of technologies, deficiency of institutional development, an absence of infrastructure, insufficient human resource skill, and a lack of responsiveness among fishing societies leading to the collapse of the sector. The study noted that the policy framework had no effect on the growth of the sector whatsoever. The research was however based on Pakistan's fisheries policy which may differ from Kenya's policy.

In a different context, Auriacombe and van der Walt, (2021) reviewed agricultural and food trade policies across Sub-Saharan Africa and how the policies affect sustainable development. The study employed a mixed-methods approach combining policy analysis with household surveys. Findings revealed that government regulations around food safety, taxation, and licensing directly shaped small traders' ability to compete and sustain sales. In particular, stringent food policies without adequate support led to reduced margins and sales volumes for traders. This demonstrates how poorly aligned regulations can negatively affect sales performance. The study was however generalized to the whole of Africa while the current study's focus is on Kenya.

Similarly, Akintola, Fakoya, Areola, Olatoye, and Abiodun-Solanke, (2024) reviewed the legal and policy instruments both at the national and state levels and how they affect small-scale fisheries in Nigeria. The finding showed that the legal framework had a positive impact on small scale fisheries in Nigeria. Legal provisions were found to be extremely important in

ensuring that the rights of small-scale fishers, fish workers, and fishing communities. Musinguzi et al. (2021), further assessed the regulatory challenges facing informal fish markets in Uganda and found that while health regulations improved consumer confidence and sales reliability, high compliance costs and inconsistent enforcement eroded trader profits and discouraged participation in formalized markets. The studies, however, adopted an empirical design while the current study collected primary data.

In Kenya, Obiero et al. (2019), examined the impact of fisheries regulations and policies on market systems in Kenya, Tanzania, and Uganda. Using a macroeconomic analysis of fisheries data, the study established that stringent government regulations, especially around fish imports and health standards directly shaped the sales turnover of traders in local markets. While regulations were critical for sustainability, inadequate enforcement mechanisms meant that many traders overlooked compliance, reducing consumer trust and affecting sales performance. Karuga and Abila (2022) further conducted interviews with 60 traders and government officials in Nairobi noted that licensing procedures, taxation, and lack of structured government support limited performance among these traders. Traders cited bureaucracy and corruption as major hindrances to accessing regulated markets, thereby forcing reliance on informal systems that reduced growth potential.

2.4 Research Gap

The empirical literature provides important insights into previous researchers' findings on the relationship between supply chain drivers and sales performance of fish traders. However, several research gaps were brought out that necessitate further investigation. Firstly, not all studies were conducted in Kenya and specifically an informal market and therefore may not be applicable to the context of fish traders in Gikomba market thereby bringing about a contextual gap. Moreover, the contextual scope of some of the studies may differ from the current research which specifies the combined effect of route to market avenues, consumer preferences, supplier relationship, and government regulation on sales performance among fish traders. Additionally, the studies reviewed may have used different methodologies which the current study sought to improve on. The current research therefore focuses on filling these gaps as summarized in Table 2.1 below.

Table 2.1 Summary of Research Gaps

Author	Title	Findings	Gap in Study
Pedroza Filho and Castilho, (2020)	The level of integration of farmers and processing industry in the aquaculture value chain.	Weak integration between farms and marketing actors constrained access to formal retail and reduced the value for small scale fish farmers and traders.	The research was however conducted in Brazil whose market is well developed as compared to Gikomba market which is the focus of the current study.
Jhan, Lee, Ting, and Liu, (2023)	The preferences and consumer behaviour and their impact on the sale and production of white shrimp in Taiwan.	Findings revealed that freshness, taste, and price significantly influenced buying behavior	The study was however based on sale of white shrimp while the present research is based on the sale performance of tilapia traders.
Martínez-Cordero, Delgadillo, Sanchez-Zazueta, and Cai, (2021)	How targeted supply-chain interventions altered routes to markets in Mexico urban markets.	Structured routes to market raise realized sales and reduce spoilage losses.	It was based on the Mexican context where the aquaculture industry is highly developed as compared to the Kenyan context
Astana and Meliani, (2024)	The influence of consumer behavior and preferences on the sales performance of traders in Arta Sedana Ngurah Rai market in Indonesia.	Findings reveal that customer preferences positively and significantly influence sales performance	The study was, however, based on all types of traders while the current study was limited to tilapia traders.
Noman, Mu, Nisar, Mohsin, and Memon, (2022)	The problems brought about by the national fisheries policy of Pakistan.	The study found that the policy framework had no effect on the growth of the sector.	The research was however based on Pakistan's fisheries policy which has been present for longer as compared to the Kenya's policy.

Muyot, Balunan, and Mutia, (2021)	A value chain analysis of Sardines in the Philippines.	The findings revealed that close, trust-based supplier linkages and aggregation mechanisms reduced transaction costs	Sardines were the basis of this study as compared to tilapia which may attract different market aspects.
Amoah, Antwi, and Sarfo, (2021)	Analysis of the value chain of Tilapia in Accra, Ghana.	The study found that the availability of market was an important factor in the value chain.	The study, however, did not specifically focus on the performance of sales among the producers and distributors.
Obar, Matofari, and Nduko, (2025)	The socio demographic factors and handling practices affecting post-harvest fish losses in Kakamega.	Findings indicated that handling and supplier timing critically influenced post-harvest loss.	The study was conducted in Kakamega county and focused on farmers while the current study was conducted among Gikomba traders.
Munguti, et al., (2023)	The role of multilateral development organizations in aquaculture subsector in Kenya	The study established that buyer agreements strengthened RTMs and enabled more reliable supply to Nairobi traders	The study was however generalized to urban markets in Nairobi which may differ in size and structure from the Gikomba market.

Source: Researcher (2026)

2.5 Conceptual framework

A conceptual framework serves as a visual depiction, in the form of a diagram, that captures the essence and structure of the study (Sekaran & Bougie, 2016). The study sought to determine the supply chain governance drivers and to what extent they affect top line business performance in Tilapia fish traders.

Independent Variables

Dependent Variable

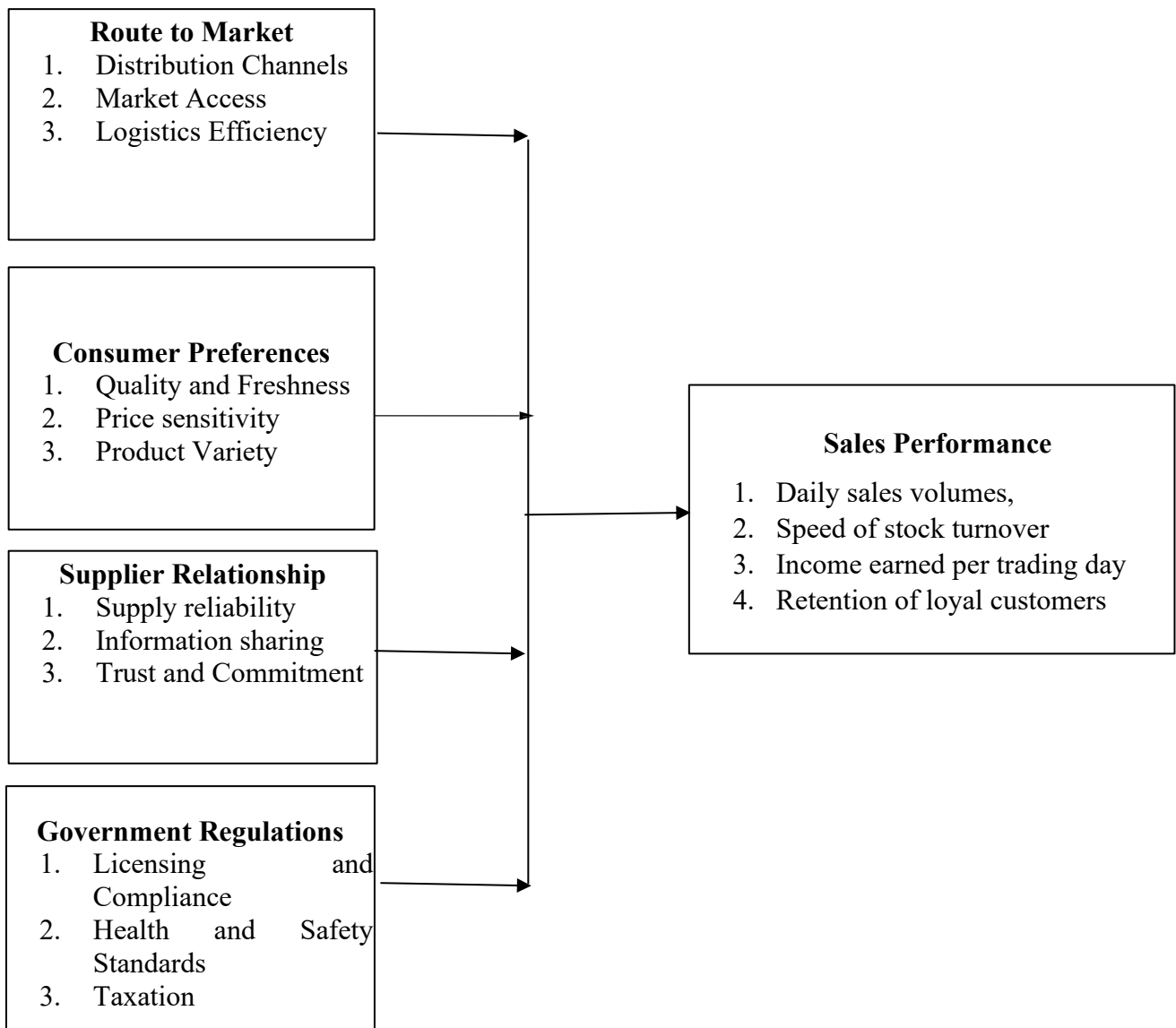


Figure 2.1 Conceptual Framework

Source: Researcher (2026)

Table 2.2 Operationalization of Variables

Variable	Type	Indicators	Measurement Scale	Source of Literature
Route to Market	• Independent	• Distribution Channels • Market Access • Logistics Efficiency	Five-point Likert scale	(Afzal, 2019)
Consumer Preferences	• Independent	• Quality and Freshness • Price sensitivity • Product Variety	Five-point Likert scale	(Essl, von Bieberstein, Kosfeld, & Kröll, 2023)
Supplier Relationship	• Independent	• Supply reliability • Information sharing and Trust • Commitment	Five-point Likert scale	(Vanichchincha i, 2021)
Government Regulations	• Independent	• Licensing and Compliance • Health and Safety Standards • Taxation	Five-point Likert scale	(Rakhmawati, Kusumawati, Rahardjo, & Muhammad, 2020)
Sales Performance	• Dependent	• Daily sales volumes, • Speed of stock turnover • Income earned per trading day • Retention of loyal customers	Five-point Likert scale	(Muthoni & Mose, 2020)

Source: Researcher (2026)

2.6 Chapter Summary

The chapter discussed the theoretical framework that anchors the study, settling on supply chain management theory and the resource-based view theory. Previous empirical evidence was also taken into account in this chapter, drawing gaps that the current study will be addressing. The chapter also operationalizes the variables, highlighting the constructs that the variables will be measured by.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The third chapter focused on the methodological plan that was utilized in the course of the study. The main parts reviewed the philosophical grounding, the research design, population and sampling procedures. Further, the chapter covered the data collection tools, research procedures, analysis and ethical considerations to be used.

3.2 Research Philosophy

The research philosophy highlights the approach and manner that information regarding a particular phenomenon under investigation was collected, analyzed and interpreted in the course of the study (Bryman, 2016). Philosophical approaches in research involve the methods and processes that are key to creating and interpreting the knowledge and can be divided into pragmatism, positivism, realism and interpretivism (Patten, 2016). The research was grounded on a positivist research philosophy that advocates for an objective point of review in looking at reality and examining a subject area within its natural setting (Bougie & Sekaran, 2019). The approach supported the application of quantitative approach in the examination of the subject area and allows for use of associated analytical methods. This philosophy was applied in this study in examining the effect of supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya.

3.3 Research Design

The research design represents the blueprint which guides how the study is conducted from data gathering, analysis and interpretation of the results (Bougie & Sekaran, 2019). This study was quantitative in nature and anchored on a cross-sectional descriptive research design. The approach allows the researcher to obtain perceptions and facts from a select group of individuals on the subject matter with minimal bias (Bryman, 2016). A cross-sectional survey research design is characterized by the collection of data from a sample of participants at a single point in time thus providing a clear snapshot of the phenomenon being investigated. Thus, this design was ideal in establishing the relationship between supply chain drivers and sales performance among tilapia fish traders in Gikomba Market, Kenya.

3.4 Target Population

The population of the study refers to the totality of the individuals, items or objects that are of interest to the research in providing the required information to solve the problem being studied (Dubey & Kothari, 2022). The study targeted businesses/traders dealing with Tilapia fish sales within Gikomba market. The research focused on the registered businesses within the market dealing specifically with Tilapia fish sales; there are an estimated 1,500 traders within Gikomba market who specialize in Tilapia fish trading and was considered for this study (Nairobi City County Fisheries Office/Market Management Register (2025/2026)).

3.5 Sampling Design and Sample Size

Sample design refers to the architecture or the strategy through which respondents were selected (Dubey & Kothari, 2022). The study employed stratified sampling in selecting only Tilapia fish traders within the market. This ensured that only traders who meet specific criteria are included in the study thus ascertaining information obtained meets the objectives of the research. This involved excluding other fish traders who were not selling Tilapia variety in the market. A sample is the number of individuals or items chosen for a study from a target population (Bryman, 2016). The sample for the study was drawn from the 1,500 traders within the market. The sample size was computed using the Yamane formula as shown below.

n =sample size,

N = population size (traders in Gikomba market)

e =level of precision (a p-value of 0.05)

$$n = \frac{N}{1 + N(e)^2}$$

$$\frac{1,500}{1 + 1500 (0.05)^2} = 315 \text{ traders}$$

3.6 Data Collection

The data collection process involves the steps involved in developing the right research tool and collecting the appropriate information needed in the study (Bryman, 2016). This study relied on primary research data that was collected using structured questionnaires. The use of

questionnaire ensures uniformity in the data collected and is convenient when dealing with a large sample. Utilization of primary research data allowed the study to be obtained directly from the traders thus getting a clear view of the phenomena being investigated. The study used a structured questionnaire which eases the data collection process where a large sample is being considered. Further through development of the questionnaire, using a 5-point Likert offered participants a more simplified method of providing responses and it allows for ease in data management.

The Likert scale comprised of; 5 = strongly agree, 4= *Agree* 3= *Disagree* 2= *Strongly Disagree* 1= *Not at all*. The questionnaire was developed in line with the objectives of the study capturing the selected independent and dependent variables as shown in Figure 2.1. The research tool was divided into three main parts with Likert scale statements being utilized in obtaining responses from the sample participants. The first section covered the demographic information of respondents; second section contained statements about the sales performance and the third section the supply chain drivers adopted. The study employed physical data collection through visits to the market and engaging the traders directly. The researcher helped the participants who are not proficient in English in responding to the questions through directly translating the questions for ease of response.

3.7 Research Quality

The research procedures encompass the approach that is considered while undertaking the study (Patten, 2016). The research tool was pretested among 10% of the sample traders (32) to support the reliability and validity tests of the questionnaire. The respondents who were included in the survey were not involved in the main research. This was key to determining the suitability, accuracy and internal consistency of the questionnaire. The reliability test of the questionnaire was conducted using the Cronbach Alpha score. The value ranges between 0-1.0 with a cutoff of 0.7 and above being adopted as the standard for reliability of the tool. This approach was used in this study.

Table 3.1 Reliability Results

Variable	Cronbach's Alpha	N of Items	Interpretation
Sales performance	.850	7	The variable items were accepted for inclusion in the final data collection
Route to Market	.734	6	The variable items were accepted for inclusion in the final data collection
Consumer Preference	.779	6	The variable items were accepted for inclusion in the final data collection
Supplier Relationship	.784	6	The variable items were accepted for inclusion in the final data collection
Government Regulation	.898	6	The variable items were accepted for inclusion in the final data collection

Source: Research Data (2026)

Secondly, the validity of the tool was performed through revising the research tool with the aid of the supervisor to confirm the content validity. Further, construct validity involved reviewing items captured to ensure that all the conceptualized objectives were adequately considered in the development of the questionnaire. This ensured the research tool applied was able to sufficiently answer the research questions by collecting information that was in line with the study aims.

3.8 Data Analysis and Presentation

The research data collected was checked for any errors and edited before coding into the Statistical Package for Social Sciences for subsequent analysis. The study applied quantitative analysis techniques; descriptive and inferential. The descriptive analysis covered summarizing the data into means, percentages and frequencies for easy interpretation. Further, correlation and regression analysis was applied to determine the nature and extent of effect of the independent variables on the dependent variable. Regression analysis was adopted for this study due to the ordinal nature of the data. The study performed diagnostic checks such as autocorrelation test, collinearity tests and normality tests before performing the regression analysis. The data analyzed was presented using tables and figures. The following model was estimated in the study;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Dependent variable (sales performance)

α = the model intercept

β_{1-4} = Coefficient of independent variables

X_1 – route to market

X_2 – consumer preferences

X_3 – supplier relationship

X_4 – government regulations

ε = Error Term

3.9 Ethical Considerations

The researcher ensured the respondents' consent is obtained prior to collection of study data from them. This involved providing an informed consent form indicating the rights of participation in the survey. Further, the research maintained the confidentiality of the respondents is upheld throughout the study. All required statutory and regulatory approvals was sought before conducting research. First and foremost, it was to obtain ethical clearance prior to the research by getting a research license from The National Commission for Science, Technology & Innovation (NACOSTI). The collected research data only utilized for the stated academic purposes and was not disclosed to unauthorized individuals.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The purpose of the fourth chapter is to present the summary of the research findings drawn from the analysis of the data collected from Fish Traders in Gikomba Market, Nairobi. The study findings are broken into following key sections; demographic profile, descriptive tests and inferential analysis.

4.2 Demographic Profile

The demographic section presents the response rate drawn from the study and the characteristics of the respondents who were involved in the research.

4.2.1 Response Rate

The study data was collected from a sample frame of 315 Tilapia Fish Traders within Gikomba market. The survey obtained 237 responses which translated to a 76% response rate which was above a threshold of 60% for quantitative analysis thus was adopted for this study as shown in Figure 4.1 below.

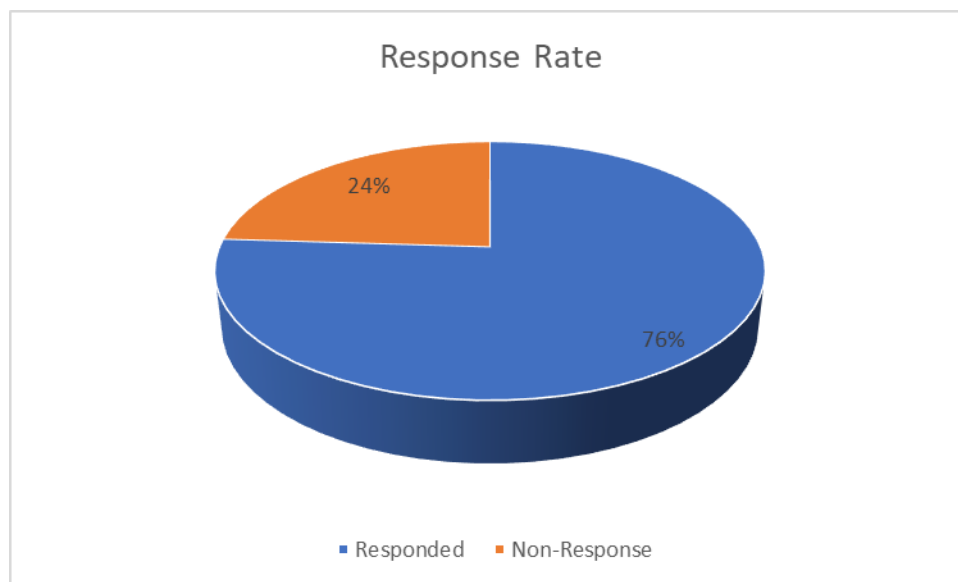


Figure 4.1 Response Rate

Source: Research Data (2026)

4.2.2 Profile of the Participants

The study examined the demographic profile of the Tilapia Fish traders within the market and the analysis is presented in Table 4.1.

Table 4.1 Profile of Participants

		Frequency	Percent
Gender	Male	149	62.9
	Female	88	37.1
	Total	237	100.0
Age	35 years and below	31	13.1
	36-45 years	87	36.7
	46-55 years	106	44.7
	56 years and above	13	5.5
	Total	237	100.0
Period trading in Tilapia	Less than a year	12	5.1
	1-3 years	88	37.1
	4-6 years	106	44.7
	Over 7 years	31	13.1
	Total	237	100.0

Source: Research Data (2026)

Results on Table 4.1 depicts that majority of the Tilapia fish traders (63%) in the market were male with 37% being female traders showing a significant portion of the business is owned/operated by male owners. The findings further highlight that 45% (n = 106) of the traders were between 46-55 years of age with 37% (n = 87) being between 36-45 years of age. The results showed there was fair distribution in the age set of traders within the market. The analysis in Table 4.1 showed that 45% of the firms have operated for at least 4-6 years, 37% for 1-3 years and 13% for over 7 years. This was an indicator that most of the businesses owners within the market were able to sustain operations beyond three years (when most SMEs fail).

4.2.3 Profile of the Tilapia Fish Traders Business

The research further reviewed the profile of the Tilapia Fish traders within the market and the summary of the findings is presented on Table 4.2.

Table 4.2 Profile of the Tilapia Fish Traders Business

		Frequency	Percent
Category of Trader	Wholesale	69	29.1
	Retail	168	70.9
	Total	237	100.0
Fish Quantity	Less than 50kgs	20	8.4
	Not more than 100 kgs	101	42.6
	Between 100 – 300 kgs	101	42.6
	More than 500kgs	15	6.3
	Total	237	100.0
Average Annual Income	Less than 100,000 shillings	31	13.1
	100,001-250,000 shillings	124	52.3
	250,001-500,000 shillings	64	27.0
	Over 500,00 shillings	18	7.6
	Total	237	100.0

Source: Research Data (2026)

The findings in Table 4.2 highlights that 71% of the firms are in the retail business with only 29% serving the wholesale market which implies there is room for more firms to expand their capacity and meet the wholesale demand for Tilapia Fish in the country. The study indicated that 43% of the firms sold less than 100kgs and between 100-300kgs respectively which can explain the small (retail) nature of the businesses. The results highlight that 52% of the firms annually make between 100,000 to 250,000 with 27% of the firms earning a revenue of 250,000 to 500,000 which shows there is room to improve the sales margin among the businesses.

4.3 Descriptive Analysis

The study adopted descriptive measures such as mean and standard deviation to summarize the responses obtained from the structured questions. The findings are shown in this section and presented in line with conceptualization of the variables.

4.3.1 Sales Performance among Tilapia Fish Traders

This section focused on the dependent variable the sales performance among the Traders and summary results are shown in Table 4.3

Table 4.3 Descriptive Statistics for Sales Performance

	N	Mean	Std. Deviation
I am able to sell most of my stock by the end of each business day	237	4.0506	.65546
My daily sales volumes have been increasing over time	237	4.4093	.81120
My fish stock moves quickly once it reaches the market	237	4.1941	.84139
The average income from fish trading has been supported by a stable price in the market	237	4.1519	.73799
I have many repeat customers who regularly buy from me	237	4.2996	.80709
I have witnessed an improvement in loyalty among my customer base	237	4.2869	.72043
I have received increased referrals of new customers to my business	237	4.3291	.81389

Source: Research Data (2026)

The overview of the analysis showed a mean of 4.409 those participants strongly agreed their daily sales volumes have been increasing over time which implies an increased demand for Tilapia in the market. A mean of 4.329 showed strong agreement among respondents they have received increased referrals of new customer to their business which points to increased patronage and quality of Tilapia fish in the market. Further a mean of 4.151 denotes agreement that the average income from fish trading has been supported by a stable price in the market which is an indicator that the quality and pricing resonate with the customers in Gikomba. The findings overall pointed to a high sales volume being achieved by most traders within the market indicating an increased demand for Tilapia fish.

4.3.2 Route to Market

The first objective examined the route to market channels employed by the Tilapia Fish traders and summary of results is showed in Table 4.4

Table 4.4 Descriptive Statistics on Route to Market

	N	Mean	Std. Deviation
The distribution channels I use allow me to access fish consistently	237	4.0295	.70348
I have multiple distribution options that ensure a steady flow of tilapia	237	4.3924	.75495
I can easily access the market to sell my fish on time	237	4.4684	.76749
Accessibility to the market influences the number of fish I am able to sell daily	237	4.0970	.50744
Transport arrangements I use ensure the fish arrives on time	237	4.3502	.63089
Efficient logistics improve my overall sales performance	237	4.7595	4.60255

Source: Research Data (2026)

The average mean scores for the variable ranged between 4.759 and 4.029. The results showed strong agreement that efficient logistics improve the overall sales performance for the traders (mean = 4.759). Analysis indicated strong agreement (mean = 4.392) that multiple distribution options that ensure a steady flow of tilapia. Further, a mean of 4.029 noted agreement that distribution channels allow access fish consistently for the traders. This indicated the vital role of distribution to the businesses and logistics generally play in sustaining the Tilapia fish business.

4.3.3 Consumer Preference

The second objective reviewed the consumer preferences within the market and how they affect the sales performance of the Tilapia Fish traders and summary of results is shown in Table 4.5

Table 4.5 Descriptive Statistics on Consumer Preference

	N	Mean	Std. Deviation
The quality of products I stock strongly influences repeat purchases	237	4.1477	1.97852
Customers prefer to buy from my kiosk because I consistently sell fresh products	237	4.3376	.70409
Offering different products is key to attracting customers to my kiosk	237	4.2447	.73012
I provide my customers with value addition services such as scaling, cleaning and refrigeration services	237	4.2489	.70804
Customers easily switch sellers when prices increase slightly	237	4.2785	.72375
Lower prices help me attract more customers	237	4.2827	.67667

Source: Research Data (2026)

The results showed strong agreement (mean = 4.337) the customers prefer to buy from the respondent's kiosk because they consistently sell fresh products suggesting that respondents viewed the quality of their product as key to return customers. The findings indicated strong agreement that businesses offer customers with value addition services such as scaling, cleaning and refrigeration services (mean = 4.248). This denoted that businesses viewed the additional value services as key to retaining more customers. The study noted agreement that quality of products stocked strongly influences repeat purchases as shown by mean of 4.147.

4.3.4 Supplier Relationship

The study third objective reviewed the nature of the supplier relationship within the market and how they affect the sales performance of the Tilapia Fish traders and summary of results is shown in Table 4.6

Table 4.6 Descriptive Statistics on Supplier Relationship

	N	Mean	Std. Deviation
My suppliers deliver products on time as agreed	237	4.0464	.62602
I can depend on my suppliers to consistently provide products with the right quantity and quantity	237	4.2363	.72125
Information from suppliers helps me plan my stock effectively	237	4.2278	.75828
I believe my suppliers act in the best interest of our business relationship.	237	4.2025	.66472
Suppliers are willing to adjust and support me during business challenges	237	4.2532	.65358
Trust with suppliers improves consistency in my business operations	237	4.3797	.66327

Source: Research Data (2026)

Respondents strongly agreed with the statement ‘trust with suppliers improves consistency in the business operations’ as shown by mean of 4.379. Further, there was strong agreement that suppliers act in the best interest of our business relationship (mean = 4.202). Study results indicated strong agreement suppliers are willing to adjust and support them during business challenges (mean = 4.253). These findings implied that respondents believed that maintaining good supplier relationship is vital to their operational success.

4.3.5 Government Regulation

The research fourth objective reviewed the government regulations within the market and how they affect the sales performance of the Tilapia Fish traders and summary of results is showed in Table 4.7

Table 4.7 Descriptive Statistics on Government Regulation

	N	Mean	Std. Deviation
I have the required licenses which allows me to operate my kiosk without interruptions	237	3.8228	.85012
Obtaining trading licenses is straightforward and accessible	237	3.9536	.96219
Meeting health and safety standards attracts more customers to my kiosk	237	3.8734	.88347
Customers prefer kiosks that follow proper hygiene and safety practices	237	3.8819	.98008
Taxes imposed on small kiosks affect the selling price of products	237	3.9325	.87556
High taxation reduces my profit margins and overall sales performance	237	4.0506	.95534

Source: Research Data (2026)

The analysis noted agreement among respondents that high taxation reduces the profit margins and overall sales performance (mean = 4.050). The mean of 3.873 that maintaining health and safety standards attracts more customers to their kiosk. The respondents also agreed that taxes imposed on small kiosks affect the selling price of products (mean = 3.932). These results that government regulations have played a role in curtailing the sales performance within the market.

4.4 Diagnostic Tests

The survey applied diagnostic tests before conducting the regression analysis to ensure that the findings of the study were from a model that adhered to linear regression assumptions. The results are shown in this section.

4.4.1 Collinearity Test

Multicollinearity check was conducted to investigate whether there was high linear dependency between the supply chain drivers. The study applied the Variance Inflation Factor tests to check for collinearity and results are shown in Table 4.8

Table 4.8 Collinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Route To Market	.799	1.251
	Consumer Preference	.575	1.739
	Supplier Relationship	.397	2.522
	Government Regulation	.585	1.708

a. Dependent Variable: Sales Performance

Source: Research Data (2026)

The results of the Variance Inflation Factor revealed values below 10 which is the standard value for indicating lack of collinearity problems within the selected supply chain drivers. This was further affirmed by the Tolerance values that were above 0.1.

4.4.2 Autocorrelation Test

The second tests conducted was autocorrelation tests which examined if the model prediction suffered from any serial correlation violations. The research applied the Durbin-Watson tests and results are presented below.

Table 4.9 Autocorrelation Test Results

Model	Durbin-Watson
1	1.699

a. Predictors: (Constant), Government Regulation, Route to Market, Consumer Preference, Supplier Relationship

b. Dependent Variable: Sales Performance

Source: Research Data (2026)

4.4.3 Normality Test

The research performed normality test to confirm if the observations utilized in the study were drawn from a normally distributed sample. The study utilized the normal p-p plot and results showed the findings fitted within the normality line which indicated there was no normality violation within the data.

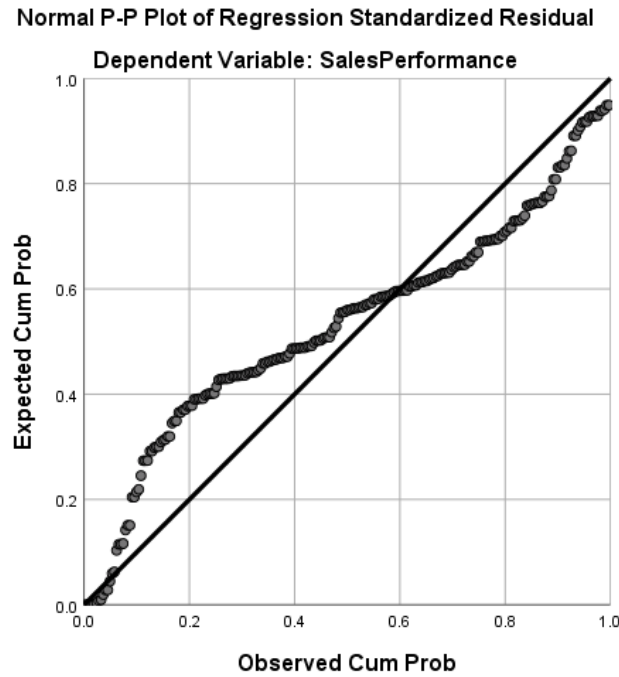


Figure 4.2 Normal P-P Plot

Source: Research Data (2026)

4.5 Inferential Analysis

The research conducted inferential analysis to establish the relationship between the variables selected for the study. The main tests conducted were correlation and regression analysis and the findings are shown in this section.

4.5.1 Correlation Tests

The correlation tests were conducted to determine the nature of the relationship between the variables. Spearman correlation analysis was performed, and the summary is shown in Table 4.8 below.

Table 4.10 Correlation Results

			Sales Performance	Route To Market	Consumer Preference	Supplier Relationship	Government Regulation
Spearman's rho	Sales Performance	Correlation Coefficient	1.000				
		Sig. (2-tailed)	.				
		N	237				
	Route To Market	Correlation Coefficient	.711**	1.000			
		Sig. (2-tailed)	.000	.			
		N	237	237			
	Consumer Preference	Correlation Coefficient	.657**	.609**	1.000		
		Sig. (2-tailed)	.000	.000	.		
		N	237	237	237		
	Supplier Relationship	Correlation Coefficient	.643**	.624**	.585**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.	
		N	237	237	237	237	
	Government Regulation	Correlation Coefficient	.564**	.466**	.517**	.603**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	237	237	237	237	237

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

Source: Research Data (2026)

The correlation coefficient ($r = .711^{**}$, $\text{Sig} = .000$) revealed there was a significant strong and positive relation between the route to market avenues and the sales performance of Tilapia fish traders in Gikomba Market. The analysis further revealed that consumer preferences had a strong positive and significant relation with the sales performance of Tilapia fish traders in Gikomba Market ($r = .657^{**}$, $\text{Sig} = .000$). The correlation coefficient ($r = .564^{**}$, $\text{Sig} = .000$) showed a significant moderate and positive relation between government regulations and sales performance of Tilapia fish traders in Gikomba Market.

4.5.2 Simple Linear Regression Tests

The research estimated an ordinary least square regression to establish the effect of individual supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya. The summary of the regression tests are presented below.

4.5.2.1 Route to Market and Sales Performance

The first objective examined the effect of route to market on the sales performance among tilapia fish traders and the regression summary is shown in Table 4.11 below.

Table 4.11 Regression between Route to Market and Sales Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.443 ^a	.196	.193	.50340

a. Predictors: (Constant), Route To Market

b. Dependent Variable: Sales Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.523	1	14.523	57.310	.000 ^b
	Residual	59.551	235	.253		
	Total	74.074	236			

a. Dependent Variable: Sales Performance

b. Predictors: (Constant), RouteToMarket

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.048	.162		18.860	.000
	Route To Market	.275	.036	.443	7.570	.000

a. Dependent Variable: Sales Performance

Source: Research Data (2026)

The regression summary showed that atleast 19.6% of the changes in the sales performance among fish traders are predicted by the route to market adopted by the traders. The ANOVA results indicated a F-value = 57.310, Sig = .000 indicating there was a positive and significant relationship between route to market and sales performance among Tilapia Fish Traders. The resulting coefficient = .275, sig = .000 revealed that changing route to market by a unit will yield a .275 improvement in the sales performance of Tilapia Fish Traders in Gikomba Market.

4.5.2.2 Consumer Preference and Sales Performance

The second research objective reviewed the effect of consumer preferences on the sales performance among Tilapia fish traders and the regression summary is shown in Table 4.12 below.

Table 4.12 Regression between Consumer Preference and Sales Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 ^a	.344	.342	.45462

a. Predictors: (Constant), Consumer Preference

b. Dependent Variable: Sales Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.505	1	25.505	123.404	.000 ^b
	Residual	48.569	235	.207		
	Total	74.074	236			

a. Dependent Variable: Sales Performance

b. Predictors: (Constant), Consumer Preference

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.678	.233		7.200	.000
	Consumer Preference	.603	.054	.587	11.109	.000

a. Dependent Variable: Sales Performance

Source: Research Data (2026)

The coefficient of determination $R^2 = .344$ showing that atleast 34.4% of the changes in the sales performance among fish traders are predicted by the consumer preferences in Gikomba Market. The ANOVA results indicated a F-value = 123.404, Sig = .000 indicating there was a positive and significant relationship between consumer preference and sales performance among Tilapia Fish Traders. The resulting coefficient = .603, sig = .000 revealed that changing the consumer preferences by a unit will yield a .603 improvement in the sales performance of Tilapia Fish Traders in Gikomba Market.

4.5.2.3 Supplier Relationship and Sales Performance

The third objective studied the effect of supplier relationship on the sales performance among Tilapia Fish traders in Gikomba market and summary findings are shown in Table 4.13 below.

Table 4.13 Regression between Supplier Relationship and Sales Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717 ^a	.514	.512	.39133

a. Predictors: (Constant), Supplier Relationship

b. Dependent Variable: Sales Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.086	1	38.086	248.704	.000 ^b
	Residual	35.988	235	.153		
	Total	74.074	236			

a. Dependent Variable: Sales Performance

b. Predictors: (Constant), Supplier Relationship

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.661	.229		2.889	.004
	Supplier Relationship	.849	.054	.717	15.770	.000

a. Dependent Variable: Sales Performance

Source: Research Data (2026)

The results of the regression coefficient confirmed that atleast 51.4% of the changes in the sales performance among fish traders are predicted by the supplier relationship among traders. The ANOVA results indicated a F-value = 248.704, Sig = .000 indicating there was a positive and significant relationship between supplier relationship and sales performance among Tilapia Fish Traders. The resulting coefficient = .849, sig = .000 revealed that changing supplier relationship by a single unit will lead to .849 improvement in the sales performance of Tilapia Fish Traders in Gikomba Market.

4.5.2.4 Government Regulation and Sales Performance

The fourth study objective reviewed the effect of government regulation on the sales performance among tilapia fish traders, and the regression summary is shown in Table 4.14 below.

Table 4.14 Regression between Government Regulation and Sales Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.445 ^a	.198	.194	.50286

a. Predictors: (Constant), Government Regulation

b. Dependent Variable: Sales Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.650	1	14.650	57.937	.000 ^b
	Residual	59.424	235	.253		
	Total	74.074	236			

a. Dependent Variable: Sales Performance

b. Predictors: (Constant), Government Regulation

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.941	.175		.000
	Government Regulation	.333	.044	.445	.000

a. Dependent Variable: Sales Performance

Source: Research Data (2026)

Regression analysis yielded a coefficient of determination = .198; revealing that atleast 19.8% of the changes in the sales performance among fish traders are predicted by the supplier relationship among traders. The ANOVA results indicated a F-value = 57.937, Sig = .000 indicating there was a positive and significant relationship between government regulation and sales performance among Tilapia Fish Traders. The resulting coefficient = .333, sig = .000 revealed that changing government regulation by a single unit will lead to .333 improvement in the sales performance of Tilapia Fish Traders in Gikomba Market.

4.5.3 Overall Regression Summary

The research estimated an ordinary least square regression to establish the effect of supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya. The summary is shown in Table 4.15

Table 4.15 Regression Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.749 ^a	.561	.553	.37458	1.699

a. Predictors: (Constant), Government Regulation, Route to Market, Consumer Preference, Supplier Relationship

b. Dependent Variable: Sales Performance

Source: Research Data (2026)

Table 4.15 results revealed the summary of the regression model examining the relationship between supply chain drivers on sales performance among tilapia fish traders in Gikomba Market, Kenya. They showed that supply chain drivers R-squared = .561; accounted for 56.1% of the variance in the sales performance within the Tilapia fish traders. The error term and additional variables not covered in the study account for the remaining 43.9% of variations.

Table 4.16 ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.522	4	10.381	73.984	.000 ^b
	Residual	32.551	232	.140		
	Total	74.074	236			

a. Dependent Variable: Sales Performance

b. Predictors: (Constant), Government Regulation, Route to Market, Consumer Preference, Supplier Relationship

Source: Research Data (2026)

The analysis above focused on the statistical significance of the model and the results in Table 4.16 showed F-statistic indicates statistically significant positive linear relationship exists between these two variables ($F(4, 232) = 73.984, .000 < 0.05$). This confirms supply chain drivers have a positive and significant relationship with sales performance among tilapia fish traders in Gikomba Market, Kenya.

Table 4.17 Coefficients Summary

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.340	.230		1.476	.141
Route to Market	.096	.030	.155	3.183	.002
Consumer Preference	.202	.059	.196	3.417	.001
Supplier Relationship	.626	.082	.529	7.649	.000
Government Regulation	-.004	.043	-.005	-.087	.931

a. Dependent Variable: Sales Performance

Source: Research Data (2026)

$$Y = .340 + .096X_1 + .202X_2 + .626X_3 + -.004X_4 + .230$$

The coefficient results for route to market ($\beta_1 = .096$, sig = $.002 < .05$) implied a positive and significant effect which showed that changing the variable by a unit will lead to an increase in the sales performance among Tilapia fish traders by .096. The analysis further had a coefficient for consumer preference ($\beta_2 = .202$, sig = $.001 < .05$) confirming a positive and significant effect which showed that changing consumer preference = by a unit will lead to an increase in the sales performance among Tilapia fish traders by .202.

Further, the findings on Table 4.11 revealed a coefficient for supplier relationship ($\beta_3 = .626$, sig = $.000 < .05$) implied a positive and significant effect which showed that changing the consumer preference will significantly lead to an increase in the sales performance among Tilapia fish traders by .626. The study indicated a coefficient for government regulation $\beta_4 = -.004$, sig = $.931 > .05$) implying there was an insignificant effect on the sales performance among Tilapia fish traders.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter will present a discussion of the findings of the study. It will provide the study's summary, a discussion comparing the findings to the reviewed literature and theory and then present the conclusions that can be drawn from the findings. The chapter concludes by providing the recommendations and offering suggestions for further research.

5.2 Summary of Findings

This study carried out investigation into the effect of supply chain drivers comprising Route to Market, Consumer Preference, Supplier Relationship, and Government Regulation on the sales performance of Tilapia fish traders in Gikomba Market, Kenya. The study was based on data collected from 237 traders operating in Gikomba informal market and carried out analysis using correlation and multiple regression. Results from the descriptive analysis were that most of the traders in Gikomba market are male (62.9%), aged between 36–55 years as only 31 were below 35 years old, and have been in fish trading for between 4 and 6 years. This finding suggests a relatively experienced respondent group. Sales-wise, the findings reveal that a majority of the traders operate at the retail level (70.9%), trading between 100–300 kg of fish per day and have average annual incomes of between KES 100,001–250,000.

Analysis on sales performance indicated high mean scores which average above 4.0 across all items, implying the traders experience strong stock turnover, repeat purchases, have loyal customers, and relatively stable income levels. Similarly, the supply chain drivers recorded relatively high mean scores, suggesting the traders have positive perceptions of their supply chain practices and rate them highly. Among the indicators, there was high agreement that the traders experience increasing daily sales volumes and receive new customer referrals frequently, suggesting their services and products meet customer expectations enough to inspire loyalty, trust, and positive word-of-mouth recommendations.

Correlation analysis was conducted on the data, and the results revealed a strong and positive relationship between the supply chain drivers and sales performance of small-scale fish traders at Gikomba Market. Route to market ($r = .711$) was shown to have the most significant correlation in the analysis, indicating a strong positive relationship between route to market and sales performance. The results also established moderately strong positive relationships

between consumer preference ($r = .657$), supplier relationship ($r = .643$), and sales performance. Out of the supply chain drivers, government regulation ($r = .564$) had the weakest correlation with sales performance among the four variables.

The regression analysis results revealed that strong positive effects of supply chain drivers on sales performance, with the independent variables collectively explaining 56.1% ($R^2 = .561$) of the variance in sales performance. This means that together, the supply chain drivers account for slightly more than half of the differences in sales outcomes observed by the 237 respondents. Supplier relationship ($\beta = .529$, $p = .000$) emerged as the single most significant positive predictor of sales performance, followed by consumer preference ($\beta = .196$, $p = .001$), then route to market ($\beta = .155$, $p = .002$). Government regulation was found to have no statistically significant direct effect in the regression model. The remaining 43.9 percent of the variance is attributed to factors that are not included in this model, implying that while these four variables have explanatory power, additional factors also play a role in influencing sales performance in the informal fast-food sector.

5.3 Discussion of Findings

This section discusses the findings from the study, comparing them with those made in the empirical review section.

5.3.1 Route to Market and Sales Performance

The findings are that route to market channels avenues have a statistically significant and positive effect on the sales performance of fish traders in Gikomba Market. This is evidenced by the strong positive correlation between route to market and sales performance ($\rho = 0.711$, $p < 0.01$) and the significant regression coefficient ($\beta = 0.155$, $p = 0.002$). These findings demonstrate that efficient distribution channels, reliable transport, and accessibility to the market are strong predictors of improved sales performance, implying that traders who can get their fish to market quickly and consistently will sell more, experience faster stock turnover, and achieve daily sales outcomes.

These findings align with logistics and distribution management theories which highlight that cost, time, and reliability in moving goods is a competitive necessity for businesses dealing in the fast-moving goods industry. From a supply chain management perspective, the effectiveness of information flow, physical distribution, and coordination among producers, suppliers and end consumers is a significant determinant of the speed and reliability of supply,

as well as profitability from sales. They also support the RBV which considers superior RTM arrangements to be strategic organizational resources that increase traders' competitive advantages. The theory affirms that traders who have established reliable, formal routes to market hold a resource that is difficult to replicate and can therefore sustain their advantage over time.

The finding that route to market avenues have a statistically significant and positive effects on sales performance echo much of the reviewed literature (Pedroza Filho and Castilho, 2020; Martínez-Cordero, et al. 2021; Munguti, et al. 2023). The study by Pedroza Filho and Castilho (2020) revealed that weak integration between farms and marketing actors constrains access to formal retail channels and reduced value realization among small-scale fish farmers and traders. Accessible routes to market were confirmed to enhance traders' ability to sell stock consistently. In Mexico, Martínez-Cordero et al. (2021) found out that formalizing fish trade routes stabilizes prices and reduces spoilage. The same is reported in Kenya where traders strongly agreed that efficient logistics and transport arrangements ensure timely delivery of fish to the market and improve overall sales performance (Kamaylo et al. 2021). This similarity in findings, despite Kenya's aquaculture sector being younger than Mexico's, suggests that when logistics are structured and reliable, sales performance will improve regardless of market maturity.

The findings also resonate with observations made by Amoah et al. (2021) whose analysis revealed that traders who are integrated into formalized RTMs sell larger volumes at more predictable prices. Despite this congruence, while the Ghanaian study emphasized formalized channels and aggregation, this study demonstrates that one does not need a rigid, formal corporate structure to succeed as flexibility and timing are more impactful in informal settings. Aside from the international and regional evidence, the findings corroborate findings made locally in studies such as Munguti et al. (2023) and Farm Africa (2024), which established a positive effect of strengthened buyer linkages, pooled sourcing, and access to multiple routes on traders' sales volumes. In this study, high scores on RTM indicators suggest that Gikomba traders benefit from adaptive sourcing and distribution strategies that help them respond to supply chain issues, price and demand fluctuations. By focusing on traders in Gikomba market, this study provides localized empirical evidence supporting broader findings on RTM effectiveness on trade performance.

5.3.2 Consumer Preference and Sales Performance

The findings on the second objective reveal a positive and statistically significant effect of consumer preferences on the sales performance of tilapia traders in Gikomba Market. This evidence is backed by the positive and statistically significant correlations established ($\rho = 0.657$, $p < 0.01$), and the significant regression coefficient ($\beta = 0.196$, $p = 0.001$). These findings demonstrate that meeting customer demands for freshness, quality, variety, and competitive pricing has direct effects on sales performance. For fish traders, this means that they can cultivate loyal customers by providing consistent quality products, on time and at competitive prices.

These findings are embodied under the SCM perspective which considers consumer preferences to represent the demand-side driver that guides upstream supply chain activities such as sourcing, handling, pricing, and value addition. The SCM theory recognizes customer responsiveness as a critical indicator of performance, arguing that the ability of suppliers to align their products with customer expectations of freshness, quality, and price is key to achieving superior market outcomes. From the perspective of Gikomba traders, clean traders who had fresh, high-quality fish, and competitive prices were more likely to get repeat purchases and referrals. Meanwhile, the RBV contends that the ability to understand and respond to consumer preferences is a strategic capability that can provide sustained competitive advantage to different categories of traders. Therefore, having the knowledge on consumer preferences is a strategic means to enhance sales performance.

These findings also converge with much of the empirical literature which shows universal agreement that meeting customer expectations for freshness and quality products is one of the most practical determinants of reliable sales performance (Jhan et al. 2023; Astana and Meliani, 2024; Kilonzo and Njoroge, 2021). According to these researchers, freshness remains a non-negotiable driver of sales, especially in the case of products with low shelf-life like fish. This similarity underscores the universal importance of freshness and perishability management in fish markets, regardless of geographical context or species difference, whether the product is white shrimp and tilapia.

There was agreement that traders who consistently sell fresh fish, offer product variety, and provide value addition services have more loyal customers and make more sales volume. Similar observations were made in Indonesia where Astana and Meliani (2024) established that alignment with consumer preferences has significant effects on sales performance, especially

when traders adapt their offerings to the evolving customer tastes such as health-conscious consumption. Similarly, Jhan et al. (2023), reported that freshness, taste, and price are the dominant determinants of seafood purchasing behavior in Taiwan, with freshness accounting for the largest share of decision-making.

There was also strong agreement that customers prefer kiosks that consistently sell fresh products but are still highly sensitive to price changes. Nigeria's Femi-Oladunni et al. (2023) also established a positive effect of responsiveness to consumer preferences for quality and price significantly influences food purchasing decisions. This study strengthens this finding by demonstrating that fish traders who emphasize product quality and offered value addition services while maintaining competitive prices consistently record higher sales outcomes. The study's findings are further reinforced by Githukia et al. (2020) who confirmed the importance of selling the most preferred fish species. The study confirmed the importance of meeting quality expectations, nutritional value, and health considerations, but confirmed that price does not dominate consumer choice.

Within the Kenyan context, the findings of this study strongly support previous evidence provided by Kilonzo and Njoroge (2021) and Ochieng and Atieno (2023) who identified freshness, hygiene, and affordability as key determinants of fish purchasing behavior. For this study, while refrigeration may not be of particular concern, basic value addition services such as cleaning and scaling were confirmed to still play a supportive role in enhancing customer satisfaction and repeat purchases.

5.3.3 Supplier Relationship and Sales Performance

The results of the study establish a positive and statistically significant effect of supplier relationship on the performance of Tilapia traders in Gikomba Market. This is supported by a strong positive correlation ($\rho = 0.643$, $p < 0.01$) and regression results showing supplier relationship as the strongest predictor of sales performance ($\beta = 0.529$, $p < 0.001$). This means that for fish traders, trustworthy, reliable, and collaborative suppliers who deliver on time, provide accurate information, and support traders during challenges have the most significant effect on the sales performance of Tilapia traders in informal markets like Gikomba Market.

The finding that supplier relationships are key drivers of Tilapia sales performance conforms to assertions of SCM that supplier relationship management is a core supply chain driver that enhances sales outcomes by improving flow of information and coordination, and reducing uncertainty, as well as frictions to the flow of goods. In this case, a relationship of trust between

suppliers and the traders enhances information sharing, ensures timely delivery and supplier reliability which is essential for supply efficiency and operational continuity. Moreover, both parties benefit from more accurate information which they use to plan stock, avoid shortages, and maintain consistent sales. These findings also corroborate the RBV which proposes strong supplier relationships as strategic relational resources that contribute significantly to a firm's sustainable competitive advantage and performance in informal settings. These relationships are personal and difficult to imitate and are highly dependent on the facilitating network of relationships.

The findings of this study are highly consistent with prior empirical literature, especially those which emphasize the role of trust-based supplier linkages on performance of perishable food supply chains (Pedroza-Gutiérrez & Hernández, 2020; Hsiao, et al. 2025; Obar, et al. 2025). Muyot et al. (2021), for instance, found that close supplier relationships and aggregation mechanisms enabled sardine traders in the Philippines to maintain consistent supply, reduce stockouts, and meet institutional buyer specifications. Similarly, there was agreement that dependable suppliers who deliver on time and adhere to agreed quantities and quality have positive effects on traders' ability to sustain daily sales performance. While Muyot et al. (2021) focused on sardines, the parallel outcomes suggest that supplier reliability is equally critical in tilapia trade despite species differences.

There was agreement that social capital is a suitable substitute for formal contracts, by reducing uncertainty and improving continuity in the supply chain. The results strongly align with Pedroza-Gutiérrez and Hernández (2020) whose analysis revealed that social networks and informal supplier relationships have been instrumental to the expansion of the Mexican fish trade. These findings are particularly relevant for the largely informal context of Gikomba Market, where relational trust contributes to increased trust, reliability and stability in the supply. They also reinforce the argument that informal supplier relationships are central to performance in developing-country food markets (Makhitha, 2019).

The findings also converge with Hsiao et al. (2025), who found weak supplier relationships and limited supplier choices to be the main causes on price volatility and reduced margins among Taiwanese seafood sellers. In this study, the ability to rely on supplier information for planning was confirmed to influence product availability, customer loyalty and repeat purchases. Similarly, Nkwabi and Fallon (2020) and Makhitha (2019) established that structured supplier relationship managements and supplier reliability improve inventory

management and sales reliability among SMEs and independent retailers. While these studies were not specific to perishable fish trade, they validate the conclusions of the current study by confirming the importance of closely-knit relationships in informal settings.

Within the Kenyan context, the findings strongly resonate with observations made by Obar et al. (2025) which concluded that traders with reliable suppliers experienced lower post-harvest losses in Kakamega's tilapia value chain. This study extends this evidence to Gikomba Market by linking reliable supplier relationships with sales performance, unlike Obar et al. (2025) who focused on farmers and post-harvest losses.

5.3.4 Government Regulation and Sales Performance

The final finding was that government regulations have a positive but statistically insignificant effect on the sales performance of Tilapia traders in Gikomba Market. While correlation analysis reveals moderate positive associations between government regulation and sales performance ($\rho = 0.564$, $p < 0.01$), regression results reveal that government regulation ($\beta = -0.005$, $p = 0.931$) does not significantly predict sales performance of fish traders when other supply chain drivers are included in the model. These findings imply that while compliance to regulations by ensuring all licenses are up-to-date, taxes are paid on time and hygiene standards are met may be correlated with sales performance, they do not have direct effects on sales outcomes when other operational drivers are in place. These findings may also imply that there is limited enforcement of articulated policy, and most of the fines and punishments are handled informally in such a way that does not affect performance outcomes.

The SCM model considers government regulations to be facilitators of a smooth working environment by influencing standards, compliance, taxation, and licensing requirements that businesses and their suppliers have to adhere to. From this perspective, supportive regulatory frameworks enhance supply chain efficiency by improving product safety, market trust, and coordination; factors that are necessary for supply chains to work effectively and actors to develop sustainable relationships over time. While SCM considers regulations to be institutional supply chain drivers, the current findings suggest that in informal market, regulatory factors are not central determinants of sales performance.

The finding that government regulations have an indirect effect on sales performance converge with and diverge from prior empirical literature, depending on context and level of analysis. In the study by Rao et al. (2021), for instance, it was established that food safety regulations in Europe have significant influences on market access, customer trust, and sales performance.

However, the study also confirmed a negative effect of strict compliance requirements on small firms' ability to compete in rare, yet lucrative food markets. This study aligns with this observation in that while traders acknowledged the importance of licenses, hygiene, and taxation, compliance has limited influence on sales performance when customer preferences are met, and traders develop reliable supplier relationships. This implies that in informal markets, compliance may provide basic legitimacy but is insufficient when the goal is to boost sales.

These findings also align with Noman et al. (2022) who found that fisheries policy in Pakistan had little to no effect on sector growth. For Noman et al. (2022), weak institutional support, inadequate infrastructure, and limited enforcement, as well as informality reduce the responsiveness to small-scale traders. This similarity with the current study suggests that Kenyan regulations may have insignificant impacts on sales outcomes because they may not be effectively enforced in informal settings. Meanwhile, Auriacombe and van der Walt (2021) reinforced concerns of disconnected regulatory frameworks on sales performance in research that revealed the negative impact of stringent regulations and taxes on small traders' ability to sustain sales. The study highlights the importance of developing a balance between enforcement and policy allowances for informal actors. Ibrahim and Peter (2025) also highlighted Regulatory constraints that increase the cost of operation and limit the sales of cultured fish.

Despite this, Akintola et al. (2024) found a positive effect of legal and policy frameworks on small-scale fisheries performance in Nigeria by safeguarding rights and improving sector sustainability. The findings also resonate with Musinguzi et al. (2021), who observed that although health regulations in Uganda improved consumer confidence, high compliance costs and inconsistent enforcement reduced trader profitability and participation in formal markets. This dual effect is reflected in the current study which reveals a positive correlation between regulation and sales performance, but insignificant effects on the regressions, suggesting that a combination of factors influence the effectiveness of regulations in improving the performance of fish retailers.

Within the Kenyan context, the results align closely with Obiero et al. (2019) and Karuga and Abila (2022), who reported that stringent regulations, licensing hurdles, and taxation had negative impacts on trader performance and contribute to market informality. This study reinforces these researchers, confirming that while regulation may shape the trading

environment, it does not independently drive sales performance among Gikomba traders, particularly in the presence of strong supplier relationships and consumer-driven practices.

5.4 Conclusions

Findings in this study show that the supply chain drivers investigated in the study have positive and significant effects on the sales performance of informal traders operating in the fish sector. Efficient routes to market significantly improve sales performance among tilapia fish traders at Gikomba Market, with well-structured distribution channels ensuring consistent product flow without interruptions, adequate market access expanding customer reach, and efficient logistics reducing post-harvest deterioration by enhancing accessibility, timely delivery, and logistics efficiency.

The study further concludes that consumer preferences in terms of quality and freshness significantly influence sales performance, and traders who align their offerings with buyer expectations consistently outperform those who do not. Price sensitivity highlighted the importance of balancing affordability with profitability, and offering variety in terms of fish sizes, cuts, and preparation options on repeat purchases, loyalty and referrals.

Supplier relationships were the most influential determinants of sales performance among fish traders at Gikomba Market, underscoring the importance of inter-firm trust and coordination in informal trade settings. Supply reliability ensures traders maintain adequate and consistent stock levels, while Information sharing between traders and suppliers was confirmed to improve decision making and reducing operational uncertainty.

Despite shaping the operating environment of fish traders, the study concludes that government regulations do not have a statistically significant direct effect on the sales performance of informal fish traders at Gikomba Market. Licensing and compliance requirements were confirmed to increase traders' burdens but inconsistent enforcement in informal settings means these factors have insignificant effects. On the other hand, health and safety standards were identified as sources of relational capital for some traders.

5.5 Recommendations

Based on the findings of the study and the conclusions that were drawn, the following recommendations were made;

5.5.1 Recommendations to Policy Makers

Regulations constrain business activity and push traders to informal arrangements. The study recommends that policy makers simplify/streamline licensing and tax collection processes to reduce the perceived burden of regulatory policies. They should pay close attention to the needs of small-scale traders and reconsider taxation levels, specifically introducing tiered licensing fees based on trader scale.

The study further recommends that policy makers advocate for greater financing of market infrastructure, including, but not limited to cold storage facilities, sanitation facilities, and transport networks to enhance the route to market and consumer preference (hygiene) drivers, and support efficient supply chains. Finally, the study calls on more structured training initiatives, including workshops on supplier negotiation, basic quality management, and record-keeping to help traders better leverage information and relational resources.

5.5.2 Recommendations to Fish Traders

Supplier relationships had the most significant effects on sales performance, and this study recommends that traders invest in Supplier Partnerships. They should strive to formalize relationships with key suppliers through better communication and fair dealings to improve reliability, credit terms, and collaborative support during shortages. This can be better achieved under groups and collective bargaining arrangements where they can advocate for better supplier relationships. Cultivating sustainable long-term relationships with reliable suppliers, especially through collective representatives would ensure consistency in quality and supply.

The study further calls on traders to invest in transport and logistics arrangements to minimize delays and spoilage. They can use collective groups to arrange or negotiate better transport rates and improve route to market efficiency and reduce cost variations. Finally, the study recommends that traders invest in and enhance value addition services (cleaning, cold storages, product variety) to ensure they meet consumer expectations for quality and freshness. They can also achieve this by systemizing quality checks to strengthen the reputation for freshness and justify premium prices.

5.5.3 Recommendations to Suppliers

Suppliers are also recommended to invest in developing supply chain networks and cultivating long lasting relationships with traders to streamline their operations and enable expansion. They should also invest in basic information and communication technologies such as mobile based communication platforms to share real-time updates on delivery schedules, pricing

changes, and stock availability with their clients. They should leverage their reliability to gain credibility and competitive advantage.

5.6 Suggestions for Further Studies

This study limited itself to analysis of supply chain drivers (Route to Market, Consumer Preference, Supplier Relationship, Government Regulation) on the sales performance of Tilapia fish traders in Gikomba Market, Kenya. This study limited its contextual and methodological scope to focus on small-scale traders working with perishable goods in a largely informal food sector. While informative, its limitations mean its findings may not be representative of many formal and informal markets. Future studies should address these limitations by conducting a similar study, but within the larger food market. This should include formal and informal markets to ascertain the effect of regulations on different types of traders. Moreover, comparative studies across different markets such as Kongowea in Mombasa, Kibuye in Kisumu, or smaller neighborhood fish retail points to enable cross-market comparisons and enhance the generalizability of the findings.

The study further recommends future research adopt a longitudinal approach to determine how these supply chain drivers impact income levels over time, and capture how fluctuations in supply chain dynamics, consumer demand patterns, and sales performance vary over time. In addition, the study recommends that future studies examine moderating or mediating variables such as trader size, access to finance, or technology adoption on this relationship. The study further recommends that future research adopts a mixed methods design that triangulates self-reported survey data with objective secondary data sources such as market transaction records, trader revenue logs, and supply logs where available. Research can also incorporate qualitative interviews and observational fieldwork alongside structured questionnaires to cross-validate findings and improve its reliability. Lastly, with 43% of the variance in sales performance being unexplained, this study recommends that future studies include factors such as the role of digital tools (mobile payments, supply apps) which are key factors that can enhance these critical supply chain key drivers.

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APPENDICES

Appendix I: Research Introduction Letter

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Friday, 16th January 2026

To Whom It May Concern,

Dear Sir/Madam,

RE: FACILITATION OF RESEARCH – NKURUNZIZA COLIN BITSINZE.

This is to introduce Nkurunziza Colin Bitsinze, who is a Master of Business Administration student at Strathmore University Business School, admission number MBA/167066/23. As part of our MBA program, Bitsinze is expected to do applied research and undertake a project. This is in partial fulfillment of the requirements of the MBA course. To this effect, he would like to request appropriate data from your organization.

Bitsinze is undertaking a research paper on "**Effect of Supply Chain Drivers on Sales Performance Among Fish Traders in Gikomba Market, Kenya.**" The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MBA seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and shall be willing to provide any further information if required.

Yours sincerely,

Alois Njenga,
Manager – MBA Programs,
Strathmore University Business School.



Appendix II: Ethics Review Letter



16th January 2026

Mr Bitsinze Nkurunziza,
Nkurunziza.bitsinze@strathmore.edu

Dear Mr Bitsinze,

RE: Effect of Supply Chain Drivers on Sales Performance Among Fish Traders in Gikomba Market, Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC3184/25**. The approval period is from **16th January 2026 to 15th January 2027**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, and MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification
- iv. Any changes, anticipated or otherwise, that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Appendix III: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 667771	Date of Issue: 07/February/2026
RESEARCH LICENSE	
	
This is to Certify that Mr. NKURUNZIZA COLIN BITSINZE of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: EFFECT OF SUPPLY CHAIN DRIVERS ON SALES PERFORMANCE AMONG FISH TRADERS IN GIKOMBA MARKET, KENYA for the period ending : 07/February/2027.	
License No: NACOSTI/P/26/4183838	
667771 Applicant Identification Number	 Ag. Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Verification QR Code	
	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

Appendix IV: Research Questionnaire

Hello,

My name is Bitsinze Nkurunziza, currently pursuing an MBA degree at Strathmore University. As part of the institutional requirements, I'm expected to undertake a research work within my area of expertise. As such, I'm in conducting an academic survey of among tilapia fish traders in Gikomba Market, Kenya and I would highly appreciate it if you could get involved in the study. Kindly provide honest responses to all the questions below.

Part A: Demographic Information

1. Kindly indicate your gender?

Male ()

Female ()

2. Kindly indicate your age category?

35 years and below ()

36-45 years ()

46-55 years ()

56 years and above ()

3. How long have you been involved in Tilapia fish trading?

Less than a year ()

1-3 years ()

4-6 years ()

Over 7 years ()

4. Under which category are you fish trading?

Wholesale ()

Retail ()

5. What quantity of fish are you trading on average in a day?

Less than 50kgs ()

Not more than 100 kgs ()

Between 100 – 300 kgs ()

More than 500kgs ()

6. What is your average annual income from fish trading?

Less than 100,000 shillings ()

100,001-250,000 shillings ()

250,001-500,000 shillings ()

Over 500,00 shillings ()

PART B: EFFECT OF SUPPLY CHAIN DRIVERS ON SALES PERFORMANCE AMONG TILAPIA FISH TRADERS IN GIKOMBA MARKET, KENYA

Please indicate in the table with a tick (✓) or across (×) with a scale of

5= strongly agree 4= Agree 3= Disagree 2= Strongly Disagree 1= Not at all, the extent to which you agree with the statements below.

	Statements on sales performance	1	2	3	4	5
1.	I am able to sell most of my stock by the end of each business day					
2.	My daily sales volumes have been increasing over time					
3.	My fish stock moves quickly once it reaches the market					
4.	The average income from fish trading has been supported by a stable price in the market					
5.	I have many repeat customers who regularly buy from me					
6.	I have witnessed an improvement in loyalty among my customer base					
7.	I have received increased referrals of new customer to my business					

PART C: SUPPLY CHAIN DRIVERS ON SALES PERFORMANCE AMONG TILAPIA FISH TRADERS IN GIKOMBA MARKET, KENYA

Please indicate in the table with a tick (✓) or across (×) with a scale of

5= strongly agree 4= Agree 3= Disagree 2= Strongly Disagree 1= Not at all, the extent to which you agree with the statements below.

	Statements on route to market avenues	1	2	3	4	5
1.	The distribution channels I use allow me to access fish consistently					

2.	I have multiple distribution options that ensure a steady flow of tilapia					
3.	I can easily access the market to sell my fish on time					
4.	Accessibility to the market influences the number of fish I am able to sell daily					
5.	Transport arrangements I use ensure the fish arrives on time					
6.	Efficient logistics improve my overall sales performance					

	Statements on consumer preferences	1	2	3	4	5
1.	The quality of products I stock strongly influences repeat purchases.					
2.	Customers prefer to buy from my kiosk because I consistently sell fresh products					
3.	Offering different products is key to attracting customers to my kiosk.					
4.	I provide my customers with value addition services such as scaling, cleaning and refrigeration services					
5.	Customers easily switch sellers when prices increase slightly					
6.	Lower prices help me attract more customers					

	Statements on supplier relationship	1	2	3	4	5
1.	My suppliers deliver products on time as agreed.					
2.	I can depend on my suppliers to consistently provide products with the right quantity and quality.					
3.	Information from suppliers helps me plan my stock effectively.					
4.	I believe my suppliers act in the best interest of our business relationship.					

5.	Suppliers are willing to adjust and support me during business challenges.					
6.	Trust with suppliers improves consistency in my business operations					

	Statements on government regulation	1	2	3	4	5
1.	I have the required licenses which allows me to operate my kiosk without interruptions.					
2.	Obtaining trading licenses is straightforward and accessible					
3.	Meeting health and safety standards attracts more customers to my kiosk.					
4.	Customers prefer kiosks that follow proper hygiene and safety practices.					
5.	Taxes imposed on small kiosks affect the selling price of products.					
6.	High taxation reduces my profit margins and overall sales performance.					

Thank you for participating

Appendix V: Sample register of licensed tilapia fish traders in the Gikomba Market

No.	Trader / Business Name	No.	Trader / Business Name	No.	Trader / Business Name
1	Arogo Fish and Fillet Supplies	51	Glorious Fisheries Gikomba	101	Nairobi Fish Supplier
2	Nabs Fish Point	52	The Fish Market	102	The World of Fish
3	Samaki Hali	53	Alrazak Fish Shop	103	Lake Pride Fish
4	Lake Victoria Fish Traders	54	One To Fish	104	Hope Ent Fish Wholesalers
5	Great White Fish Suppliers	55	LizTony Fish Suppliers	105	Lake Fish Depot
6	Madubuike Amarachi Supplies	56	Marina Fish Shop	106	Barizon Fish Supplies
7	Omogafarm Fresh Fish	57	Ruri Foods	107	Sharif Fish Supplier Wholesale & Retail
8	Kwa Samaki	58	Smart Ornamental Tilapia	108	Newport Fish Enterprise Wholesale
9	Gikomba Fish Market	59	Rendalli Fresh Tilapia	109	Fish and Experience
10	Deborah Fish Stop	60	Jambo Fish Ltd	110	Yaleo Kenya Fish Suppliers
11	Fish Point Nairobi	61	Fin N Fillets Tilapia	111	Rose Fish Supplies
12	Jaseme Fish Supplies	62	Dalas Tilapia	112	Seaview Suppliers
13	Lolwe Lake Fresh Supplies	63	Victory Farms	113	Eastleigh Fish Market
14	Munaz Fresh Fish Shop	64	Migingo Fish	114	Tamaduni Fish Depot
15	Nyausenge Fish Supplies	65	Samaki Express	115	Villa Seafood Supplies
16	Fresh Victoria Fish	66	Global Tilapia	116	Mwariri Fish Market
17	Peché Fish Supplies	67	Fresh Catch Fresh Tilapia Wholesale	117	Fig Tree Fresh Food
18	River Lake Fresh Fish	68	Nile Tilapia Farm	118	KanFish Suppliers
19	Samaki Industries	69	The Compound Fresh Tilapia and Fillets	119	TamTam Fish Shop
20	Samaki Poa	70	iKo Fresh Africa	120	Highway Fish Point

No.	Trader / Business Name	No.	Trader / Business Name	No.	Trader / Business Name
21	Vera Fish Store	71	Choice Meat Supply	121	Pazuri Fish
22	Victoria Fish	72	Joskam Tilapia	122	Ar-Razaq Fish Select
23	Victoria Tilapia	73	Tilapia Center	123	Majiwa's Fish
24	Victoria Farms	74	Rendalli Fresh Tilapia Kenya	124	Pthem Fish Shop
25	Achola Fish Point	75	Camino Ruiz Fish Agencies	125	Freddy Fish Supply
26	African Blue Fish Depot	76	Fresh Catch Fresh Tilapia	126	Robert Fresh Fish
27	Aquabest Fish	77	Samakgro Limited	127	Mwass Fresh Fish
28	Aquarech Fish Deli	78	Rio Fish Limited	128	Gevana Fish Shop
29	Bamaka Fish Shop	79	Coolcatch Distributors	129	Eve Fish Hub Suppliers
30	Chrophy Fish Point	80	Markiti Fish	130	Red Apron Limited
31	Kui Fish Market	81	Fisherman's Stop	131	Jim Fish Shop
32	Lani Fish Kenya	82	Apondo Fish Shop	132	One To Fish Depot
33	Loskas Fish Shop	83	Kendag Ltd	133	Nirvana Fish Suppliers
34	Lanji Fish Supplies	84	Mboka Fish Shop	134	Nyanngwe Fish Depot
35	Samaki Poa Traders	85	Tilapia Point	135	Wuod Lucy Fish Shop
36	Tamtam Fresh Fish	86	Aloha Food Supplies Ltd	136	Sychar Fish Farms
37	Fishpet Deli	87	Nor Supplies Limited	137	Likhani Fish Store
38	Aqua Paradise	88	Nairobi Fish Distributors	138	Reng Fish Traders
39	Fishmart Kenya	89	Bondo Fish Distributors	139	Tilapia Depot
40	Nor Supplies	90	Good Living Fish Shop	140	Optimum Fish Supplies
41	Samaking Fish Market	91	Jambo Fish Shop	141	Aqua Global Fisheries
42	Lake Victoria Fish Point	92	Moshe Shanny Distributors	142	Dala Meat Suppliers
43	Fine Meats Kenya	93	Sango Fish	143	Stockfish Dealers
44	Rozzy Suppliers	94	Yarona Fish Supplies	144	Gikomba Market Stall B12
45	Kisumu Ndogo Fish Point	95	Sofieflyfishing	145	Gikomba Market Stall C04
46	Twala Fish	96	Nyanam Fish Supplies	146	Gikomba Market Stall D07
47	Nairobi Fish Market	97	Doorstep Fish	147	Gikomba Market Stall E11
48	Port Victoria Fish Supplies	98	Duka la Samaki	148	Gikomba Market Stall F03
49	Alpha Seafood - Samaki Poa	99	Grenze Fish Depot	149	Gikomba Market Stall G09
50	Mama Decy Fresh Fish Gikomba	100	Nairobi Fish Dealers		