EFFECT OF RETAIL DISTRIBUTION STRATEGIES ON THE MARKET PERFORMANCE OF LIQUEFIED PETROLEUM GAS COMPANIES IN NAIROBI COUNTY, KENYA

SANDRA GIKUNDI

(153104)

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION AT STRATHMORE UNIVERSITY BUSINESS SCHOOL

FEBRUARY 2026

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, this dissertation contains no material previously published or written by another person except where due reference is made in the proposal itself.

© No part of this research proposal may be reproduced without the permission of the author and Strathmore University Business School

Name of Candidate: Sandra Gikundi

Signature: 

Approval

This dissertation of Sandra Gikundi was approved by the following:

Name of Supervisor: Dr. James Ndegwa

School/Institute/Faculty: Strathmore University Business School

Institution: Strathmore Business School

Signature: 

DEDICATION

I dedicate this thesis to my family - my husband, children, and parents - whose unwavering love, patience, and encouragement sustained me throughout this journey. Your belief in my aspirations gave me the strength to persevere, even in the most demanding moments.

To my friends, thank you for your constant support and for reminding me of the importance of balance and perspective.

Above all, I dedicate this work to God, whose grace, wisdom, and guidance made this achievement possible.

ACKNOWLEDGEMENT

I am deeply grateful to God for the strength, clarity, and perseverance granted to me throughout this academic journey. His faithfulness has been my anchor and source of inspiration.

I extend my sincere appreciation to my supervisor, **Dr. James Ndegwa**, of Strathmore Business School, for his invaluable guidance, thoughtful critique, and consistent support. His academic insight and encouragement greatly enriched this research and shaped its successful completion.

My gratitude also goes to the faculty and staff of Strathmore Business School for providing a stimulating learning environment and a program that challenged me to grow both intellectually and professionally.

I would like to acknowledge the industry practitioners, colleagues, and organizational leadership who generously shared their time, insights, and data, making this study possible. Your openness and cooperation added immense practical value to this research.

Finally, I extend my heartfelt appreciation to my family and friends for their steadfast encouragement, understanding, and sacrifices during this period. Your support created the space I needed to pursue this goal and see it through to completion.

ABSTRACT

The use of Liquefied Petroleum Gas (LPG) is expanding as a clean cooking fuel in Kenya. However, LPG companies face performance challenges stemming from fragmented distribution networks, limited retail access, and widespread non-compliance with regulatory standards. Despite efforts by regulators and marketers to improve supply chains and safety, existing studies have not sufficiently addressed how the structure and efficiency of retail distribution influence market performance in the Kenyan LPG sector. Therefore, the main objective of this study was to examine the effect of retail distribution strategies on the market performance of LPG companies in Nairobi County, Kenya. The specific objectives focused on examining the effects of distribution channel structure, retail accessibility, pricing strategy and distribution compliance on the market performance of LPG companies. This study was guided by the Resource-Based View and Dynamic Capabilities Theory. A descriptive cross-sectional design was used, with primary survey data collected from a sample census of 77 licensed LPG brand owners operating in Nairobi County, yielding 202 valid responses from the 231 targeted managerial respondents (88% response rate). The findings revealed a strong and positive relationship between distribution channel structure and market performance. Additionally, distribution channel structure emerged as the most influential predictor in the regression analysis. This finding suggests that well-coordinated and formally structured distribution systems significantly enhance market performance. Regarding the effect of retail accessibility, the results demonstrated a strong positive association with market performance as well as a significant predictor, thus, confirming that wider retail presence and improved accessibility contribute substantially to improved firm outcomes. With respect to pricing strategy, the results showed a strong positive relationship with market performance and ranked among the key predictors in the regression model, hence, highlighting the importance of competitive pricing and effective promotional strategies. The findings also demonstrated that distribution compliance had a significant positive effect on market performance. This result underscored the role of regulatory adherence and ethical conduct in supporting firm competitiveness and overall performance. Based on the study findings, policy interventions should prioritize strengthening formal retail distribution structures and expanding access to licensed LPG outlets. Additionally, regulatory frameworks should encourage transparent pricing and responsible promotional practices that emphasize safety and quality. Strengthening compliance monitoring and standardizing distributor audits would further reinforce ethical conduct and safety adherence. Managers of licensed LPG companies should focus on strengthening internal retail distribution capabilities as a strategic priority. Managers should also refine pricing and promotion strategies to balance affordability and profitability while clearly communicating product safety and quality to consumers. Since distribution compliance was found to significantly influence performance, firms should institutionalize regular compliance audits, distributor training, and ethical oversight mechanisms.

TABLE OF CONTENTS

DECLARATION i

DEDICATION ii

ACKNOWLEDGEMENT iii

ABSTRACT iv

LIST OF TABLES x

LIST OF FIGURES xi

LIST OF ABBREVIATIONS xii

OPERATIONAL DEFINITION OF TERMS xiii

CHAPTER ONE 1

INTRODUCTION 1

1.1 Introduction 1

1.2 Background of the Study 1

1.2.1 Retail Distribution Strategies 2

1.2.2 Market Performance 5

1.2.3 Liquefied Petroleum Gas Companies in Kenya 7

1.3 Problem Statement 8

1.4 General Objective 9

1.4.1 Specific Objectives 9

1.5 Research Questions 9

1.6 Scope of the Study 10

1.7 Significance of the Study 10

CHAPTER TWO 12

LITERATURE REVIEW 12

2.1 Introduction 12

2.2 Theoretical Framework 12
2.2.1 Resource-Based View (RBV) Theory 13
2.2.2 Dynamic Capability Theory 14
2.3 Empirical Review 16
2.3.1 Distribution Channel Structure and Market Performance 16
2.3.2 Retail Accessibility and Market Performance 17
2.3.3 Pricing Strategy and Market Performance 18
2.3.4 Distribution Compliance and Market Performance 20
2.4 Summary of Literature and Research Gap 22
2.5 Conceptual Framework 25
2.6 Chapter Summary 27
CHAPTER THREE 28
RESEARCH METHODOLOGY 28
3.1 Introduction 28
3.2 Research Philosophy 28
3.3 Research Design 29
3.4 Target Population 29
3.5 Sampling Design and Sample Size 30
3.6 Data Collection 31
3.6.1 Common Method Bias 33
3.6.2 Aggregation Across Multiple Respondents 33
3.7 Data Analysis 34
3.8 Research Quality 34
3.8.1 Piloting 34
3.8.2 Validity 35

3.8.3 Reliability: 35
3.9 Ethical Considerations 35
3.10 Chapter Summary 36
CHAPTER FOUR 37
PRESENTATION OF RESULTS 37
4.1 Introduction 37
4.2 Response Rate 37
4.3 Respondents' Demographic Data 37
4.4 Descriptive Statistics 39
4.4.1 Distribution Channel Structure and Market Performance of Licensed LPG Brand Owners in Nairobi County 40
4.4.2 Retail Accessibility and Market Performance of Licensed LPG Brand Owners in Nairobi County 42
4.4.3 Pricing Strategy and Market Performance of Licensed LPG Brand Owners in Nairobi County 44
4.4.4 Distribution Compliance and Market Performance of Licensed LPG Brand Owners in Nairobi County 46
4.4.5 Market Performance 48
4.5 Diagnostic Tests 50
4.6 Inferential Statistics 54
4.6.1 Correlations 54
4.6.2 Regression Analysis 57
4.6.2.1 Regression Analysis for Distribution Channel Structure and Market Performance 57
4.6.2.2 Regression Analysis for Retail Accessibility and Market Performance 59
4.6.2.3 Regression Analysis for Pricing Strategy and Market Performance 60

4.6.2.4 Regression Analysis for Distribution Compliance and Market Performance 62
4.6.2.5 Multiple Regression Analysis for Retail Distribution Strategies and Market Performance 64
4.7 Chapter Summary 70
CHAPTER FIVE 71
DISCUSSION, CONCLUSION AND RECOMMENDATIONS 71
5.1 Introduction 71
5.2 Summary of Main Results 71
5.3 Discussion of Findings 71
5.3.1 Distribution Channel Structure and Market Performance 71
5.3.2 Retail Accessibility and Market Performance 73
5.3.3 Pricing Strategy and Market Performance 74
5.3.4 Distribution Compliance and Market Performance 75
5.4 Conclusion 76
5.5 Recommendations 78
5.5.1 Policy Recommendations 78
5.5.2 Managerial Recommendations 78
5.5.3 Theoretical Recommendations 79
5.6 Limitations 79
5.7 Suggestions for Further Research 80
5.8 Chapter Summary 80
REFERENCES 82
APPENDICES 90
Appendix I: Participant Information Sheet and Consent Form 90
Appendix II: Ethical Approval and NACOSTI License 94

Appendix III: Questionnaire..... 96

Appendix IV: Sampling Frame – List of LPG Company Brand Owners..... 100

LIST OF TABLES

Table 2.1 Summary of Literature and Research Gaps 22
Table 2.2 Operationalization of Variables 26
Table 3.1: Reliability Statistics 35
Table 4.1: Response Rate 37
Table 4.2: Demographic Characteristics of Respondents 39
Table 4.3: Descriptive Statistics for Distribution Channel Structure 40
Table 4.4: Descriptive Statistics for Retail Coverage and Accessibility 44
Table 4.5: Descriptive Statistics for Pricing and Promotion Strategies 46
Table 4.6: Descriptive Statistics for Compliance with Regulatory and Ethical Standards 46
Table 4. 7: Descriptive Statistics for Market Performance 48
Table 4.8: Correlations ..... **Error! Bookmark not defined.**
Table 4.9: Normality Tests ..... **Error! Bookmark not defined.**
Table 4.10: Collinearity Diagnostics ..... **Error! Bookmark not defined.**
Table 4.11: Model Summary ..... **Error! Bookmark not defined.**
Table 4.12: ANOVA ..... **Error! Bookmark not defined.**
Table 4.13: Regression Coefficients ..... **Error! Bookmark not defined.**

LIST OF FIGURES

Figure 2.1 Conceptual Framework 26

Figure 4. 1: Scatter Plot between Market Performance and Distribution Channel Structure **Error! Bookmark not defined.**

Figure 4.2: Scatter Plot between Market Performance and Retail Coverage and Accessibility .....**Error! Bookmark not defined.**

Figure 4.3: Scatter Plot between Market Performance and Pricing and Promotion Practices .....**Error! Bookmark not defined.**

Figure 4.4: Scatter Plot between Market Performance and Compliance with Regulatory and Ethical Standards.....**Error! Bookmark not defined.**

Figure 4.5: A scatterplot of residuals versus predicted values .....**Error! Bookmark not defined.**

LIST OF ABBREVIATIONS

DCT	: Dynamic Capabilities Theory
EPRA	: Energy and Petroleum Regulatory Authority
LPG	: Liquefied Petroleum Gas
PIEA	: Petroleum Institute of East Africa
NACOSTI	: National Commission for Science, Technology and Innovation
NOCK	: National Oil Corporation of Kenya
RBV	: Resource Based View Theory
SPSS	: Statistical Package for Social Sciences
SU-ISERC	: Strathmore University Institutional Ethics Review Committee
VRIN	: Valuable, Rare, Inimitable, and Non-substitutable.

OPERATIONAL DEFINITION OF TERMS

Compliance with Regulatory and Ethical Standards

This refers to the degree to which companies adhere to legal, safety, and ethical guidelines such as meeting licensing requirements, avoiding unfair trade practices and maintaining robust cylinder safety protocols (Crane & Matten, 2016). In this study, reference is made to LPG companies and the unfair trade practices include illegal refilling, unlicensed distribution, and counterfeit branding.

Distribution Channel Structure

This refers to the formal configuration through which products move from brand owners to consumers, encompassing direct sales, franchises, dealers, and third-party logistics providers, to ensure an efficient and coordinated market delivery system (Kotler & Keller, 2009). In this study, the referenced product is LPG.

Pricing and Promotion Practices

These are strategies a company employs to set competitive prices and execute promotional tactics such as transparent pricing, consumer education, and effective branding, in order to enhance customer retention and satisfaction (Kotler & Keller, 2009). In this study, pricing and promotion practices refer to the pricing approaches and promotional tactics used by LPG companies.

Retail Coverage and Accessibility

This dneotes the extent to which retail outlets are conveniently located and readily available to consumers, encompassing factors such as geographic spread, proximity, and the presence of supportive delivery services (Levy, Weitz, & Grewal, 2009). In this study, the retail outlets or points refer to the LPG retail points such as refill stations, dealers, and delivery networks.

Retail Distribution Strategies

This involves the systematic planning and management of channels that enable companies to deliver products efficiently to end users, employing methods such as intensive, selective, or exclusive distribution to maximize market coverage and customer accessibility (Kotler & Keller, 2009). In this study, it includes four dimensions: distribution channel structure, retail coverage and accessibility, pricing and promotion practices, and compliance with regulatory and ethical standards.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Chapter One introduces the study by highlighting the importance of retail distribution strategies for the market performance of Liquefied Petroleum Gas (LPG) companies in Nairobi County, Kenya. It outlines the operational context, defines key concepts such as distribution channel structure, retail accessibility, pricing strategy, and distribution compliance, and clearly identifies licensed LPG brand owners as the focus of the research. The problem statement articulates clear conceptual, contextual, and methodological gaps, supported by existing literature at international, regional, and local levels. The objectives and corresponding research questions are aligned with the study's title and operational dimensions. Additionally, the scope is explicitly detailed, covering the geographical area (Nairobi County), methodological approach (descriptive cross-sectional), respondent profiles (distribution managers, commercial managers, marketing managers, safety managers, retail territory managers), and time frame (2025). The chapter concludes by clarifying the study's significance by highlighting its value to policy makers, industry stakeholders, and academic discourse.

1.2 Background of the Study

The transition toward cleaner and more sustainable energy sources has increased the demand for Liquefied Petroleum Gas (LPG) globally and in developing economies such as Kenya. LPG is increasingly recognized as an efficient alternative to traditional cooking fuels due to its environmental and health benefits. However, despite the growth in LPG demand, many urban and peri-urban households continue to experience challenges related to access, affordability, and safety of LPG products (World Bank, 2022).

Retail distribution strategies play a critical role in determining how effectively firms deliver products to consumers and maintain competitiveness within the market. Distribution decisions influence market reach, customer satisfaction, and operational performance by shaping how products are made available and accessed by consumers (Mutinda et al., 2022). Poorly structured

distribution systems may reduce market penetration and negatively affect firm performance, particularly in highly competitive and safety-sensitive sectors such as LPG (KIPPRA, 2021).

In Kenya, the LPG sector has experienced substantial growth due to increased urbanization and government efforts aimed at promoting clean energy adoption. Nevertheless, the sector continues to face challenges including fragmented distribution systems, illegal refilling practices, counterfeit cylinders, inconsistent regulatory compliance, and limited access to licensed retail outlets (EPRA, 2024; PIEA, 2024). These challenges have raised concerns regarding their implications for the market performance of licensed LPG firms.

Although previous studies have examined operational and strategic issues within Kenya's petroleum and gas sector, limited attention has been given to retail distribution strategies among licensed LPG brand owners. Existing studies have largely focused on areas such as supply chain management, project management, inventory systems, and human resource practices while overlooking how retail distribution dimensions influence firm performance outcomes (Ngure, 2019; Nyachomba & Achuora, 2022; Kiruja, 2021). This creates conceptual and contextual gaps regarding the role of retail distribution strategies in influencing market performance.

Consequently, this study focused on licensed LPG brand owners in Nairobi County to examine the effect of distribution channel structure, retail accessibility, pricing strategy, and distribution compliance on market performance. The study sought to provide empirical evidence on how strategic retail distribution decisions contribute to firm competitiveness and performance within Kenya's LPG sector

1.2.1 Retail Distribution Strategies

This study examined four key independent variables within the context of retail distribution strategies: distribution channel structure, retail accessibility, pricing strategy, and distribution compliance. Each variable is conceptualized by considering its application at global, regional (African), and local (Kenyan) levels. The selection of distribution channel structure, retail accessibility, pricing strategy, and distribution compliance was guided by both theoretical and contextual considerations. Distribution channel structure and retail accessibility capture the structural and market reach dimensions of distribution, while pricing strategy reflects market positioning and competitiveness (Kotler & Keller, 2009; Shupler et al., 2021). Distribution

compliance captures the regulatory and operational environment that characterizes Kenya's LPG sector (Oluwasanmi & Ogunro, 2021; Crane & Matten, 2016). Although other factors such as logistics efficiency and supplier coordination may influence firm performance, these dimensions were considered more appropriate because they directly reflect strategic decisions undertaken by licensed LPG brand owners and align with the Resource-Based View and Dynamic Capability Theory adopted in this study (Barney, 1991; Teece et al., 1997). Furthermore, the selected dimensions reflect key challenges repeatedly identified in the Kenyan LPG context, including accessibility limitations, fragmented distribution systems, pricing concerns, and regulatory compliance issues (EPRA, 2024; PIEA, 2024; Chege, 2013).

Distribution channel structure is defined as the formal configuration of the network through which products are delivered from brand owners to consumers. This includes the selection of channel types such as direct sales, exclusive franchises, authorized dealers, and third-party logistics providers. Globally, firms design their channel structures to balance market reach with quality control and service consistency (Kotler & Keller, 2009). In Africa, where infrastructural and regulatory challenges are common, companies often operate a mix of formal and informal channels. Firms that adopt well-structured, controlled channels tend to secure higher consumer trust. Locally in Kenya, licensed LPG companies are striving to strengthen their formal channel structures to counteract widespread illegal practices and to ensure that safety and brand integrity are maintained (Chege, 2013).

Retail accessibility refers to the extent to which consumers can conveniently obtain LPG products through adequately located retail outlets, delivery systems, and reliable product availability (Shupler et al., 2021). This variable encompasses factors such as outlet density, proximity to target markets, and the availability of supplementary delivery services. Globally, firms employ intensive distribution strategies, often leveraging digital innovations, to ensure widespread product availability (Levy, Weitz, & Grewal, 2009). Regionally, studies have shown that limited formal retail presence in Africa forces consumers toward informal vendors, reducing safety and consistency. In Kenya, especially in Nairobi County, expanding the number of licensed retail points and enhancing last-mile delivery are critical to overcoming accessibility barriers and ensuring reliable access to LPG products (Shupler et al., 2021).

Pricing strategy refers to the strategic methods used by companies to set competitive prices and to communicate product value through advertising, sales promotions, and consumer education (Oluwasanmi & Ogunro, 2021). It denotes the methods employed by firms to establish competitive pricing and communicate value to customers in order to improve customer retention and market competitiveness. This includes establishing pricing models that balance affordability with profitability and implementing promotional campaigns that enhance brand perception and customer loyalty. Globally, ethical pricing and transparent promotional strategies are seen as key to maintaining consumer trust in competitive markets (Kotler & Keller, 2009). In Africa, where price sensitivity is high, innovative approaches such as micro-payment systems and targeted promotions have helped formal LPG providers compete against lower-priced, informal alternatives. In Kenya, licensed LPG firms face the challenge of setting prices that are competitive yet sustainable, while also investing in promotional activities that emphasize product safety and reliability (Mungai & Wanyoike, 2015).

Distribution compliance refers to the extent to which companies adhere to legal requirements, safety protocols, and ethical norms (Shupler et al., 2021). This includes fulfilling licensing obligations, implementing proper safety measures for product handling and distribution, and avoiding unethical practices such as illegal refilling, unauthorized distribution, and counterfeit branding. Globally, strict compliance is a cornerstone in safety-sensitive industries, and firms that maintain high standards tend to enjoy enhanced consumer trust and competitive advantage (Crane & Matten, 2016). In Africa, uneven enforcement of regulations has historically led to the proliferation of non-compliant practices; however, companies that prioritize compliance are better positioned to build consumer confidence. In Kenya, regulatory bodies such as the Energy and Petroleum Regulatory Authority (EPRA) have stepped up oversight, and licensed LPG firms that invest in robust compliance mechanisms are observed to achieve higher operational integrity and market performance (Oluwasanmi & Ogunro, 2021).

Collectively, these dimensions provided a comprehensive framework for understanding retail distribution strategies. This study investigates how these various dimensions of retail distribution influence the market performance of licensed LPG firms in Nairobi County.

It is important to acknowledge that several of these dimensions, particularly pricing strategy and elements of promotion embedded within pricing and accessibility, overlap with components of the marketing mix as traditionally conceptualized in marketing literature (Kotler & Keller, 2009; Borden, 1964). However, this study examines these dimensions specifically through a retail distribution lens rather than as standalone marketing constructs. Distribution scholarship has long recognized that channel-level decisions about structure, coverage, pricing, and compliance constitute a strategic system that is broader than the marketing mix concept of "Place" (Coughlan, Anderson, Stern & El-Ansary, 2006; Rosenbloom, 2012; Anderson, Day & Rangan, 1997). Within this strategic system, pricing is examined as it relates to channel-level competitive positioning of licensed brand owners against informal operators, while promotional elements are studied as they pertain to how distribution networks communicate the value, safety, and legitimacy of the formal LPG supply chain to consumers.

Furthermore, the conceptualization of pricing strategy and distribution compliance as integrated constructs is consistent with how the distribution and capability literature handles multi-dimensional firm phenomena. Empirical capability research routinely measures marketing-related and distribution-related capabilities as integrated constructs that encompass closely related sub-dimensions (Vorhies & Morgan, 2005; Morgan, Vorhies & Mason, 2009; Krasnikov & Jayachandran, 2008). Similarly, institutional and legitimacy theory treats regulatory adherence and ethical conduct as components of a single institutional adherence construct rather than as separate phenomena (Suchman, 1995; Scott, 2014; Deephouse, Bundy, Tost & Suchman, 2017). This study therefore adopts the integrated-construct approach for pricing strategy (which captures both price-setting and pricing-adjacent promotional decisions) and for distribution compliance (which captures both regulatory and ethical adherence), consistent with established research practice in the distribution and capability literatures.

1.2.2 Market Performance

Market performance refers to how effectively firms within a sector operate in achieving efficiency, competitiveness, and sustainability while meeting consumer and stakeholder expectations (Wang, Lin, & Choi, 2020). It reflects the overall health of an industry in relation to economic value creation, regulatory compliance, innovation, and equitable competition (Malik, 2021). In

competitive sectors, strong market performance is often characterized by growing market share, high levels of customer satisfaction, profitability, and operational excellence.

The conceptualization of market performance adopted in this study draws on the Balanced Scorecard framework developed by Kaplan and Norton (1992, 1996), which conceptualizes firm performance as a multi-dimensional construct encompassing financial outcomes (profitability), customer outcomes (satisfaction, market share), internal process outcomes (operational efficiency), and learning and growth dimensions. This multi-indicator approach is consistent with subsequent work in performance measurement (Neely, Adams & Kennerley, 2002; Richard, Devinney, Yip & Johnson, 2009), which argues that single-indicator measures of firm performance are insufficient for capturing the strategic outcomes of firm-level decisions. The four indicators used to measure market performance in this study; profitability, market share, customer satisfaction, and operational efficiency, directly correspond to the financial, customer, and internal process dimensions of the Balanced Scorecard, adapted to the context of licensed LPG brand owners.

Performance is typically evaluated using both quantitative and qualitative indicators. The common metrics include market share, profitability ratios, pricing competitiveness, service quality, and operational efficiency indicators such as delivery speed and cost-to-revenue ratios (Babatunde, Gbadeyan, & Bamiduro, 2016). Other dimensions, such as adherence to safety standards, product innovation, and customer loyalty, also serve as performance benchmarks. These indicators help firms and policymakers assess how strategic decisions, including those related to distribution, influence industry outcomes.

In the Liquefied Petroleum Gas (LPG) sector, market performance is closely tied to the efficiency and integrity of retail distribution strategies. These strategies encompass the structure of distribution channels, geographic coverage and accessibility of retail outlets, pricing and promotional tactics, and the degree of distribution compliance (Mwangi & Muli, 2017; Omondi & Kamau, 2021). Firms that invest in well-coordinated retail networks, competitive pricing, and consumer engagement tend to achieve better performance outcomes, including increased customer retention, stronger brand equity, and profitability (Mutinda, Mwangi & Wekesa, 2022).

On the other hand, weak or fragmented distribution strategies can hinder market penetration and diminish customer satisfaction. Moreover, when non-compliant behaviors such as illegal refilling, use of counterfeit cylinders, and predatory pricing infiltrate the distribution system, they distort fair competition, threaten consumer safety, and erode trust in formal market players (EPRA, 2024; PIEA, 2024; Oluwasanmi & Ogunro, 2021). These practices undermine the performance of compliant firms, driving down profit margins and weakening their market position.

According to Mungai and Wanyoike (2015), firms that prioritize ethical distribution practices and invest in effective logistics and retail frameworks experience improved performance in areas such as service reliability, customer loyalty, and operational agility. Chege (2013) and KIPPRA (2021) further assert that regulatory alignment in distribution enhances firm competitiveness and resilience in highly contested markets such as Nairobi's LPG sector.

In this study, market performance was assessed through key indicators relevant to the LPG industry in Kenya, particularly among licensed brand owners. These include market share (as a measure of competitiveness), customer satisfaction (as a proxy for service quality), and operational efficiency (as reflected in delivery timeliness and distribution coverage). These indicators will provide a comprehensive understanding of how retail distribution strategies affect firm outcomes in Nairobi's dynamic LPG market environment.

1.2.3 Liquefied Petroleum Gas Companies in Kenya

Liquefied Petroleum Gas (LPG) has become an increasingly important source of clean energy in Kenya due to growing urbanization and efforts to encourage adoption of cleaner household fuels. The LPG sector in Kenya is regulated primarily by the Energy and Petroleum Regulatory Authority (EPRA), which oversees licensing, safety enforcement, and market regulation in collaboration with agencies such as the Kenya Bureau of Standards (KEBS) (EPRA, 2023).

Kenya's LPG market comprises different categories of participants including LPG retailers, wholesalers, storage and filling facilities, importers, exporters, and licensed LPG brand owners. As of 2025, the sector consisted of 77 licensed LPG brand owners alongside other market participants including 459 LPG cylinder retailers, 113 wholesalers and storage companies, 53 storage and filling sites, and 53 bulk LPG importers, exporters, and wholesalers (EPRA, 2023). However, this study specifically focused on the 77 licensed LPG brand owners because they are

directly responsible for strategic decisions regarding retail distribution, pricing, market accessibility, and compliance practices that influence firm performance.

Despite growth in LPG adoption in Kenya, the sector continues to experience challenges including inadequate distribution infrastructure, price volatility, illegal refilling practices, counterfeit products, and inconsistent regulatory compliance. These challenges negatively affect fair competition, consumer trust, and the market performance of licensed firms (EPRA, 2024; PIEA, 2024). Consequently, improving retail distribution strategies remains essential for enhancing competitiveness and strengthening performance outcomes among licensed LPG firms.

1.3 Problem Statement

The LPG sector has become increasingly important in supporting Kenya's transition toward clean energy, particularly in urban areas where demand for cleaner household fuels continues to increase. Despite growth in LPG consumption and increased investments in infrastructure and distribution systems, licensed LPG brand owners continue to experience challenges associated with market performance, including concerns relating to competitiveness, customer retention, and operational efficiency (EPRA, 2024). These challenges persist despite the presence of formal market structures intended to support effective product delivery and market expansion.

One of the major challenges facing the sector relates to the effectiveness of retail distribution strategies. Existing industry reports indicate persistent issues such as fragmented distribution systems, limited accessibility to licensed retail outlets, pricing pressures, and non-compliant market practices including illegal refilling and counterfeit products (EPRA, 2024; PIEA, 2024). These challenges distort competition and create operational difficulties for licensed LPG firms seeking to maintain market presence and achieve desirable performance outcomes. Consequently, concerns have emerged regarding whether existing retail distribution approaches adequately support market competitiveness within the formal LPG sector.

Previous studies conducted in Kenya have largely focused on operational and organizational aspects such as project management, inventory systems, green supply chain practices, and human resource systems (Ngure, 2019; Nyachomba & Achuora, 2022; Kiruja, 2021). While these studies provide useful insights, limited empirical attention has been directed toward retail distribution dimensions and their relationship with market performance among licensed LPG brand owners.

This creates a contextual and empirical gap regarding the extent to which retail distribution strategies are associated with market performance outcomes within the Kenyan LPG sector.

Therefore, this study sought to examine the effect of distribution channel structure, retail accessibility, pricing strategy, and distribution compliance on the market performance of licensed LPG brand owners in Nairobi County.

1.4 General Objective

The general objective of this study was to examine the effect of retail distribution strategies on the market performance of licensed Liquefied Petroleum Gas (LPG) brand owners in Nairobi County, Kenya.

1.4.1 Specific Objectives

The specific objectives of the study were to:

i. Determine the effect of distribution channel structure on the market performance of licensed LPG brand owners in Nairobi County.
ii. Assess the effect of retail accessibility on the market performance of licensed LPG brand owners in Nairobi County.
iii. Examine the effect of pricing strategy on the market performance of licensed LPG brand owners in Nairobi County.
iv. Evaluate the effect of distribution compliance on the market performance of licensed LPG brand owners in Nairobi County.

1.5 Research Questions

The study sought to answer the following research questions:

i. What is the effect of distribution channel structure on the market performance of licensed LPG brand owners in Nairobi County?
ii. What is the effect of retail accessibility on the market performance of licensed LPG brand owners in Nairobi County?

iii. What is the effect of pricing strategy on the market performance of licensed LPG brand owners in Nairobi County?
iv. What is the effect of distribution compliance on the market performance of licensed LPG brand owners in Nairobi County?

1.6 Scope of the Study

This study was limited to examining the effect of selected retail distribution strategy dimensions on the market performance of licensed LPG brand owners in Nairobi County, Kenya. The concept scope focused specifically on four dimensions of retail distribution strategy, namely distribution channel structure, retail accessibility, pricing strategy, and distribution compliance, while market performance was assessed using indicators relating to market share, customer satisfaction, and operational efficiency. The context scope was confined to licensed LPG brand owners operating within Nairobi County, which represents one of Kenya's largest and most competitive LPG markets. Specifically, the study focused on the 77 licensed LPG brand owners (oil marketing companies) involved in LPG distribution activities. Other industry participants such as retailers, wholesalers, storage companies, and unlicensed operators were excluded because they were not directly responsible for strategic retail distribution decisions examined in this study. The methodological scope involved the use of a positivist research philosophy and a descriptive cross-sectional research design. The study targeted approximately 230 managerial and operational personnel drawn from the 77 licensed LPG firms, including Distribution Managers, Operations Managers, Commercial Managers, Marketing Managers, Safety and Compliance Officers, and Retail Territory Managers. Primary quantitative data were collected using structured questionnaires and analyzed using descriptive and inferential statistics. The time scope covered the period from July 2025 to October 2025, during which data collection and study activities were undertaken.

1.7 Significance of the Study

This study is significant to several stakeholders. For LPG brand owners, it offers practical insights into how different distribution strategies influence firm performance, enabling better strategic alignment. For policymakers and regulators such as EPRA, the study provides evidence-based

recommendations to support regulatory reforms aimed at strengthening distribution integrity and enhancing market fairness. The study is also of academic interest and contribute to the limited body of knowledge on LPG retail distribution strategies in emerging markets, particularly in sub-Saharan Africa. Lastly, consumers stand to benefit indirectly through improved service delivery, safety, and product accessibility resulting from better-informed distribution strategies (EPRA, 2023; Oluwasanmi & Ogunro, 2021).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of relevant theoretical and empirical literature to provide a foundation for understanding how retail distribution strategies influence the market performance of licensed LPG companies in Nairobi County. It begins with an overview of the theories that underpinned the study, including the Resource-Based View and the Dynamic Capabilities Theory. The empirical literature review is structured around the four key dimensions of retail distribution strategies examined in this study: distribution channel structure, retail accessibility, pricing strategy, and distribution compliance. The chapter concludes with a summary of key insights from the literature, identification of research gaps, and an explanation of how this study contributes to addressing those gaps in the context of Kenya's LPG sector.

2.2 Theoretical Framework

A theoretical framework provides the conceptual foundation for understanding the relationships between key variables in a study. In the context of this research, the interaction between retail distribution strategies such as distribution channel structure, retail coverage, pricing strategy, and distribution compliance, and market performance outcomes necessitates a multidimensional theoretical approach. Retail distribution strategies influence both internal firm capabilities and external responses from the market, including customer satisfaction, competitive positioning, and operational efficiency.

To address this complexity, the study adopted a dual-theory approach, combining the Resource-Based View (RBV) and the Dynamic Capabilities Theory (DCT). The RBV emphasizes the importance of firm-specific resources and capabilities, such as an efficient retail network or proprietary distribution channels, as sources of competitive advantage (Barney, 1991). This theory supports the examination of how internal distribution assets contribute to superior market performance.

On the other hand, the DCT provides insight into how firms adapt their distribution strategies in response to dynamic and often unpredictable market environments, including regulatory changes,

shifting consumer preferences, and competitive pressures (Teece, Pisano & Shuen, 1997). It is particularly relevant in the LPG sector, where companies must respond rapidly to challenges such as price competition, regulatory enforcement, and logistical constraints.

This study was anchored primarily on the RBV theory and supported by DCT. RBV served as the principal theory because it explains how firm-specific resources and capabilities create competitive advantage and improve organizational performance (Barney, 1991). Retail distribution dimensions such as distribution channel structure, retail accessibility, pricing strategy, and distribution compliance represent strategic resources and capabilities that may enhance market performance among LPG firms. Dynamic Capability Theory complemented RBV by explaining how firms adapt and reconfigure these resources in response to changing market conditions, competitive pressures, and regulatory environments.

2.2.1 Resource-Based View (RBV) Theory

The Resource-Based View (RBV) theory was first introduced by Edith Penrose in her 1959 book, *The Theory of the Growth of the Firm*, and later expanded by Jay Barney in 1991. Penrose postulated that a firm's internal resources form the foundation of its strategic advantage and that leveraging these resources effectively determines its potential for growth. Barney refined this idea through the VRIN framework, which posits that resources must be Valuable, Rare, Inimitable, and Non-substitutable for a firm to achieve sustained competitive advantage (Barney, 1991; Srivastava et al., 2001; Penrose, 1959).

RBV is grounded in the assumption that internal capabilities, both tangible and intangible, are more important than external positioning in determining firm performance. It suggests that when a firm possesses resources that are strategically relevant and cannot be easily acquired or imitated by competitors, the firm can outperform rivals over time. Such resources include technological capabilities, skilled human capital, brand equity, distribution infrastructure, and compliance systems (Wernerfelt, 1984; Varadarajan, 2020).

In relation to this study, RBV provided the primary lens for explaining how retail distribution strategy dimensions represent firm-specific resources and capabilities that may influence market performance among licensed LPG brand owners in Nairobi County. Distribution channel structure was conceptualized as a strategic organizational capability reflected through the firm's ability to

establish and manage effective distribution arrangements and retail networks. Retail accessibility represented a distribution resource associated with market reach and availability of products to customers. Pricing strategy was viewed as a strategic capability influencing competitiveness and customer value creation through pricing approaches and market positioning mechanisms. Distribution compliance represented an intangible organizational capability associated with maintaining regulatory adherence, brand reputation, customer trust, and operational integrity. These constructs were operationalized through measurable indicators relating to channel configuration, accessibility and availability mechanisms, pricing practices, and compliance systems adopted by firms. Consequently, the selected variables represented heterogeneous organizational resources that differ across firms and may contribute to differences in market performance outcomes (Mutinda et al., 2022; Kariuki & Karihe, 2023).

However, RBV has several limitations. One of the most cited criticisms is its static nature, which makes it less suitable for analyzing rapidly evolving and unpredictable environments. The theory assumes that firms already possess valuable resources, overlooking how such resources are developed or reconfigured in response to environmental changes. Additionally, the VRIN criteria can be difficult to apply in practice, especially in sectors such as LPG where external pressures such as regulatory changes and illegal market activities can quickly erode a firm's competitive advantage (Freeman et al., 2021; Teece, 2007).

2.2.2 Dynamic Capability Theory

Dynamic Capability Theory was developed by Teece, Pisano, and Shuen in 1997 as a response to the limitations of RBV. The theory argues that in dynamic markets, firms require more than static resources; they must develop capabilities to continuously adapt, integrate, and reconfigure their resource base in response to changes in the external environment (Teece et al., 1997; Teece, 2007).

The theory is built on three core postulations: sensing, seizing, and transforming. Sensing involves identifying threats and opportunities in the environment, such as changes in consumer behavior, regulatory requirements, or the emergence of illegal market practices. Seizing refers to mobilizing and deploying organizational resources to exploit opportunities or address challenges. Transforming involves modifying structures, systems, and processes to ensure sustained alignment with environmental demands and changing market conditions (Bleady et al., 2018; Pisano, 2015).

In this study, Dynamic Capability Theory complemented RBV by explaining how licensed LPG firms continuously adapt their retail distribution strategies in response to a dynamic operating environment. Distribution channel structure reflected firms' ability to reconfigure and strengthen distribution arrangements in response to changing market demands. Retail accessibility represented the capability to expand market reach and improve customer access through adjustments in outlet networks and delivery mechanisms. Pricing strategy operationalized dynamic capability through firms' ability to adjust pricing approaches and market positioning in response to competitive pressures, changing consumer preferences, and market conditions. Distribution compliance represented adaptive organizational capabilities through the ability of firms to align internal operational processes with evolving regulatory requirements and safety standards. These capabilities were operationalized through measurable indicators related to channel flexibility, market accessibility mechanisms, pricing practices, and compliance systems adopted by firms. Consequently, the selected variables represented observable manifestations of firms' sensing, seizing, and transforming capabilities within the LPG retail environment (Njiru, 2024; Cavusgil et al., 2007).

Nonetheless, Dynamic Capability Theory has its own criticisms. It is often regarded as too broad and lacking operational clarity, making empirical validation difficult. Moreover, it assumes that all firms have the capacity to develop dynamic capabilities, ignoring constraints such as limited resources, managerial rigidity, or regulatory barriers (Gremme & Wohlgemuth, 2017; Barreto, 2010).

By integrating RBV and Dynamic Capability Theory, this study creates a comprehensive framework to evaluate how retail distribution strategies impact market performance. RBV provides insights into how internal resources and firm-specific capabilities contribute to competitive advantage, while Dynamic Capability Theory complements this perspective by explaining how firms adapt and reconfigure these capabilities in response to changes within the operating environment. Together, these theories provide a comprehensive analytical lens for understanding the relationship between retail distribution strategy dimensions and market performance among licensed LPG firms in Nairobi County (Ferreira & Coelho, 2017; Teece, 2007).

2.3 Empirical Review

2.3.1 Distribution Channel Structure and Market Performance

Distribution channel structure in the LPG sector refers to the framework through which LPG cylinders and related services reach consumers, encompassing direct sales outlets, exclusive dealerships, third-party retailers, and hybrid models. Studies have shown that the structure of distribution channels plays an important role in influencing operational efficiency and market outcomes. For example, Mwangi and Muli (2017) found that vertically integrated firms in Kenya's petroleum sector benefit from tightly controlled distribution channels, leading to enhanced coordination, cost control, and consistent brand messaging. Similarly, Mutinda et al. (2022) reported that firms with well-structured distribution channels experience improved delivery timelines and inventory tracking, which subsequently enhance customer trust and overall market performance.

However, the relationship between distribution channel structure and firm performance has not been consistently observed across studies. Omondi and Kamau (2021) noted that loosely managed channel structures, particularly those involving a combination of formal and informal intermediaries, expose firms to risks associated with inconsistent service quality and product safety. Such informal systems not only compromise consumer safety but may also weaken brand reputation and consumer confidence. Regulatory reports by EPRA further indicate that practices such as illegal refilling and unauthorized distribution channels continue to affect the formal LPG market, suggesting that the effectiveness of channel structures may be influenced by the prevailing operating environment.

Differences also emerge across contextual settings. Global literature emphasizes the importance of structured and optimized channel configurations in achieving market penetration and efficiency (Kotler & Keller, 2009). However, such findings are largely drawn from developed markets characterized by mature distribution systems, strong regulatory enforcement, and lower dependence on informal market structures. In contrast, many African markets, including Kenya, operate within environments characterized by regulatory inconsistencies, infrastructural constraints, and the significant presence of informal market actors, which may limit the

applicability of findings from developed contexts (Chege, 2013). Consequently, the effectiveness of distribution channel structures may vary considerably across contexts.

Methodological differences among previous studies also present limitations. Most studies examining distribution channel structures have predominantly relied on cross-sectional survey approaches and have largely concentrated on operational outcomes such as delivery efficiency and inventory control. Limited attention has been given to broader market performance indicators such as customer satisfaction, market share, and competitiveness among licensed LPG firms. Additionally, few studies have specifically examined the LPG sector within Kenya's retail distribution environment. Therefore, a contextual and methodological gap exists regarding how distribution channel structure relates to market performance among licensed LPG firms in Nairobi County. This study seeks to address this gap by examining the relationship between distribution channel structure and market performance within the Kenyan LPG sector.

2.3.2 Retail Accessibility and Market Performance

Retail accessibility refers to the extent to which consumers can conveniently obtain LPG products through accessible retail outlets, reliable product availability, and supporting delivery mechanisms. Previous studies indicate that accessibility plays an important role in influencing customer behavior and market outcomes by determining the ease with which consumers obtain products and services. KIPPRA (2021) identified inadequate access to licensed LPG vendors as a key factor driving demand toward illegal refillers in peri-urban areas, suggesting that limited accessibility may negatively affect both consumer behavior and formal market performance. Similarly, Shupler et al. (2021) reported that households with easier access to authorized retail outlets were more likely to consistently use LPG products, while Levy, Weitz, and Grewal (2009) argued that wider geographic accessibility and strategically located outlets enhance consumer satisfaction and improve market penetration.

However, findings regarding the relationship between accessibility and performance are not entirely consistent across contexts. While studies generally associate greater accessibility with positive market outcomes, evidence from several African settings suggests that structural and environmental constraints often limit these benefits (Chege, 2013). In many developing markets, insufficient formal retail networks force consumers to rely on informal distribution channels,

thereby exposing them to inconsistent service quality and safety risks. In Kenya, consumers in peri-urban areas frequently encounter long travel distances, high transportation costs, and limited availability of licensed LPG outlets, conditions that may reduce refill frequency and encourage dependence on informal suppliers (Chege, 2013; Shupler et al., 2021).

Contextual differences further complicate the interpretation of existing findings. Global studies frequently emphasize technological and logistical innovations such as mobile ordering systems, digital platforms, and home delivery services as mechanisms for improving accessibility and strengthening market performance (Shupler et al., 2021). Such approaches are commonly implemented in mature markets characterized by stronger infrastructure, widespread digital adoption, and more organized distribution systems. In contrast, many African markets continue to face infrastructural limitations and uneven retail development, potentially reducing the effectiveness and transferability of findings from developed economies.

Methodological limitations are also evident in existing literature. Many studies examining accessibility have relied on cross-sectional survey designs and have primarily focused on consumer adoption and usage patterns rather than broader market performance indicators such as market share, customer satisfaction, and operational efficiency. Additionally, limited empirical attention has been directed toward licensed LPG brand owners within Kenya's retail environment. Consequently, a contextual and methodological gap exists regarding the extent to which retail accessibility influences market performance among licensed LPG firms in Nairobi County. Therefore, this study sought to examine how accessibility dimensions such as outlet proximity, market reach, and product availability relate to market performance outcomes among licensed LPG firms.

2.3.3 Pricing Strategy and Market Performance

Pricing strategy is an important determinant of consumer choice, market positioning, and firm performance in the LPG sector. Previous studies suggest that pricing decisions influence customer acquisition, retention, and competitiveness by shaping consumer perceptions regarding affordability and value. Mungai and Wanyoike (2015) reported that effective pricing approaches among oil marketing firms contribute to improved customer retention and profitability, suggesting

that firms that achieve an appropriate balance between affordability and profitability are more likely to strengthen their competitive position.

Similarly, Kotler and Keller (2009) argue that pricing decisions influence not only purchasing behavior but also broader market outcomes such as brand perception and customer loyalty. Effective pricing approaches allow firms to communicate value while maintaining competitiveness within the market. Consequently, firms that implement pricing mechanisms aligned with customer expectations and market conditions may improve market penetration and strengthen customer relationships.

However, findings regarding pricing strategy and performance are not entirely consistent across studies and contexts. Several studies have shown that markets characterized by informal activities such as illegal refilling and counterfeit branding create significant pricing distortions that affect competition among formal market players (Oluwasanmi & Ogunro, 2021). Under such conditions, informal operators frequently offer lower prices without adhering to quality and safety standards, making it difficult for licensed firms to compete effectively while maintaining operational and regulatory requirements.

Contextual differences also influence the applicability of existing findings. Studies conducted in developed markets often assume relatively stable regulatory environments and structured competitive systems where pricing mechanisms function under controlled market conditions (Kotler & Keller, 2009). In contrast, many African markets operate within environments characterized by high consumer price sensitivity, infrastructural limitations, and varying regulatory enforcement. Innovative approaches such as micro-payment systems and flexible refill mechanisms have been proposed as strategies for improving affordability and expanding market reach; however, evidence regarding their effectiveness remains inconclusive (Lewis, 2012; Tveito, 2020).

Methodological limitations are also evident within existing literature. Most previous studies examining pricing strategy have relied on cross-sectional approaches and have focused primarily on profitability and consumer purchasing behavior while giving limited attention to broader market performance outcomes such as market share, customer satisfaction, and operational efficiency. Furthermore, limited empirical evidence exists regarding the influence of pricing strategy within

Kenya's LPG sector, particularly among licensed LPG brand owners operating within a highly competitive and regulated environment. Consequently, a contextual and methodological gap exists regarding the relationship between pricing strategy and market performance among licensed LPG firms in Nairobi County. Therefore, this study sought to examine how pricing strategy relates to market performance outcomes among licensed LPG firms.

In the present study, pricing strategy is conceptualized as an integrated construct that encompasses both pricing decisions (such as price-setting relative to informal competition) and the pricing-adjacent promotional communications through which licensed firms convey the value and legitimacy of their pricing to consumers. This integrated conceptualization is consistent with established practice in marketing capability research, where pricing capability is routinely measured as a construct that includes both price-setting and price-communication elements (Vorhies & Morgan, 2005; Morgan, Vorhies & Mason, 2009). Treating pricing strategy as an integrated construct rather than splitting it into separate pricing and promotion variables is appropriate in the LPG retail distribution context because pricing decisions and the promotional messaging that supports them function together as a single strategic lever through which licensed firms differentiate themselves from informal market operators on the basis of safety, quality, and legitimacy.

2.3.4 Distribution Compliance and Market Performance

Distribution compliance refers to adherence to regulatory requirements, safety protocols, and operational standards governing LPG distribution activities (Chege, 2013). In highly regulated and safety-sensitive sectors such as LPG, compliance is considered an important determinant of organizational credibility and sustainable market performance. Previous studies suggest that adherence to regulatory and ethical standards contributes to reduced operational risks and stronger customer confidence. Oluwasanmi and Ogunro (2021) demonstrated that strict compliance within the LPG sector minimizes safety risks and contributes to improved consumer trust. Similarly, Crane and Matten (2016) contend that firms that consistently comply with legal and ethical standards are more likely to sustain long-term competitive advantage.

However, the relationship between compliance and performance has not been uniformly established across studies and contexts. Chege (2013) found that non-compliance through practices

such as illegal refilling, unauthorized distribution, and counterfeit branding significantly undermines consumer confidence and weakens firm performance. Such findings suggest that the benefits of compliance may depend on the extent of regulatory enforcement and prevailing market conditions. Furthermore, while many studies emphasize the negative consequences of non-compliance, fewer studies provide empirical evidence regarding how proactive compliance mechanisms directly contribute to performance outcomes among formal firms.

Contextual differences also emerge across geographical settings. Global literature generally emphasizes compliance as a critical requirement in safety-sensitive industries operating within structured and highly regulated environments (Kotler & Keller, 2009). Such environments typically have stronger enforcement systems and relatively lower prevalence of informal market activities. In contrast, many African markets continue to experience inconsistent regulatory enforcement and a substantial presence of informal operators, which often create challenges in maintaining fair competition and effective compliance systems. Within Kenya, regulatory institutions such as EPRA have intensified oversight measures to reduce illegal market practices; however, enforcement effectiveness may vary across regions and market segments.

Methodological limitations are also evident in existing literature. Previous studies examining compliance have predominantly focused on regulatory outcomes, ethical conduct, and safety issues while giving limited attention to broader market performance indicators such as customer satisfaction, market share, and operational efficiency. In addition, many studies have examined the consequences of non-compliance rather than evaluating the strategic value of proactive compliance practices among licensed firms. Consequently, a contextual and methodological gap exists regarding the extent to which distribution compliance relates to market performance among licensed LPG firms in Nairobi County. Therefore, this study sought to examine how distribution compliance influences market performance outcomes among licensed LPG firms operating in Nairobi County.

Similarly, distribution compliance is conceptualized in this study as an integrated construct that captures both regulatory adherence (compliance with formal legal and safety standards) and ethical conduct (adherence to broader normative expectations of fair and responsible business behaviour). This integrated conceptualization is grounded in institutional and legitimacy theory, which treats regulatory and normative adherence as components of a single organizational legitimacy construct

rather than as separate phenomena (Suchman, 1995; Scott, 2014; Deephouse, Bundy, Tost & Suchman, 2017). In the LPG sector, where consumer trust is shaped jointly by perceptions of regulatory compliance and ethical conduct, treating these dimensions as a single distribution compliance construct provides a more theoretically coherent and analytically parsimonious approach than splitting them into separate variables.

2.4 Summary of Literature and Research Gap

Although previous studies provide important insights regarding retail distribution and organizational performance, several limitations remain evident. Conceptually, many studies have examined distribution-related dimensions independently without integrating them within a unified retail distribution strategy framework. Theoretically, existing studies have largely emphasized operational or organizational perspectives with limited application of resource-based and adaptive capability perspectives in explaining how distribution capabilities influence performance outcomes. Methodologically, most previous studies relied predominantly on cross-sectional survey designs and concentrated on operational outcomes such as efficiency, cost reduction, and customer adoption while giving limited attention to broader market performance indicators including market share, customer satisfaction, and operational performance. Contextually, many studies were conducted outside Kenya's LPG sector, making generalization difficult due to differences in market structures, regulatory environments, and competitive conditions. These conceptual, theoretical, methodological, and contextual gaps justify the need for the present study. Table 2.1 summarizes these gaps in detail and illustrates how the current study intends to address them.

Table 0.1 Summary of Literature and Research Gaps

Author(s) & Year	Focus of the Study	Key Findings	Research Gap Identified	How the Current Study Addresses the Gap
Objective 1: Distribution Channel Structure				
Mwangi & Muli (2017)	Distribution structures in petroleum firms in Kenya	Vertically integrated firms benefit from coordination and efficiency.	Contextual gap: The study focused on petroleum firms generally and did not specifically examine licensed LPG brand owners. Conceptual gap: The study did not	Examines the relationship between distribution channel structure and market performance outcomes among

			assess how specific distribution channel structures influence market performance indicators.	licensed LPG brand owners in Nairobi County.
Mutinda et al. (2022)	Formal distributor relationships and operational efficiency	Structured channels enhance delivery and inventory control.	Methodological gap: The study focused on operational outcomes such as inventory efficiency and delivery performance without examining broader market performance indicators such as market share and customer satisfaction.	Examines the influence of distribution channel structure on broader market performance indicators including market share, customer satisfaction, and operational efficiency.
Objective 2: Retail Accessibility				
Shupler et al. (2021)	Access barriers to LPG use in Sub-Saharan Africa	Geographic inaccessibility and retail gaps reduce LPG uptake.	Methodological gap: The study focused on consumer adoption and access barriers without examining firm-level market performance outcomes.	Examines how retail accessibility strategies influence market performance among licensed LPG firms.
Chege (2013)	LPG safety and accessibility in Kenya	Mobile retail services enhance competitive advantage in underserved areas.	Conceptual gap: The study focused primarily on safety and accessibility concerns and did not assess accessibility as a strategic distribution capability affecting market performance.	Examines retail accessibility as a strategic dimension influencing market performance indicators.
Rao et al. (2020)	Consumer behavior and LPG access in India	Accessibility and price transparency linked to consumer trust.	Contextual gap: The study was conducted in India where regulatory structures and market conditions differ from Kenya's LPG environment. Methodological gap: The study adopted a consumer perspective	Examines firm-led accessibility strategies among licensed LPG brand owners in Kenya.

			rather than a firm perspective.	
Objective 3: Pricing Strategy				
Nzioki (2023)	Effect of price control on oil marketing firms	Price controls reduce return on assets under regulated regimes.	Conceptual gap: The study focused on price controls and did not examine broader strategic pricing dimensions affecting competitiveness and customer outcomes.	Examines pricing strategy in relation to market performance indicators among licensed LPG firms.
William & Joyce (2020)	Pricing and segmentation strategies in Kenyan oil firms	Differentiated pricing improves competitive positioning.	Contextual gap: The study examined general oil firms and did not focus specifically on LPG firms operating within a regulated LPG environment.	Examines pricing strategy among licensed LPG brand owners operating in Kenya's LPG market.
George (2022)	Impact of price distortion in energy markets	Predatory pricing undermines legal firms' competitiveness.	Methodological gap: The study examined market distortions without evaluating their relationship with broader performance outcomes among licensed firms.	Examines the relationship between pricing strategy and market performance outcomes among licensed LPG firms.
Objective 4: Distribution Compliance				
Oluwasanmi & Ogunro (2021)	Ethical marketing in Nigeria's petroleum sector	Compliance and ethical branding improve consumer trust.	Conceptual gap: The study examined ethical practices but did not assess compliance as a strategic distribution capability influencing market performance.	Examines distribution compliance and its influence on market performance indicators.
EPRA (2024); PIEA (2024)	Regulatory reports on LPG compliance and violations	Non-compliance linked to illegal refilling and consumer mistrust.	Methodological gap: The reports describe industry challenges without empirically assessing relationships between compliance practices and performance outcomes.	Provides empirical evidence on how compliance influences market performance outcomes among LPG firms.

Ishaya & Daniel (2024)	Gray markets and compliance in Nigeria	Strong compliance linked to resilience in unfair environments.	Methodological gap: The study did not quantify market performance outcomes such as market share, customer satisfaction, and operational efficiency.	Examines how distribution compliance influences measurable market performance outcomes among licensed LPG firms.

Source: Researcher (2026)

2.5 Conceptual Framework

This study was anchored on a conceptual framework that outlines the relationship between key dimensions of retail distribution strategy, namely distribution channel structure, retail accessibility, pricing strategy, and distribution compliance, and the market performance of licensed LPG companies in Nairobi County. These variables capture both structural and behavioral aspects of how LPG firms engage the market.

Distribution channel structure refers to the design and control of sales networks, which influence brand positioning, service consistency, and cost efficiency (Mwangi & Muli, 2017). Retail accessibility describe how easily consumers can obtain LPG products, particularly in underserved or high-risk areas (Shupler et al., 2021). Pricing strategy relate to strategic pricing models, promotional campaigns, and consumer engagement strategies that shape competitive positioning (Mungai & Wanyoike, 2015). Distribution compliance ensures safe, fair, and lawful operations, which foster trust and brand resilience (Chege, 2013; Oluwasanmi & Ogunro, 2021).

The dependent variable, market performance, is measured by profitability, customer retention, market share, and service quality. These indicators reflect how well LPG companies navigate regulatory challenges, competition, and operational constraints. The framework posited that stronger alignment and execution of retail distribution strategies positively influence firm performance in the formal LPG market. The conceptual framework diagram below illustrates these relationships.

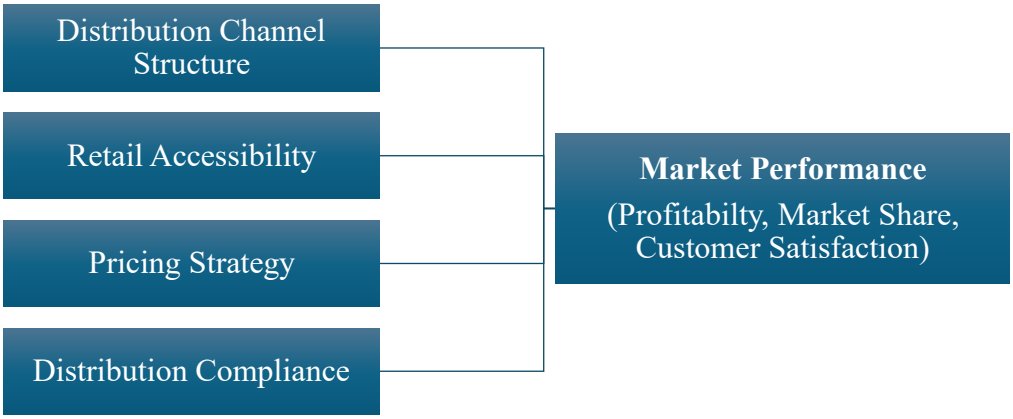


Figure 0.1 Conceptual Framework

Source: Researcher (2026)

Table 0.2 Operationalization of Variables

Variable	Definition	Indicators (Measures)	Scale of Measurement	Supporting Literature	Supporting Theory
Distribution Channel Structure	The organizational design of how LPG products move from suppliers to end consumers.	Channel type (exclusive/open), control level, inventory systems	Ordinal (5-point Likert scale)	Mwangi & Muli (2017)	Resource-Based View
Retail Accessibility	The geographic and physical availability of LPG products to customers.	Outlet density, mobile delivery, coverage in low-income zones	Ordinal (5-point Likert scale)	Chege (2013); Shupler et al. (2021)	Dynamic Capability Theory
Pricing Strategy	Strategic pricing and brand communication efforts aimed at market competitiveness.	Price competitiveness, loyalty programs, customer awareness campaigns	Ordinal (5-point Likert scale)	Mungai & Wanyoike (2015)	Resource-Based View
Distribution Compliance	Adherence to statutory, safety, and ethical	Use of licensed dealers, branded equipment,	Ordinal (5-point Likert scale)	EPRA (2024); Oluwasanm	Dynamic Capability Theory

	standards in retail operations.	safety compliance		i & Ogunro (2021)	
Market Performance	Outcomes that reflect how well a company performs in the market.	Market share, profitability, customer satisfaction	Ordinal (5-point Likert scale)	Malik (2021); Mutinda et al. (2022)	RBV & DCT

Source: Researcher (2026)

2.6 Chapter Summary

This chapter reviewed the theoretical and empirical literature relevant to the study on retail distribution strategies and market performance among licensed LPG brand owners in Nairobi County. The chapter discussed the Resource-Based View and Dynamic Capability Theory as the theoretical foundations underpinning the study and established their relevance to the selected study variables. Empirical literature was reviewed based on the study objectives, specifically distribution channel structure, retail accessibility, pricing strategy, and distribution compliance, highlighting key findings, contextual differences, and methodological limitations in previous studies. The chapter further identified conceptual, methodological, and contextual gaps that justified the need for the current study. Finally, a conceptual framework illustrating the relationship between the independent and dependent variables was presented to guide the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology used to investigate the relationship between retail distribution strategies and market performance among licensed Liquefied Petroleum Gas (LPG) companies in Nairobi County, Kenya. It details the research philosophy, design, target population, sampling procedures, data collection instruments, reliability and validity, methods of data analysis, and ethical considerations. The aim is to ensure a rigorous, valid, and ethically sound process that supports the research objectives and contributes to meaningful findings.

3.2 Research Philosophy

Research philosophy refers to the set of beliefs regarding the nature of reality, knowledge, and the methods used to acquire it. Common philosophical paradigms include positivism, interpretivism, pragmatism, and realism. Interpretivism emphasizes subjective interpretations of human experiences and acknowledges multiple realities shaped by context, making it suitable for qualitative studies but potentially limiting its generalizability and objectivity. Pragmatism combines multiple approaches based on research objectives, offering flexibility but sometimes resulting in methodological ambiguity. Realism recognizes objective realities independent of human perception, useful for exploring mechanisms and underlying structures but complex in establishing direct causality.

This study adopted a positivist research philosophy, which is grounded in the belief that reality is objective and measurable through empirical observation. Positivism supports the use of quantitative data collection and statistical analysis to determine patterns, relationships, and generalizable conclusions (Saunders et al., 2019). Given the study's aim to evaluate the relationship between retail distribution strategies specifically distribution channel structure, retail accessibility, pricing strategy, and distribution compliance and market performance, a positivist approach was most appropriate. Positivism may overlook deeper contextual insights due to its emphasis on numerical and quantifiable data. Nonetheless, given the quantitative nature and the need for

objective, statistical relationships in this study, positivism provided the most appropriate philosophical foundation.

3.3 Research Design

Research design is the strategic framework guiding the collection, analysis, and interpretation of data. Common research designs include experimental, longitudinal, cross-sectional, and case study designs. Experimental designs involve controlled manipulation of variables, allowing strong causal inferences; however, they require significant control and can be resource intensive. Longitudinal studies observe the same subjects over extended periods, enabling the tracking of changes and trends, but they demand considerable time and financial investment. Case study designs provide detailed explorations of individual cases or small groups, offering in-depth insights but limiting the generalizability of findings.

This study employed a descriptive cross-sectional research design, which involves collecting quantitative data at a single point in time to characterize the population and explore relationships among variables. This approach offers the advantage of efficiency, timeliness, and ease of implementation, making it highly suitable for capturing a snapshot of existing market conditions and strategies. However, its limitation lies in its inability to track changes over time or establish direct causal relationships. Given the study's objective to explore correlations between retail strategy dimensions (such as distribution channel structure, retail accessibility, pricing strategy and distribution compliance) and market performance indicators, a cross-sectional design provided an optimal balance between efficiency and effectiveness (Kothari, 2014).

Although the descriptive cross-sectional design enabled examination of relationships among study variables at a single point in time, it did not establish causal relationships. Rather, the design was considered appropriate for identifying patterns, associations, and perceptions relating to retail distribution strategies and market performance among licensed LPG firms.

3.4 Target Population

Target population refers to the complete set of individuals or entities possessing characteristics relevant to a study. This study targeted staff directly involved in strategic and operational distribution activities among licensed LPG brand owners operating in Nairobi County.

Specifically, the study focused on the 77 licensed LPG brand owners (oil marketing companies) registered and licensed by the Energy and Petroleum Regulatory Authority (EPRA) and actively involved in LPG distribution activities. The unit of observation comprised managerial personnel directly involved in retail distribution decision-making, including Distribution Managers, Operations Managers, Commercial Managers, Marketing Managers, Safety and Compliance Officers, and Retail Territory Managers.

3.5 Sampling Design and Sample Size

Sampling methods typically include probability sampling techniques such as simple random, stratified, and systematic sampling designed to enhance representativeness of study findings. Non-probability approaches such as purposive and convenience sampling may also be used where probability sampling is impractical. However, where the population size is relatively small and manageable, a census approach is considered appropriate because it allows inclusion of all study units and enhances comprehensiveness of data collection.

The unit of analysis for this study was the 77 licensed LPG brand owner firms operating in Nairobi County, as these firms constituted the entities through which retail distribution strategies and market performance were examined. The firms were identified from records of the Energy and Petroleum Regulatory Authority (EPRA, 2024). Since the number of licensed LPG firms was manageable, a census sampling design was adopted, whereby all 77 licensed LPG firms were included in the study.

The unit of observation comprised managerial personnel directly involved in strategic and operational distribution activities within the selected firms. Specifically, respondents were drawn from managerial roles responsible for retail distribution decisions, including Distribution Managers, Commercial/Marketing Managers, and Safety/Compliance Managers. These respondents were selected because of their direct involvement in activities relating to distribution channel structure, retail accessibility, pricing strategy, distribution compliance, and market performance.

To obtain diverse and complementary perspectives from each organization, three respondents were selected from each firm, namely:

- Distribution Manager
- Commercial/Marketing Manager
- Safety/Compliance Manager

The target respondents were therefore calculated as follows:

- Number of licensed LPG firms: 77
- Respondents per firm: 3

Total respondents: 77 firms × 3 respondents = 231 respondents

The use of multiple respondents within each firm was intended to obtain information from different functional perspectives while reducing dependence on a single respondent. This approach enhanced the comprehensiveness and reliability of the data collected by capturing strategic, operational, and compliance-related insights from the selected organizations. Furthermore, inclusion of all 77 firms minimized sampling error and enhanced representativeness of the study findings within the formal LPG sector in Nairobi County.

3.6 Data Collection

This study utilized structured questionnaires to collect primary quantitative data from managerial personnel of licensed LPG brand owner firms in Nairobi County. The questionnaire consisted of close-ended questions measured using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The use of structured questionnaires facilitated standardized data collection and enabled quantitative analysis of responses.

The instrument was organized into six sections comprising demographic information, distribution channel structure, retail accessibility, pricing strategy, distribution compliance, and market performance. Questionnaire items were developed from established theories and previous empirical studies to ensure alignment with the study constructs and objectives.

The use of multiple managerial respondents within the same organization was intended to capture complementary perspectives from strategic, commercial, and compliance functions. Responses obtained from different managerial roles were analyzed collectively because the respondents

represented organizational perspectives relating to the same firm-level constructs under investigation. The use of respondents from different functional areas reduced dependence on a single respondent and minimized the likelihood of individual respondent bias.

Since the unit of analysis for this study was the licensed LPG brand owner firm and the unit of observation comprised managerial respondents from different functional areas, responses from multiple respondents within the same organization were treated as complementary organizational perspectives rather than independent organizational units. The use of Distribution Managers, Commercial/Marketing Managers, and Safety/Compliance Managers enabled the study to capture strategic, operational, and compliance-related insights relating to the same firm-level constructs. Multiple respondents from each firm were utilized to minimize single-respondent bias and enhance comprehensiveness of the information obtained. Given that the study adopted a descriptive cross-sectional design and utilized standardized questionnaire items measuring common organizational constructs, consistency across responses was supported through the use of uniform measurement scales and reliability assessment procedures.

Data collection commenced after obtaining approval from the Strathmore University Institutional Scientific and Ethical Review Committee (SU-ISERC) and research authorization from NACOSTI. Introductory letters requesting participation were issued to the selected licensed LPG firms to seek organizational permission and facilitate access to respondents.

The study employed both physical and electronic questionnaire administration approaches depending on respondent accessibility and organizational preference. For respondents within accessible organizations, the researcher used a drop-and-pick-later approach, where questionnaires were physically delivered and collected after an agreed period to allow respondents adequate time to complete them. For respondents who were geographically dispersed or preferred digital communication, questionnaires were administered electronically via email.

Follow-up phone calls and reminder messages were used to encourage participation and improve response rates. Completed questionnaires were reviewed for completeness and consistency before coding and entry into the data analysis software. To minimize potential common method bias associated with self-reported measures, respondents were assured of confidentiality and

anonymity, and questionnaire items were arranged logically with clear instructions to reduce response pattern tendencies.

3.6.1 Common Method Bias

Because the study relied on a single self-report instrument to measure both the independent and dependent variables, common method bias represents a potential threat to the validity of the relationships observed (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; MacKenzie & Podsakoff, 2012). To mitigate this risk, several procedural remedies were applied during questionnaire design and administration. First, respondent anonymity and confidentiality were assured to reduce social-desirability bias and acquiescence tendencies. Second, items measuring different constructs were placed in separate sections of the questionnaire rather than being interleaved, reducing the risk that respondents would respond to items in a consistent pattern shaped by the immediately preceding items. Third, multiple managerial roles (distribution, commercial/marketing, and compliance/safety) were surveyed within each firm so that responses on different functional areas were captured by respondents with different functional perspectives, reducing the risk that a single respondent's consistent response style would shape the firm-level scores. Despite these procedural remedies, the possibility of residual common method bias cannot be entirely eliminated in a single-instrument cross-sectional design, and this is acknowledged as a methodological limitation of the study (Section 5.5).

3.6.2 Aggregation Across Multiple Respondents

The study collected responses from three managerial roles per firm; Distribution Manager, Commercial/Marketing Manager, and Compliance/Safety Manager, in order to capture functional triangulation across the strategic domains examined. Because the unit of analysis is the firm, responses from the three roles were aggregated to the firm level for the inferential analysis. Specifically, composite scores for each construct were computed as the mean of all responses from each respondent, and firm-level scores were derived by averaging across the multiple respondents within each firm. The use of multiple respondents per firm provides a degree of methodological triangulation that single-respondent designs cannot, reducing dependence on any individual respondent's perceptions. The study acknowledges that formal intra-firm agreement statistics (such

as the rwg index) were not computed; this is identified as an area for methodological refinement in future research (Section 5.6).

3.7 Data Analysis

Data analysis involves systematically summarizing and interpreting data collected from respondents to answer research questions. Two primary approaches, descriptive and inferential statistics, were applied, which was done using statistical package for social sciences (SPSS). Descriptive statistics provided preliminary summaries, including means, frequencies, percentages, and standard deviations. These statistics offered a clear overview of demographic characteristics, distribution strategy variables, and market performance outcomes, facilitating initial data understanding.

Inferential statistics used correlations and multiple linear regression analysis to examine relationships between the independent variables (distribution channel structure, retail accessibility, pricing strategy, compliance with regulatory standards) and the dependent variable (market performance). Multiple linear regression was used because the variables were measured using a composite average score of Likert scale items. Although the items were in Likert scale responses, the final measures of variables were continuous because a composite score was calculated using the means of items in a variable such that a higher score indicated a higher presence of the variable and vice versa. The conditions for interpreting the results included statistical significance (p-value ≤ 0.05). Regression coefficients indicated the direction and strength of associations between variables, providing insights into variables associated with market performance.

3.8 Research Quality

Ensuring research quality involves procedures for piloting, validity, and reliability testing:

3.8.1 Piloting

Piloting ensures the questionnaire's clarity, appropriateness, and effectiveness. A pilot study involving 10 respondents from non-participating firms tested for question comprehensibility, flow, and timing. The feedback from the pilot study informed necessary revisions to enhance clarity and accuracy.

3.8.2 Validity

Validity confirms that the instrument measures what it intends to measure. Content and construct validity were assessed through expert reviews from university faculty specializing in strategic management and marketing, who evaluated whether questionnaire items comprehensively to determine if they represented the theoretical constructs. Construct validity was strengthened by grounding questionnaire items in established theory and empirical studies.

3.8.3 Reliability:

Reliability assesses the consistency of the questionnaire responses. Internal consistency was evaluated using Cronbach's Alpha, with a threshold of $\alpha \geq 0.7$ considered acceptable (Tavakol & Dennick, 2011). Items failing this criterion were revised to ensure accurate and consistent measurement across respondents. Table 3.1 shows the reliability statistics.

Table 3.1: Reliability Statistics

Variable	Cronbach's Alpha Coefficient	Number of Items	Interpretation
Distribution Channel Structure	0.946	5	Reliable
Retail Accessibility	0.913	5	Reliable
Pricing Strategy	0.935	5	Reliable
Distribution Compliance	0.911	5	Reliable
Market Performance	0.895	5	Reliable

Source: Researcher (2026)

Variables in the study recorded alpha coefficients above the recommended threshold, indicating acceptable reliability. Although high reliability coefficients suggest strong internal consistency among measurement items, exceptionally high values may occasionally indicate similarities or overlap among items measuring the same construct. However, questionnaire items were developed from established theoretical and empirical literature and were designed to capture different dimensions of each construct while maintaining conceptual consistency.

3.9 Ethical Considerations

This study adhered to ethical research standards by obtaining approval from the Strathmore University Institutional Ethics Review Committee (SU-ISERC) and the National Commission for

Science, Technology and Innovation (NACOSTI). Participation was voluntary, with informed consent sought from all respondents. No personally identifiable information was collected, and confidentiality and anonymity were strictly maintained. The data was used exclusively for academic purposes.

3.10 Chapter Summary

This chapter presented the research methodology adopted for the study. The chapter discussed the positivist research philosophy and descriptive cross-sectional research design that guided the study. It further described the target population, sampling design, unit of analysis, and unit of observation used in the study. The chapter also outlined the data collection instruments and procedures, including questionnaire administration approaches, and explained the methods used for data analysis and presentation. In addition, measures undertaken to ensure research quality through piloting, validity, and reliability assessment were discussed together with ethical considerations adopted during the study. Collectively, the methodological procedures described in this chapter provided a framework for generating reliable and credible findings for the study.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results and findings of the study on the effect of retail distribution strategies on the market performance of licensed LPG companies in Nairobi County. The chapter begins with an analysis of the response rate, followed by a presentation of the respondents' demographic characteristics to provide context for the data collected. It then presents descriptive statistics that summarizes the key study variables, including distribution channel structure, retail accessibility, pricing strategy, distribution compliance, and market performance. Finally, inferential statistical analysis is conducted using correlations, and simple and multiple regression analyses to examine the relationships between retail distribution strategies and market performance, in line with the study objectives.

4.2 Response Rate

Questionnaires were distributed to 230 respondents from 77 LPGs in Nairobi. However, 202 questionnaires were collected after a duration of three months. This represents a response rate of 88 percent, which according to Saunders et al. (2019), is sufficient to continue with analysis since the minimum threshold for getting generalizable findings in survey research is 60 percent. Details of the response rate are provided in Table 4.1.

Table 4.1: Response Rate

Category	Frequency	Percentage
Questionnaires sent	230	88%
Questionnaires completed	202	12%
Questionnaires not returned	28	100%

Source: Researcher (2026)

4.3 Respondents' Demographic Data

The demographic characteristics of the respondents indicate that the study drew insights from an experienced managerial cohort within the LPG sector. In terms of age distribution, the largest proportion of respondents were aged between 41 and 50 years, who accounted for 43% (n = 86)

of the respondents, followed by those aged 31-40 years at 29% (n = 59). Respondents aged 51 years and above constituted 20% (n = 41) and those under 30 years formed the smallest group at 8% (n = 16). This age profile suggests that the respondents were predominantly mid- to senior-career professionals, which enhances the credibility of the collected data.

With respect to experience in the LPG industry, the findings showed that a majority of respondents had substantial sectoral exposure. Those with 5-10 years of experience comprised 35% (n = 70), which was followed by respondents with 11–15 years at 30% (n = 61). Participants with more than 15 years of industry experience accounted for 19% (n = 38) while those with less than five years represented 16% (n = 33). This distribution indicates that most respondents possessed adequate industry knowledge to provide informed insights into retail distribution practices within their firms.

The analysis of respondents' current managerial positions revealed strong representation from roles directly involved in distribution and market performance. In this regard, distribution Managers formed the largest category at 43% (n = 87). Marketing Managers accounted for 14% (n = 29), Commercial Managers 13% (n = 26), and Compliance Managers 13% (n = 27). Operations Managers represented 9% (n = 18) and General Managers constituted 7% (n = 15). This balanced mix of strategic and operational roles suggests that robust views were collected in this study in terms of distribution practices and market performance.

In terms of company size, respondents were drawn from organizations of varying scales. Large companies accounted for 40% (n = 81) of the respondents, followed by medium-sized firms at 34% (n = 69) and small firms at 26% (n = 52). This distribution ensures that the findings reflect experiences across different organizational capacities within the licensed LPG sector.

Finally, the results on tenure in the current managerial role indicate reasonable role stability among respondents. The majority had served in their current positions for 2-5 years, who represented 41% (n = 82) of the sample. Those with less than two years of tenure accounted for 23% (n = 46) and a similar proportion of 23% (n = 46) had served for 6–10 years. Respondents with more than 10 years in their current role comprised 14% (n = 28). Overall, the tenure distribution suggests that respondents had sufficient role-specific experience to provide relevant responses with respect to the objectives of this study. These findings are shown in Table 4.2.

Table 4.2: Demographic Characteristics of Respondents

		Frequency	Percent
Age Bracket	Under 30	16	8%
	31-40	59	29%
	41-50	86	43%
	51 and above	41	20%
	Total	202	100%
Experience in the LPG Industry	Less than 5 years	33	16%
	5-10 years	70	35%
	11-15 years	61	30%
	More than 15 years	38	19%
	Total	202	100%
Current Managerial Position	General Manager	15	7%
	Operations Manager	18	9%
	Commercial Manager	26	13%
	Marketing Manager	29	14%
	Compliance Manager	27	13%
	Distribution Manager	87	43%
	Total	202	100%
Size of the Company	Small	52	26%
	Medium	69	34%
	Large	81	40%
	Total	202	100%
Years in the Current Managerial Role	Less than 2 years	46	23%
	2–5 years	82	41%
	6–10 years	46	23%
	More than 10 years	28	14%
	Total	202	100%

Source: Researcher (2026)

4.4 Descriptive Statistics

This section presents the descriptive statistics for the variables, which included distribution channel structure, retail accessibility, pricing strategy, distribution compliance, and market performance. For purposes of interpretation, mean scores derived from the five-point Likert scale were categorized using predefined intervals. Mean scores ranging from 4.51 to 5.00 were interpreted as Strongly Agree, 3.51 to 4.50 as Agree, 2.51 to 3.50 as Neutral, 1.51 to 2.50 as Disagree, and 1.00 to 1.50 as Strongly Disagree (Lindner & Lindner, 2023).

4.4.1 Distribution Channel Structure and Market Performance of Licensed LPG Brand Owners in Nairobi County

The first objective of this study was to determine the effect of distribution channel structure on the market performance of LPG companies in Nairobi County. Distribution channel structure was measured using five items on a five-point Likert scale, and a composite score was computed using the mean value. Higher scores indicated a higher level of formal configuration and coordination in the movement of LPG products from firms to consumers, while lower scores reflected weaker or less structured distribution arrangements.

At the item level, the statement "The use of company-owned retail outlets has improved brand consistency and trust" recorded the highest mean score of 3.42 (SD = 0.99). Based on the Likert scale interpretation framework, this score falls within the neutral range, indicating that respondents neither clearly agreed nor disagreed that company-owned outlets enhance brand consistency and trust. However, being the highest-rated item suggests that respondents moderately perceive direct ownership of retail channels as contributing positively to customer trust and brand image. This finding implies that greater control over retail outlets may strengthen service quality and consistency, thereby improving market competitiveness among LPG firms.

Similarly, the statement "Exclusive dealership arrangements contribute positively to customer satisfaction" posted a mean score of 3.41 (SD = 1.10), which also reflects a neutral perception regarding the effectiveness of exclusive dealership arrangements in improving customer satisfaction. This suggests that while dealership arrangements may provide benefits through stronger coordination and market control, their contribution to customer satisfaction may not yet be strongly evident across all firms.

The statement "Our distribution channels effectively reach all target market segments" recorded a mean score of 3.38 (SD = 1.30), suggesting a neutral assessment of market reach. The relatively higher standard deviation indicates considerable variation in respondents' experiences, implying that the effectiveness of market coverage differs across firms, possibly due to differences in geographic presence, scale of operations, or resource endowment. The findings further suggest that some firms may have established wider and more efficient distribution networks while others continue to face market reach limitations.

Likewise, the item “Our hybrid distribution model effectively balances cost efficiency and customer service” had a mean score of 3.30 (SD = 1.14), further reinforcing a neutral stance on the perceived benefits of combining multiple distribution channel types. This finding suggests that although hybrid channel systems may potentially improve operational flexibility, respondents did not strongly perceive them as generating substantial efficiency or customer service advantages.

The lowest mean score was observed for the statement “Third-party retailers maintain high standards of product handling and safety” at 3.27 (SD = 1.15). Although still within the neutral range, this comparatively lower mean suggests weaker confidence in third-party retail arrangements, pointing to concerns related to quality control, safety compliance, and regulatory adherence. The dispersion in responses further indicates uneven levels of oversight and enforcement across firms. These findings imply that dependence on external distribution partners may expose firms to inconsistencies in service standards and operational risks.

As shown in Table 4.3, the composite mean score for distribution channel structure was 3.36 (SD = 1.03), which falls within the neutral category. This finding suggests that although licensed LPG firms have established distribution channel arrangements, respondents did not strongly perceive these structures as sufficiently coordinated or effective in supporting market outcomes. The moderate score further implies that firms may still face challenges in optimizing distribution systems, particularly with regard to channel integration, market reach, and oversight of indirect channels. The relatively high variability in responses indicates differences in channel management practices across firms, suggesting that some organizations have more developed distribution systems than others. These findings imply that improvements in channel coordination, monitoring mechanisms, and quality control practices may strengthen market performance outcomes among licensed LPG firms.

Table 4.3: Descriptive Statistics for Distribution Channel Structure

	N	Mean	Standard Deviation
Our distribution channels effectively reach all target market segments	202	3.38	1.299
The use of company-owned retail outlets has improved brand consistency and trust.	202	3.42	.990
Exclusive dealership arrangements contribute positively to customer satisfaction	202	3.41	1.099

Third-party retailers maintain high standards of product handling and safety	202	3.27	1.146
Our hybrid distribution model (combination of channels) effectively balances cost efficiency and customer service.	202	3.30	1.139
Distribution Channel Structure Composite Score	202	3.3554	1.03270

Source: Researcher (2026)

4.4.2 Retail Accessibility and Market Performance of Licensed LPG Brand Owners in Nairobi County

The second objective of this study was to determine the effect of retail accessibility on the market performance of LPG companies in Nairobi County. Retail accessibility was measured using five items on a five-point Likert scale, and a composite score was computed using the mean value. Higher scores indicated greater availability and convenience of retail outlets, while lower scores reflected limited coverage and accessibility. As presented in Table 4.4, the mean scores for the individual items ranged from 3.16 to 3.44, which, based on the Likert scale interpretation framework, fall within the neutral category. This suggests that respondents neither clearly agreed nor disagreed regarding the adequacy and effectiveness of their firms' retail accessibility strategies.

The highest mean score was recorded for the statement "Customers can easily access our LPG products through conveniently located retail points" at 3.44 (SD = 1.00). Although this score approaches the upper bound of the neutral range, it still indicates an overall neutral perception, implying that accessibility is present but not sufficiently strong to elicit clear agreement among respondents. However, being the highest-rated item suggests that respondents moderately perceive location convenience as an important aspect in enhancing customer access and improving market presence. This finding implies that strategically located retail outlets may contribute positively toward customer convenience and strengthen market competitiveness among licensed LPG firms.

Similarly, the statement "Expansion into underserved areas has notably increased our market share" recorded a mean score of 3.28 (SD = 1.11), reflecting a neutral assessment of the impact of market expansion efforts. The findings suggest that although expansion initiatives may create opportunities for reaching new customers, respondents did not strongly perceive these initiatives as translating into substantial market growth. This may imply that expansion alone may not be sufficient unless accompanied by effective supporting strategies such as reliable product availability and enhanced customer engagement.

The item “Our distribution network effectively ensures product availability and refill convenience” also posted a mean score of 3.28 (SD = 1.24), indicating a neutral perception regarding the reliability of distribution networks. The relatively high standard deviation points to differences in firms’ operational capacities, particularly in maintaining consistent product availability across different locations. This finding further suggests that while some firms may possess efficient distribution systems capable of ensuring timely refills and product availability, others may experience operational challenges that limit service consistency.

Likewise, “Our company has sufficient retail outlets to cover key urban and peri-urban markets” had a mean score of 3.22 (SD = 0.96), suggesting that respondents were undecided on whether existing outlet coverage adequately meets market demand. This may imply that some firms have not yet achieved optimal market penetration, particularly within rapidly growing or underserved areas where demand for LPG products continues to increase.

The lowest mean score was observed for “Mobile and digital LPG ordering significantly improves our market reach” at 3.16 (SD = 0.96), indicating neutral but comparatively weaker perceptions regarding the effectiveness of digital distribution innovations. This finding suggests that mobile and digital ordering platforms are either underdeveloped or not widely adopted among licensed LPG firms. It may further imply that firms have not fully leveraged technological innovations that could improve customer convenience and enhance market reach.

Overall, the composite mean score for retail accessibility was 3.28 (SD = 0.91), indicating moderate perceptions regarding the adequacy of accessibility strategies among licensed LPG firms. The findings suggest that although firms have made efforts to improve retail accessibility through outlet networks and market expansion initiatives, respondents did not strongly affirm that these efforts adequately meet market needs. This may indicate existing limitations in retail coverage, convenience, product availability, and adoption of digital distribution solutions. The findings further imply that accessibility challenges may affect firms’ ability to expand customer reach and strengthen market competitiveness, particularly within underserved and peri-urban markets. Table 4.4 presents the descriptive statistics for retail accessibility.

Table 4.4: Descriptive Statistics for Retail Accessibility

	N	Mean	Standard Deviation
Our company has sufficient retail outlets to cover key urban and peri-urban markets.	202	3.22	.959
Customers can easily access our LPG products through conveniently located retail points	202	3.44	1.002
Mobile and digital LPG ordering significantly improves our market reach	202	3.16	.964
Expansion into underserved areas has notably increased our market share.	202	3.28	1.108
Our distribution network effectively ensures product availability and refill convenience	202	3.28	1.240
Retail Coverage and Accessibility Composite Score	202	3.2762	.91245

Source: Researcher (2026)

4.4.3 Pricing Strategy and Market Performance of Licensed LPG Brand Owners in Nairobi County

The third objective of this research was to determine the effect of pricing strategy on the market performance of LPG companies in Nairobi County. Pricing strategy was measured using five items on a five-point Likert scale, and a composite score was computed using the mean value, where higher scores indicated the presence of competitive pricing and active promotional strategies, while lower scores reflected weak pricing and promotional practices. As presented in Table 4.5, the mean scores for the individual items ranged from 3.19 to 3.31, which, according to the Likert scale interpretation framework, fall within the neutral category. This indicates that respondents neither clearly agreed nor disagreed regarding the effectiveness of their firms' pricing and promotional practices.

The statement "Our promotional efforts clearly differentiate our brand from competitors" recorded the highest mean score of 3.31 (SD = 1.05). Although this score is at the upper end of the neutral range, it suggests that respondents were generally undecided regarding the extent to which promotional efforts create clear brand differentiation in the LPG market. However, being the highest-rated item suggests that respondents moderately perceive promotional activities as contributing toward improving brand visibility and competitive positioning. This finding implies that effective promotional initiatives may enhance customer awareness and strengthen firms' market identity within a highly competitive environment.

Similarly, the statements “Our pricing strategies enable us to compete effectively with informal market operators” and “Customers perceive our promotional messages clearly regarding product safety and quality” both recorded mean scores of 3.30 (SD = 1.03 and SD = 1.02, respectively), indicating neutral perceptions regarding the competitiveness of pricing strategies and the clarity of promotional messaging. These findings suggest that although firms have implemented pricing and communication mechanisms, respondents did not strongly perceive them as sufficiently effective in differentiating firms from informal competitors or strengthening customer confidence.

The item “Our pricing strategies effectively balance affordability and profitability” had a mean score of 3.28 (SD = 1.21), reflecting a neutral assessment of firms’ ability to reconcile consumer affordability with business sustainability. The relatively high standard deviation suggests notable differences across firms in achieving this balance. This may imply that while some firms successfully align pricing objectives with customer affordability and profitability goals, others continue to experience challenges due to varying market conditions and competitive pressures.

The lowest mean score was recorded for “Strategic promotional activities have increased our customer base” at 3.19 (SD = 1.17), indicating comparatively weaker neutral perceptions regarding the direct impact of promotional activities on customer growth. This finding may suggest limitations in the reach, consistency, or effectiveness of promotional initiatives within the sector. It further implies that existing promotional approaches may not be sufficiently strong to attract and retain customers within an increasingly competitive LPG market.

Overall, the composite mean score for pricing strategy was 3.27 (SD = 0.98), indicating moderate perceptions regarding the effectiveness of pricing approaches among licensed LPG firms. These findings suggest that although pricing mechanisms exist within firms, respondents did not strongly perceive them as sufficiently differentiated or competitive in generating stronger market outcomes. The moderate findings may reflect challenges associated with balancing affordability, competitiveness, and profitability within a market characterized by informal competition and price sensitivity. The findings imply that firms may require more innovative and responsive pricing approaches to strengthen competitiveness and improve market performance outcomes. Table 4.5 presents the descriptive statistics for pricing strategy.

Table 4.5: Descriptive Statistics for Pricing Strategy

	N	Mean	Standard Deviation
Our pricing strategies effectively balance affordability and profitability	202	3.28	1.214
Strategic promotional activities (advertising, discounts, loyalty programs) have increased our customer base.	202	3.19	1.169
Our pricing strategies enable us to compete effectively with informal market operators.	202	3.30	1.032
Customers perceive our promotional messages clearly regarding product safety and quality	202	3.30	1.023
Our promotional efforts clearly differentiate our brand from competitors	202	3.31	1.053
Pricing and Promotion Practices Composite Score	202	3.2733	.98050

Source: Researcher (2026)

4.4.4 Distribution Compliance and Market Performance of Licensed LPG Brand Owners in Nairobi County

The fourth objective of this study was to determine the effect of distribution compliance on the market performance of LPG companies in Nairobi County. Distribution compliance was measured using five items on a five-point Likert scale. A composite score was computed using the mean value, such that higher scores indicated stronger adherence to legal, safety, and ethical guidelines, while lower scores reflected weaker compliance. The mean scores for the individual items ranged from 3.30 to 3.44, which, based on the Likert scale interpretation framework, fall within the neutral category. This suggests that respondents neither clearly agreed nor disagreed regarding the extent to which compliance practices are fully integrated into their firms' distribution strategies.

The statement "Strict compliance with LPG safety standards is integral to our distribution strategy" recorded the highest mean score of 3.44 (SD = 1.09). Although this score is at the upper end of the neutral range, it indicates that respondents were generally undecided regarding the centrality of safety compliance within their distribution operations. However, being the highest-rated item suggests that respondents moderately perceive safety standards as an important component of distribution practices. This finding implies that although firms recognize the importance of safety compliance in the LPG sector, its implementation and prioritization may vary across organizations despite the high-risk nature of LPG handling and distribution.

Similarly, the item “Compliance with regulatory guidelines significantly enhances our brand reputation” recorded a mean score of 3.37 (SD = 1.29), suggesting neutral perceptions regarding the reputational benefits associated with regulatory adherence. The relatively high variability in responses suggests differences across firms in the extent to which compliance initiatives translate into reputational advantages. This may imply that while some firms successfully utilize compliance as a strategic tool for strengthening brand image and customer confidence, others may not yet have realized these benefits.

The statements “Our company regularly audits distributors for adherence to ethical standards” and “Ethical marketing practices positively influence customer loyalty and trust” both recorded mean scores of 3.34 (SD = 1.19 and SD = 1.14, respectively). These results indicate that respondents were generally neutral regarding the consistency of ethical oversight and the extent to which ethical conduct translates into customer trust. The relatively high variability in responses points to differences across firms in the implementation and enforcement of ethical practices. The findings further suggest that although firms recognize the value of ethical practices, such practices may not yet be consistently institutionalized across all organizations.

The lowest mean score was observed for “Regulatory compliance reduces operational risks and improves overall firm performance” at 3.30 (SD = 1.26), indicating comparatively weaker perceptions regarding the direct operational benefits of compliance. The relatively high standard deviation further suggests variations in organizational experiences and perceptions. This finding may imply that some firms perceive compliance primarily as a regulatory obligation rather than a strategic mechanism capable of improving operational efficiency and performance outcomes. It may also reflect short-term cost pressures associated with compliance implementation or differences in regulatory enforcement within the sector.

Overall, the composite mean score for distribution compliance was 3.35 (SD = 1.03), suggesting moderate perceptions regarding the implementation of compliance practices among licensed LPG firms. The findings indicate that while regulatory and safety requirements are recognized by firms, respondents did not strongly affirm that such practices are consistently embedded within distribution operations. This may imply differences in the degree of compliance implementation across organizations. The findings further suggest that stronger institutionalization of compliance practices could enhance operational credibility, reduce risk exposure, strengthen customer trust,

and ultimately improve market performance outcomes within the LPG sector. These results are presented in Table 4.6.

Table 4.6: Descriptive Statistics for Distribution Compliance

	N	Mean	Standard Deviation
Strict compliance with LPG safety standards is integral to our distribution strategy	202	3.44	1.087
Our company regularly audits distributors for adherence to ethical standards	202	3.34	1.191
Compliance with regulatory guidelines significantly enhances our brand reputation	202	3.37	1.290
Ethical marketing practices positively influence customer loyalty and trust.	202	3.34	1.144
Regulatory compliance reduces operational risks and improves overall firm performance.	202	3.30	1.258
Compliance with Regulatory and Ethical Standards Composite Score	202	3.3465	1.03049

Source: Researcher (2026)

4.4.5 Market Performance

Market performance was the dependent variable in this study and was measured using five items on a five-point Likert scale. A composite score was calculated using the mean value, such that higher scores indicated higher market performance and vice versa. The mean scores for the individual items ranged from 3.32 to 3.49, which, according to the Likert scale interpretation framework, fall within the neutral category. This indicates that respondents neither clearly agreed nor disagreed with the statements describing their firms' market performance.

The highest mean scores were recorded for the statements "Our profitability has improved as a direct result of effective distribution strategies" and "The company's market position remains strong despite competitive pressures", both with a mean score of 3.49 (SD = 1.05 and SD = 0.92, respectively). Although these scores are at the upper end of the neutral range, they suggest that respondents were cautiously positive but not definitive in affirming improvements in profitability and competitive positioning. However, being the highest-rated items suggests that respondents moderately perceive profitability and competitive resilience as relatively stronger performance dimensions among licensed LPG firms. The relatively lower standard deviation for the market position item indicates greater consistency in perceptions regarding competitive resilience

compared to profitability outcomes. These findings imply that firms may have established certain strategic strengths that support competitiveness despite existing market pressures.

The statement "Operational efficiency, particularly in product distribution, has significantly improved our market performance" recorded a mean score of 3.45 (SD = 1.18), indicating neutral perceptions regarding the contribution of operational efficiency to overall performance. The findings suggest that while operational improvements may exist, respondents did not strongly perceive these improvements as translating into substantial performance gains. The relatively higher variability further indicates that firms may differ in the extent to which operational efficiency initiatives contribute to performance outcomes.

In contrast, "Our company has experienced consistent growth in market share over the past year" and "Customer satisfaction ratings consistently indicate high levels of service quality" both recorded lower mean scores of 3.32 (SD = 1.29 and SD = 1.19, respectively). These findings suggest uncertainty or mixed experiences among firms in achieving sustained market share growth and consistently high customer satisfaction. The relatively high standard deviations indicate considerable variation across firms, implying that while some organizations may have experienced notable growth and positive customer outcomes, others may continue to face challenges in maintaining customer satisfaction and expanding their market presence.

Overall, the composite mean score for market performance was 3.41 (SD = 0.95), indicating moderate perceptions regarding performance outcomes among licensed LPG firms. The findings suggest that firms have achieved some level of profitability, competitive positioning, and operational efficiency; however, respondents did not strongly affirm sustained performance across all dimensions. The relatively moderate scores for market share growth and customer satisfaction may indicate challenges associated with maintaining competitive advantage and achieving consistent customer outcomes. These findings imply that improvements in retail distribution strategies may provide opportunities for strengthening overall market performance among licensed LPG firms operating in Nairobi County. Table 4.7 presents the descriptive statistics for market performance.

Table 4. 7: Descriptive Statistics for Market Performance

	N	Mean	Standard Deviation

Our company has experienced consistent growth in market share over the past year	202	3.32	1.285
Customer satisfaction ratings consistently indicate high levels of service quality	202	3.32	1.193
Our profitability has improved as a direct result of effective distribution strategies	202	3.49	1.052
The company's market position remains strong despite competitive pressures	202	3.49	.921
Operational efficiency, particularly in product distribution, has significantly improved our market performance	202	3.45	1.184
Market Performance Composite Score	202	3.4129	.95200

Source: Researcher (2026)

4.5 Diagnostic Tests

Before running inferential analysis, diagnostic tests were performed to determine if the data met the assumptions needed for parametric analyses. The first assumption that was evaluated was linearity, which necessitates that a linear association should exist between the independent variables and the dependent variables. The assumption of linearity can be evaluated using scatter plots of the independent variables and the dependent variable. If the data points are located close to the fit line, then it can be concluded that the linearity assumption is met. Scatter plots in Figures 4.1, 4.2, 4.3 and 4.4 confirm that the data did not violate the linearity assumption.

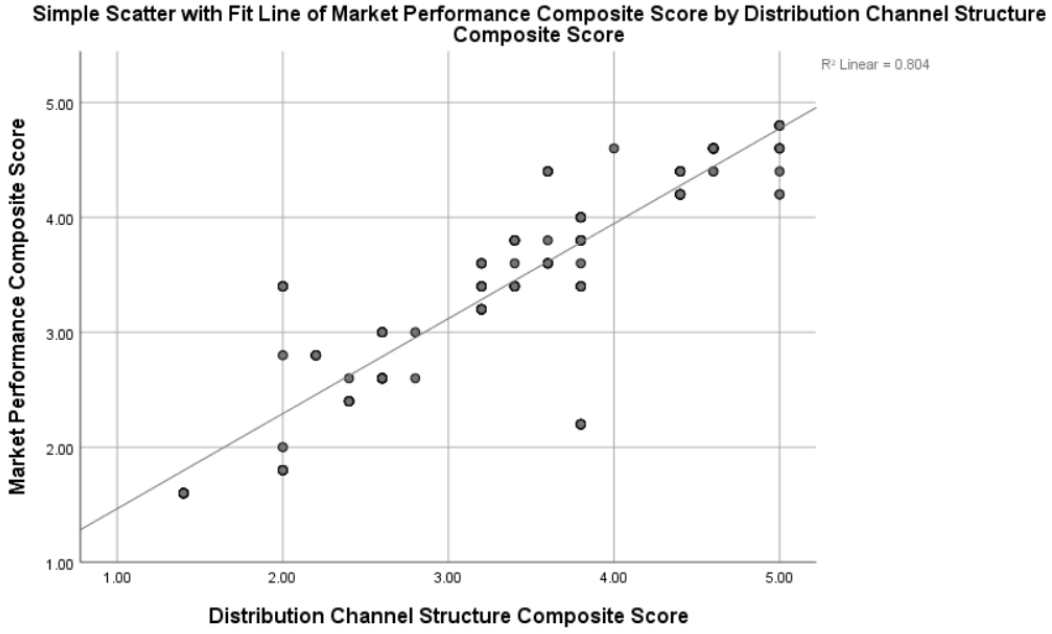


Figure 4. 1: Scatter Plot between Market Performance and Distribution Channel Structure
Source: Researcher (2026)

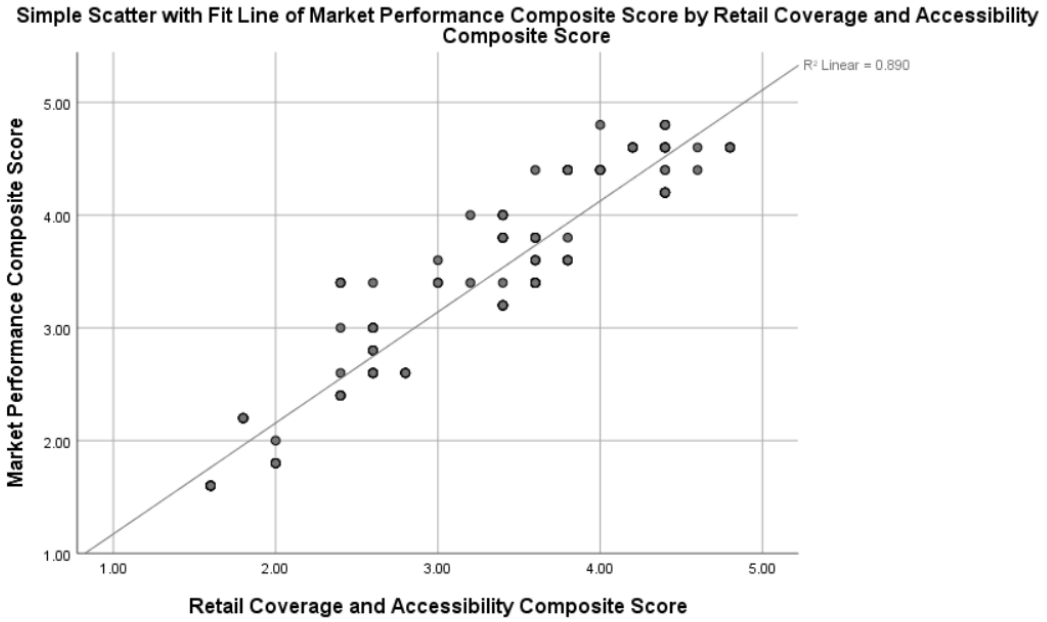


Figure 4.2: Scatter Plot between Market Performance and Retail accessibility
Source: Researcher (2026)

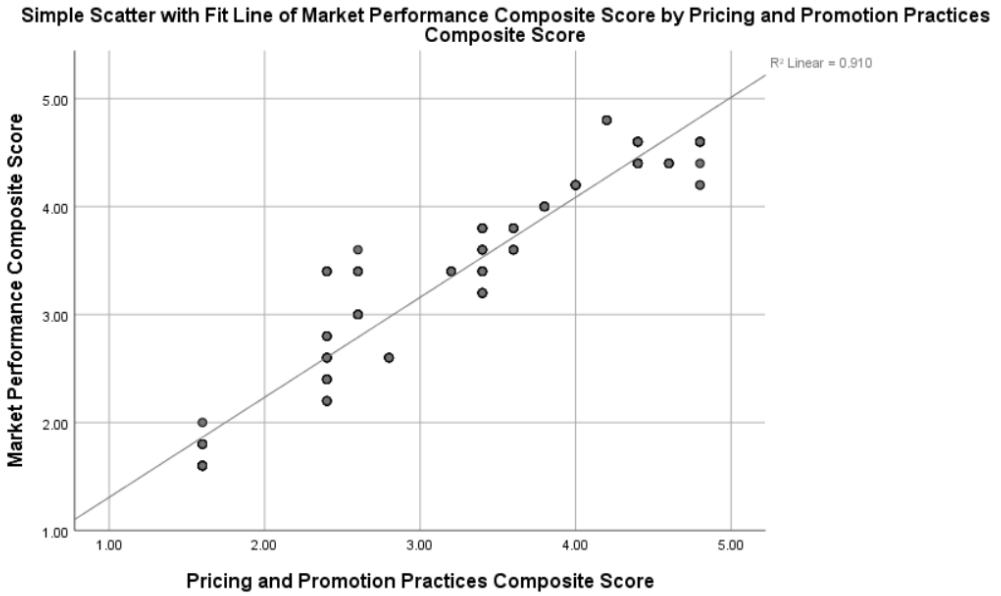


Figure 4.3: Scatter Plot between Market Performance and Pricing strategy
Source: Researcher (2026)

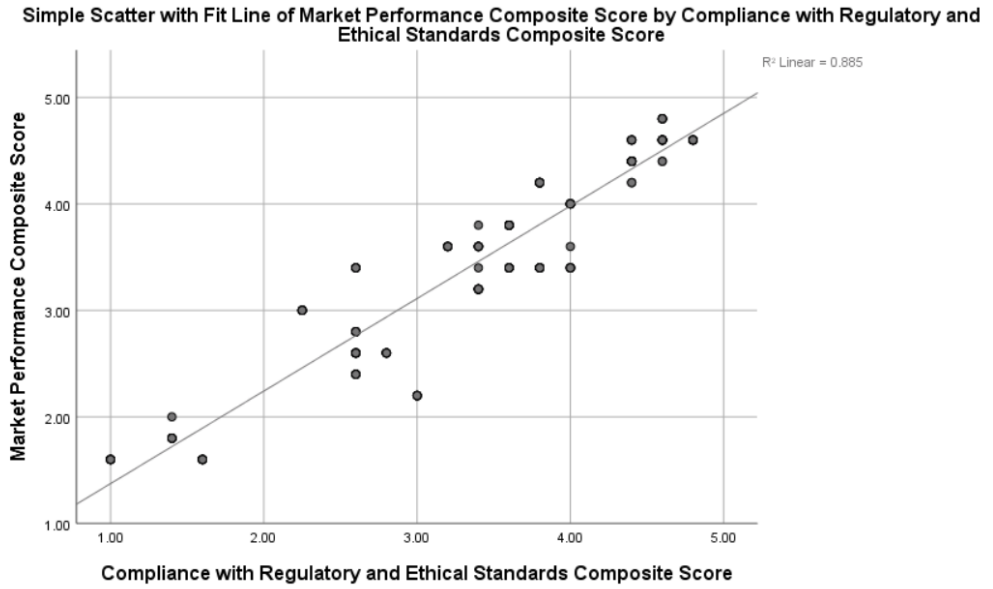


Figure 4.4: Scatter Plot between Market Performance and Distribution compliance
Source: Researcher (2026)

Normality is another important assumption that should be checked before conducting a multiple linear regression, which requires that the data should be normally distributed. Normality was checked by the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk Tests, wherein a significance of <0.05 suggests normal distribution. As shown in Table 4.8, the results indicate that all composite variables satisfied the normality assumption. Specifically, the distribution channel structure composite score recorded non-significant results for both the Kolmogorov–Smirnov test (D = 0.106, p = 0.100) and the Shapiro–Wilk test (W = 0.949, p = 0.111). Similarly, the retail accessibility composite score showed non-significant values for the Kolmogorov–Smirnov test (D = 0.158, p = 0.246) and the Shapiro-Wilk test (W = 0.941, p = 0.247), indicating normal distribution. Pricing strategy also met the normality assumption, with Kolmogorov–Smirnov (p = 0.623) and Shapiro-Wilk (p = 0.799) tests both yielding non-significant results. Distribution compliance and market performance likewise demonstrated non-significant results across both tests, with all p-values exceeding the 0.05 threshold. Overall, these findings confirm that the data were approximately normally distributed, thereby justifying the use of parametric statistical analyses in subsequent inferential testing.

Table 4.8: Normality Tests

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Distribution Channel Structure	.106	202	.100	.949	202	.111
Retail accessibility	.158	202	.246	.941	202	.247
Pricing strategy	.116	202	.623	.935	202	.799
Distribution compliance Composite Score	.125	202	.426	.933	202	.481
Market Performance	.118	202	.291	.933	202	.503

Source: Researcher (2026)

It is also important to ensure that there is no multicollinearity, which is characterized by high correlations between the independent variables. The lack of multicollinearity can be checked in the correlation matrix, wherein correlation coefficients need to be less than 0.8. This is confirmed in Table 4.8 where there is no correlation between the independent variables that exceed 0.8. Although some correlation coefficients between the independent variables and the dependent variable exceeded 0.80, this does not indicate multicollinearity, as multicollinearity concerns high intercorrelations among independent variables only. The absence of multicollinearity was further confirmed by acceptable VIF and tolerance values, all of which were within recommended thresholds.

Regarding multicollinearity diagnostics, all tolerance values were above the recommended threshold of 0.10 and all variance inflation factor (VIF) values were below 10, indicating the absence of multicollinearity among the independent variables. These findings are presented in Table 4.9.

Table 4.9: Collinearity Diagnostics

	Tolerance	VIF
Distribution Channel Structure Composite Score	.426	2.345
Retail accessibility Composite Score	.446	2.241
Pricing strategy Composite Score	.343	2.907
Distribution compliance Composite Score	.814	1.229

Source: Researcher, 2026)

Another important assumption that was evaluated was homoscedasticity. This assumption requires that the error terms (residuals) need to be consistent across all the independent variables. This assumption can be checked using a scatterplot of residuals versus predicted values, which should not show any distinguishable pattern like a cone-shaped distribution. Figure 4.5 shows that this assumption was met since there is no ant discernable pattern in the scatter plot.

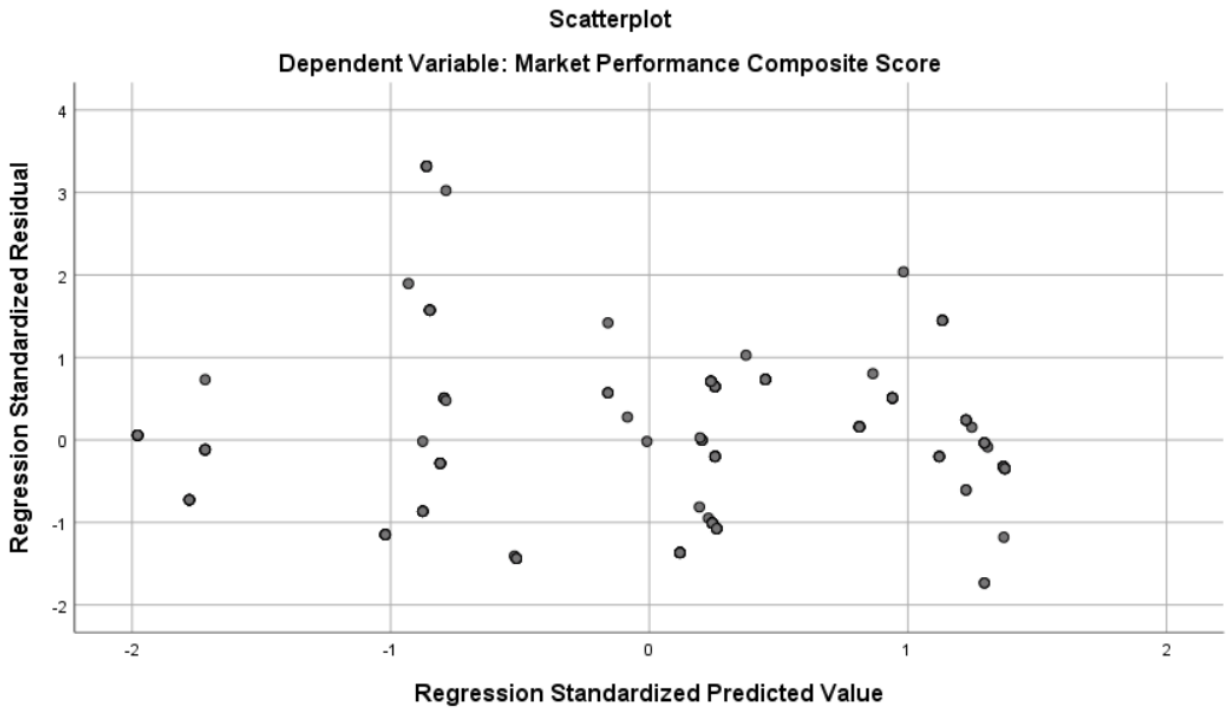


Figure 4.5: A scatterplot of residuals versus predicted values
Source: Researcher (2026)

4.6 Inferential Statistics

Relationships between variables were examined using Pearson's correlation and regression analysis. The findings of inferential statistics are presented in the following sections.

4.6.1 Correlations

Pearson's correlation coefficient is a statistical measure used to determine the strength and direction of the linear relationship between two continuous variables. The coefficient, denoted by *r*, ranges from −1 to +1. A positive value indicates that the variables move in the same direction, while a negative value indicates an inverse relationship. The strength of the relationship is

interpreted based on the absolute value of *r*, where values closer to 0 indicate weak relationships, values around 0.3 to 0.5 indicate moderate relationships, and values above 0.7 indicate strong relationships. Statistical significance is assessed using the p-value, with a p-value less than 0.05 indicating that the observed relationship is unlikely to have occurred by chance.

The correlation results in Table 4.10 reveal strong and statistically significant positive relationships between market performance and all the independent variables considered in the study. Distribution channel structure exhibited a strong positive correlation with market performance ($r = 0.897$, $p < 0.01$), indicating that better-structured and coordinated distribution channels are strongly associated with improved market performance among licensed LPG companies in Nairobi County. Retail accessibility showed a very strong positive relationship with market performance ($r = 0.943$, $p < 0.01$), suggesting that wider retail presence and easier access to LPG products are closely linked to higher market performance. Pricing strategy recorded the strongest positive correlation with market performance ($r = 0.954$, $p < 0.01$), implying that competitive pricing and effective promotional strategies play a critical role in enhancing firm performance. Similarly, distribution compliance demonstrated a very strong positive correlation with market performance ($r = 0.941$, $p < 0.01$), highlighting the importance of regulatory adherence and ethical conduct in supporting firm success. Overall, the findings suggest that improvements in retail distribution strategies are strongly associated with higher market performance, thereby justifying further inferential analysis using regression techniques.

Table 4.10: Correlations

		DCS	RA	PS	DS	MP
DCS	r	1				
	p					
RA	r	.687	1			
	p	.000				
PS	r	.504	.639	1		
	p	.000	.000			
DS	r	.533	.609	.636	1	
	p	.000	.000	.000		
MP	r	.897	.943	.954	.941	1
	p	.000	.000	.000	.000	

Legend: DCS: Distribution Channel Structure; RA: Retail Accessibility; PS: Pricing Strategy; DS: Distribution compliance; MP: Marketing Performance
Source: Researcher (2026)

Although the correlation analysis indicated relatively strong positive relationships between the independent variables and market performance, the findings were interpreted cautiously because exceptionally high correlation coefficients may occasionally suggest potential methodological concerns such as multicollinearity, conceptual overlap among variables, or common response tendencies. To assess the possibility of multicollinearity, intercorrelations among the independent variables were examined and found to remain within acceptable thresholds, indicating that the variables captured related but conceptually distinct dimensions of retail distribution strategies. Furthermore, the study variables were operationalized based on separate theoretical constructs and measured using distinct indicators derived from prior literature, thereby reducing the likelihood of conceptual redundancy. The use of standardized measurement procedures and multiple respondents drawn from different managerial functions also helped minimize potential individual response bias. Consequently, although the relationships observed were strong, they were considered theoretically and statistically plausible within the context of the LPG sector.

It is important to interrogate the inter-correlations among the independent variables themselves, as exceptionally high IV-to-IV correlations may indicate construct overlap or conceptual redundancy rather than independent measurement of distinct phenomena. Examination of the correlation matrix shows that while several IV-to-IV correlations are substantial, none exceeds the conventional threshold of 0.8 that would indicate problematic multicollinearity (Hair, Black, Babin & Anderson, 2014). The variance inflation factor (VIF) values reported in Table 4.9 further confirm the absence of statistical multicollinearity, with all VIF values below the conservative threshold of 10 and tolerance values above 0.10. Nevertheless, the substantial inter-correlations among the IVs are consistent with the theoretical position that these four dimensions of retail distribution strategy operate as an interrelated system rather than as fully independent levers — firms that excel in one dimension tend to excel in others, reflecting the integrated nature of distribution strategy as a strategic system (Coughlan et al., 2006; Rosenbloom, 2012). This interpretation is further supported by the discussion of construct integration in Sections 1.2.1 and 2.3.

4.6.2 Regression Analysis

A multiple regression analysis was conducted to determine if distribution channel structure, retail accessibility, pricing strategy and distribution compliance significantly predict the market performance of LPG companies.

4.6.2.1 Regression Analysis for Distribution Channel Structure and Market Performance

To determine the relationship between distribution channel structure and market performance among licensed LPG brand owners in Nairobi County, a simple linear regression analysis was conducted. The results are presented in Table 4.11.

Table 4.11: Regression Analysis for Distribution Channel Structure and Market Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.697[a]	.485	.485	.42244		
a. Predictors: (Constant), Distribution Channel Structure						
ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	146.476	1	146.476	820.800	.000[b]
	Residual	35.691	200	.178		
	Total	182.167	201			
a. Dependent Variable: Market Performance						
b. Predictors: (Constant), Distribution Channel Structure						
Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.639	.101		6.311	.000
	Distribution Channel Structure	.827	.029	.897	28.650	.000
a. Dependent Variable: Market Performance						

Source: Researcher (2026)

The model summary results indicated a correlation coefficient (R = 0.697), suggesting a strong positive relationship between distribution channel structure and market performance. The coefficient of determination (R^2 = 0.485) showed that 48.5% of the variation in market performance among licensed LPG firms could be explained by distribution channel structure,

while the remaining 51.5% of the variation may be attributed to other factors not included in the model. This finding suggests that distribution channel structure plays an important role in explaining market performance outcomes within the LPG sector.

The ANOVA results showed that the regression model was statistically significant ($F = 820.800$, $p < 0.05$), indicating that the model adequately explained the relationship between distribution channel structure and market performance. The significance of the model further implies that distribution channel structure contributes meaningfully to explaining variations in market performance among licensed LPG firms.

The regression coefficient results indicated that distribution channel structure had a positive and statistically significant relationship with market performance ($\beta = 0.827$, $t = 28.650$, $p < 0.05$). The positive coefficient suggests that improvements in distribution channel structure were associated with corresponding increases in market performance. Specifically, a one-unit improvement in distribution channel structure was associated with a 0.827-unit increase in market performance among licensed LPG firms, holding other factors constant.

The regression equation was expressed as:

$$Y=0.639+0.827X_1$$

Where:

- Y = Market Performance
- X_1 = Distribution Channel Structure

The findings imply that firms with stronger and more coordinated distribution structures are likely to experience improved market outcomes through enhanced market reach, stronger coordination mechanisms, and more effective channel management practices. The results further suggest that strengthening distribution networks and improving oversight of channel arrangements may contribute positively to market performance among licensed LPG firms operating in Nairobi County.

4.6.2.2 Regression Analysis for Retail Accessibility and Market Performance

To determine the relationship between retail accessibility and market performance among licensed LPG brand owners in Nairobi County, a simple linear regression analysis was conducted. The results are presented in Table 4.12.

Table 4.12: Regression Analysis for Retail Accessibility and Market Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.643[a]	.413	.413	.31645		
a. Predictors: (Constant), Retail Accessibility						
ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	162.139	1	162.139	1619.140	.000[b]
	Residual	20.028	200	.100		
	Total	182.167	201			
a. Dependent Variable: Market Performance						
b. Predictors: (Constant), Retail Accessibility						
Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.188	.083		2.260	.025
	Retail Accessibility	.984	.024	.943	40.239	.000
a. Dependent Variable: Market Performance						

Source: Researcher (2026)

The model summary results indicated a correlation coefficient (R = 0.643), suggesting a strong positive relationship between retail accessibility and market performance. The coefficient of determination (R^2 = 0.413) showed that approximately 41.3% of the variation in market performance among licensed LPG firms could be explained by retail accessibility, while the remaining 58.7% may be attributed to other factors not included in the model. These findings suggest that retail accessibility represents an important factor associated with market performance within the LPG sector.

The ANOVA results showed that the regression model was statistically significant (F = 1619.140, $p < 0.05$), indicating that the model adequately explained the relationship between retail accessibility and market performance. The statistical significance of the model suggests that retail

accessibility contributed meaningfully toward explaining variations in market performance among licensed LPG firms.

The regression coefficient results indicated that retail accessibility had a positive and statistically significant relationship with market performance ($\beta = 0.984$, $t = 40.239$, $p < 0.05$). The positive coefficient suggests that improvements in retail accessibility were associated with corresponding increases in market performance. Specifically, a one-unit increase in retail accessibility was associated with a 0.984-unit increase in market performance among licensed LPG firms, holding other factors constant.

The regression equation was expressed as:

$Y=0.188+0.984X2$

Where:

- Y = Market Performance
- X_2 = Retail Accessibility

The findings imply that improving accessibility through strategically located retail outlets, enhanced product availability, and broader market coverage may strengthen market performance outcomes among licensed LPG firms. The results further suggest that firms that improve customer convenience and increase access to LPG products are likely to enhance competitiveness, strengthen customer reach, and improve overall market outcomes.

4.6.2.3 Regression Analysis for Pricing Strategy and Market Performance

To determine the relationship between pricing strategy and market performance among licensed LPG brand owners in Nairobi County, a simple linear regression analysis was conducted. The results are presented in Table 4.13.

Table 4.13: Regression Analysis for Pricing Strategy and Market Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.754[a]	.568	.568	.28709		
a. Predictors: (Constant), Pricing Strategy						
ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	165.683	1	165.683	2010.220	.000[b]
	Residual	16.484	200	.082		
	Total	182.167	201			
a. Dependent Variable: Market Performance						
b. Predictors: (Constant), Pricing Strategy						
Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.382	.071		5.413	.000
	Pricing Strategy	.926	.021	.954	44.835	.000
a. Dependent Variable: Market Performance						

Source: Researcher (2026)

The model summary results indicated a correlation coefficient (R = 0.754), suggesting a strong positive relationship between pricing strategy and market performance. The coefficient of determination (R^2 = 0.568) showed that approximately 56.8% of the variation in market performance among licensed LPG firms could be explained by pricing strategy, while the remaining 43.2% may be attributed to other factors not included in the model. This finding suggests that pricing strategy represents an important factor associated with market performance within the LPG sector.

The ANOVA results indicated that the regression model was statistically significant (F = 2010.220, $p < 0.05$), implying that the model adequately explained the relationship between pricing strategy and market performance. The significance of the model suggests that pricing strategy contributed meaningfully to explaining variations in market performance among licensed LPG firms.

The coefficient results indicated that pricing strategy had a positive and statistically significant relationship with market performance ($\beta = 0.926$, $t = 44.835$, $p < 0.05$). The positive coefficient suggests that improvements in pricing strategy were associated with corresponding increases in

market performance. Specifically, a one-unit increase in pricing strategy was associated with a 0.926-unit increase in market performance among licensed LPG firms, holding other factors constant.

The regression equation was expressed as: $Y=0.382+0.926X_3$

Where:

- Y = Market Performance
- X_3 = Pricing Strategy

The findings imply that firms adopting effective pricing approaches may improve competitiveness, attract and retain customers, and strengthen market positioning. The results further suggest that strategic pricing practices can play an important role in enhancing market outcomes among licensed LPG firms operating in Nairobi County.

4.6.2.4 Regression Analysis for Distribution Compliance and Market Performance

To determine the relationship between distribution compliance and market performance among licensed LPG brand owners in Nairobi County, a simple linear regression analysis was conducted. The results are presented in Table 4.14.

Table 4.14: Regression Analysis for Distribution Compliance and Market Performance

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.641[a]	.410	.410	.32367	
a. Predictors: (Constant), Distribution Compliance					
ANOVA[a]					
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	161.214	1	161.214	1538.831	.000[b]
	Residual	20.953	200	.105		
	Total	182.167	201			
a. Dependent Variable: Market Performance						
b. Predictors: (Constant), Distribution Compliance						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.504	.078		6.504	.000

	Distribution Compliance	.869	.022	.941	39.228	.000
a. Dependent Variable: Market Performance						

Source: Researcher (2026)

The model summary results indicated a correlation coefficient (R = 0.641), suggesting a strong positive relationship between distribution compliance and market performance. The coefficient of determination (R^2 = 0.410) showed that approximately 41.0% of the variation in market performance among licensed LPG firms could be explained by distribution compliance, while the remaining 59.0% of the variation may be attributed to other factors not included in the model. These findings suggest that distribution compliance represents an important factor associated with market performance outcomes within the LPG sector.

The ANOVA results indicated that the regression model was statistically significant (F = 1538.831, $p < 0.05$), implying that the model adequately explained the relationship between distribution compliance and market performance. The significance of the model suggests that distribution compliance contributed meaningfully toward explaining variations in market performance among licensed LPG firms.

The coefficient results indicated that distribution compliance had a positive and statistically significant relationship with market performance ($\beta = 0.869$, $t = 39.228$, $p < 0.05$). The positive coefficient suggests that improvements in distribution compliance were associated with corresponding increases in market performance. Specifically, a one-unit increase in distribution compliance was associated with a 0.869-unit increase in market performance among licensed LPG firms, holding other factors constant.

The regression equation was expressed as:

$Y=0.504+0.869X4$

Where:

- Y = Market Performance
- X_4 = Distribution Compliance

The findings imply that stronger adherence to regulatory, safety, and ethical requirements may contribute positively to market outcomes among licensed LPG firms. The results further suggest that firms that integrate compliance practices into their operational activities may enhance customer confidence, reduce operational risks, and strengthen their competitive position within the market. Although the relationship was strong, the findings should be interpreted alongside broader organizational and market factors that may also influence performance outcomes.

4.6.2.5 Multiple Regression Analysis for Retail Distribution Strategies and Market Performance

The model summary in Table 4.15 presents the regression analysis findings for retail distribution strategies and market performance. As shown in Table 4.15, the model yielded a high multiple correlation coefficient (R = 0.970), indicating a very strong linear relationship between the independent variables (distribution channel structure, retail accessibility, pricing strategy, and distribution compliance) and the dependent variable, market performance.

The coefficient of determination (R^2) was 0.940, which suggests that approximately 94.0% of the variation in market performance can be explained by the combined influence of the four predictor variables included in the model. The adjusted R^2 value of 0.939 further confirms the robustness of the model since it accounts for the number of predictors and suggests minimal model overfitting. This indicates that the independent variables jointly provide a strong and reliable explanation of changes in market performance.

The standard error of the estimate was 0.236, which is relatively low; thus, suggesting that the observed market performance values are closely clustered around the predicted values generated by the model. This reflects a high level of prediction accuracy. Additionally, the Durbin-Watson statistic was 2.154, which is close to the ideal value of 2.0. This indicates the absence of significant autocorrelation in the residuals. Overall, the model summary demonstrates that the regression model is statistically sound and suitable for assessing the effect of retail distribution strategies on market performance.

Table 4.15: Multiple Regression for Retail Distribution Strategies and Market Performance

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.970[a]	.940	.939	.23568	2.154
a. Predictors: (Constant), Distribution compliance, Retail accessibility, Distribution Channel Structure, Pricing strategy					
b. Dependent Variable: Market Performance Composite Score					

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	171.224	4	42.806	770.665	.000[b]
	Residual	10.942	197	.056		
	Total	182.167	201			
a. Dependent Variable: Market Performance Composite Score						
b. Predictors: (Constant), Distribution compliance, Retail accessibility, Distribution Channel Structure, Pricing strategy						

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.208	.062		3.345	.001
	Distribution Channel Structure	.345	.047	.374	7.415	.000
	Retail accessibility	.347	.055	.333	6.268	.000
	Pricing strategy	.353	.061	.363	5.788	.000
	Distribution compliance	.308	.057	.333	5.440	.000

Source: Researcher (2026)

The ANOVA results in Table 4.15 assess the overall significance of the regression model in explaining variations in market performance among licensed LPG companies in Nairobi County. As presented in Table 4.11, the regression model produced a regression sum of squares of 171.224 compared to a residual sum of squares of 10.942, which indicates that a substantial proportion of the total variation in market performance is explained by the predictor variables included in the model.

The model yielded a highly significant F-statistic ($F(4, 197) = 770.665$, $p < 0.001$). This demonstrates that that the combined effect of distribution channel structure, retail accessibility, pricing strategy, and distribution compliance significantly predicts market performance. The large

F-value indicates that the model explains significantly more variance in the dependent variable than would be expected by chance alone.

Additionally, the relatively small residual mean square (0.056) suggests that unexplained variation in market performance is minimal, hence, further supporting the goodness of fit of the model. Overall, the ANOVA results confirm that the regression model is statistically significant and appropriate for assessing the influence of retail distribution strategies on market performance, thereby justifying further interpretation of the individual regression coefficients.

The coefficients in Table 4.15 presents the individual contribution of each independent variable to market performance while controlling for the effects of the other variables in the regression model. As shown in Table 4.13, the constant term was statistically significant ($\beta = 0.208$, $t = 3.345$, $p = 0.001$), indicating that when all predictor variables are held constant, market performance has a positive baseline value.

Distribution channel structure had a positive and statistically significant effect on market performance ($\beta = 0.345$, $t = 7.415$, $p < 0.001$). This implies that a one-unit increase in the distribution channel structure composite score results in a 0.345-unit increase in market performance, holding other factors constant. The standardized beta coefficient ($\beta = 0.374$) indicates that distribution channel structure is one of the strongest predictors of market performance in the model.

Retail accessibility also demonstrated a positive and significant influence on market performance ($\beta = 0.347$, $t = 6.268$, $p < 0.001$). This suggests that improvements in retail presence and accessibility lead to higher market performance. The standardized beta value ($\beta = 0.333$) shows that this variable makes a substantial contribution to explaining variations in market performance.

Pricing strategy was found to have a positive and statistically significant effect on market performance ($\beta = 0.353$, $t = 5.788$, $p < 0.001$). This indicates that enhanced pricing competitiveness and effective promotional strategies are associated with improved market performance. With a standardized beta of 0.363, pricing strategy represents a strong predictor, second only to distribution channel structure in terms of relative influence.

Distribution compliance also had a positive and significant effect on market performance ($\beta = 0.308$, $t = 5.440$, $p < 0.001$). This suggests that higher levels of regulatory compliance and ethical conduct contribute positively to firm performance. The standardized beta coefficient ($\beta = 0.333$) indicates that compliance has a meaningful and comparable influence relative to retail accessibility. Overall, the results demonstrate that all four retail distribution strategy variables had positive and statistically significant relationships with market performance. However, beyond statistical significance, the findings also have practical implications within the LPG sector. The descriptive results showed that most strategy dimensions recorded moderate or neutral perceptions, suggesting that firms may not have fully optimized their distribution systems. This implies that while retail distribution strategies are important in explaining market performance outcomes, practical implementation challenges may still limit the realization of their full benefits. For instance, firms may continue to face constraints relating to market coverage, coordination of distribution channels, competitive pricing pressures, and consistency in compliance practices. Therefore, the findings suggest that strengthening the implementation and operational effectiveness of these strategies may generate more substantial performance improvements

The final regression model becomes:

$$MP = 0.208 + 0.345X_1 + 0.347\ X_2 + 0.353X_3 + 0.308X_4$$

Where,

Y = Market Performance
XI = Distribution Channel Structure
X2 = Retail accessibility
X3 = Pricing and Promotional Practices
X4 = Distribution compliance

Although the regression findings indicated substantial explanatory power for the study variables, the results should be interpreted cautiously within the context of the LPG industry. Market performance is a complex and multidimensional phenomenon influenced not only by internal distribution strategies but also by external environmental factors such as market competition, regulatory changes, economic conditions, customer preferences, infrastructure constraints, and

actions of informal market participants. Therefore, while the study variables explained a substantial proportion of the observed variation in market performance, it is unlikely that these variables exclusively account for all performance outcomes within the LPG sector. The findings instead suggest that retail distribution strategies represent important organizational dimensions associated with market performance, while recognizing that broader environmental and contextual factors may also contribute to performance variations across firms.

In addition, the descriptive findings indicated that most composite mean scores fell within the neutral category, suggesting moderate perceptions regarding the implementation and effectiveness of retail distribution strategies among licensed LPG firms. While this may initially appear inconsistent with the strong inferential findings, the results provide important practical insights into sector realities. The neutral ratings imply that respondents did not strongly perceive distribution structures, accessibility initiatives, pricing mechanisms, and compliance practices as being fully optimized across their organizations. Rather than indicating poor performance, these moderate perceptions may reflect existing operational and market challenges within the sector.

However, the inferential findings revealed relatively strong relationships between the independent variables and market performance, together with substantial explanatory power within the regression models. Although these findings may initially appear inconsistent, the two results are not necessarily contradictory. Neutral descriptive scores reflect the perceived level or extent of implementation of the strategies, whereas correlation and regression analyses examine the extent to which changes in these strategies are associated with changes in market performance.

Nonetheless, the strength of the relationships observed warrants careful interpretation. Strong correlations and high explanatory power may occasionally arise due to methodological factors such as common method variance associated with self-reported data, conceptual overlap between constructs, or similarities in respondents' perceptions across questionnaire items. To minimize such risks, the study adopted theoretically distinct constructs, utilized indicators derived from prior empirical studies, and collected responses from multiple managerial categories to reduce dependence on a single respondent source.

Furthermore, the relatively moderate descriptive scores suggest that although the strategies may not have been strongly implemented across all firms, even moderate variations in these strategies may still be associated with meaningful differences in market performance outcomes. Practically, these findings suggest areas requiring managerial attention. For example, stronger oversight of third-party distributors may improve channel efficiency, expanded accessibility initiatives may improve customer reach, more innovative pricing mechanisms may strengthen competitiveness, and stronger institutionalization of compliance practices may enhance customer trust and operational credibility. Therefore, the findings suggest that retail distribution strategies remain important dimensions associated with market performance while also highlighting opportunities for improvement within the licensed LPG sector.

A further point requiring critical examination concerns the relationship between the explanatory power of the simple regression models reported in Sections 4.6.2.1 through 4.6.2.4 and that of the multiple regression model in Section 4.6.2.5. The simple regressions indicate that each independent variable, taken alone, explains between approximately 41% and 57% of the variation in market performance. The multiple regression, by contrast, indicates that the four variables combined explain 94% of the variation. This pattern is partly explained by the fact that the independent variables are themselves inter-correlated and capture complementary aspects of retail distribution strategy. When the four variables are entered jointly into the model, each contributes incremental explanatory power beyond what it shares with the others, producing a substantially higher combined R^2 than any single variable alone. Nevertheless, the magnitude of the difference also warrants acknowledgement of a methodological caveat: shared method variance arising from the use of a single self-report instrument may inflate the apparent joint explanatory power of the model, and the findings should therefore be interpreted as evidence of strong associations rather than as definitive causal estimates (Podsakoff et al., 2003). This caveat is consistent with the descriptive cross-sectional design of the study, which supports inference about associations rather than causation.

4.7 Chapter Summary

This chapter established that all retail distribution strategy variables examined had a positive and statistically significant influence on market performance among licensed LPG companies in Nairobi County. Distribution channel structure emerged as the strongest predictor of market performance, followed closely by pricing strategy. Retail accessibility and distribution compliance also demonstrated substantial positive effects. Overall, the regression results indicate that improvements across these distribution dimensions are associated with higher market performance, which highlights the importance of coordinated, accessible, competitively priced, and compliant retail distribution strategies.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion, conclusion and recommendations from the findings of this study. The structure of the chapter consists of a summary of the main findings, discussion, recommendations, study limitations and areas of further research.

5.2 Summary of Main Results

The first objective of the study examined the effect of distribution channel structure on market performance among licensed LPG companies in Nairobi County. The findings revealed a strong and positive relationship, with distribution channel structure emerging as the most influential predictor in the regression analysis. This finding suggests that well-coordinated and formally structured distribution systems significantly enhance market performance. The second objective assessed the effect of retail accessibility, and the results demonstrated a strong positive association with market performance, thus, confirming that wider retail presence and improved accessibility contribute substantially to improved firm outcomes. The third objective focused on pricing strategy, which also showed a strong positive relationship with market performance and ranked among the key predictors in the regression model, highlighting the importance of competitive pricing and effective promotional strategies. The fourth objective examined distribution compliance and found a significant positive effect on market performance. This result underscored the role of regulatory adherence and ethical conduct in supporting firm competitiveness and overall performance.

5.3 Discussion of Findings

5.3.1 Distribution Channel Structure and Market Performance

The first objective of the study sought to determine the effect of distribution channel structure on the market performance of licensed LPG companies in Nairobi County. The findings revealed that distribution channel structure had a positive and statistically significant influence on market performance, and it emerged as the strongest predictor in the regression model. This indicates that

firms with well-coordinated, formally structured, and efficiently managed distribution channels tend to achieve superior market performance.

These findings strongly support the RBV theory, which emphasizes that firm-specific resources and capabilities, such as proprietary distribution networks and controlled channel structures, can generate sustained competitive advantage (Barney, 1991; Wernerfelt, 1984). In the context of the LPG sector, structured distribution channels constitute a valuable and difficult-to-imitate resource that enhances operational efficiency, brand consistency, and customer trust. The results further align with the DCT, as effective channel structuring reflects a firm's ability to adapt and reconfigure its distribution systems in response to regulatory pressure, safety concerns, and competition from informal operators (Teece et al., 1997).

Empirically, the findings are consistent with prior studies by Mwangi and Muli (2017) and Mutinda et al. (2022), who found that vertically integrated and well-managed distribution channels improve coordination, reduce operational inefficiencies, and enhance market performance in Kenya's petroleum sector. The results also reinforce concerns raised by Omondi and Kamau (2021), who observed that loosely controlled channels expose firms to safety risks and reputational damage. Unlike some global frameworks that assume stable and formal markets (Kotler & Keller, 2009), this study confirms that in the Kenyan LPG context, characterized by informal distribution and regulatory challenges, structured channels are particularly critical for performance. The strong effect observed in this study may be attributed to heightened regulatory scrutiny by EPRA and increased consumer sensitivity to safety, making channel control more consequential than in less regulated contexts.

Although the findings converged with previous studies and theoretical expectations, some differences emerge regarding the magnitude of influence observed. While prior studies primarily emphasized operational efficiency and coordination benefits, the present study found distribution channel structure to exhibit a particularly strong association with market performance. This may be explained by the unique characteristics of Kenya's LPG sector, where concerns relating to safety, illegal refilling practices, and informal market participation increase the strategic importance of controlling distribution networks. However, alternative explanations may also exist, including differences in firm size, geographic market presence, or managerial capabilities that were not directly examined in this study. Therefore, although the findings support RBV and Dynamic

Capability Theory, the observed relationship may also reflect broader market conditions rather than channel structure alone.

5.3.2 Retail Accessibility and Market Performance

The second objective examined the effect of retail accessibility on market performance. The findings indicated a positive and statistically significant relationship, showing that firms with wider retail coverage and more accessible outlets experience higher levels of market performance. Retail accessibility also emerged as a strong predictor in the regression analysis.

This finding aligns well with both RBV and DCT theories. From an RBV perspective, extensive retail coverage represents a tangible resource that enhances customer reach and convenience, thereby contributing to competitive advantage (Barney, 1991). Accessibility strengthens customer relationships and reinforces brand presence, which are key intangible assets. From a dynamic capabilities standpoint, expanding into underserved or peri-urban areas reflects a firm's ability to sense unmet demand, seize market opportunities, and reconfigure distribution networks to match evolving consumer needs (Teece et al., 1997; Pisano, 2015).

The results are consistent with empirical studies by KIPPRA (2021), Shupler et al. (2021), and Levy et al. (2009), all of which emphasize that proximity to licensed retail outlets significantly influences consumer choice, LPG adoption, and loyalty. The findings also corroborate Chege (2013), who observed that inadequate retail access in peri-urban areas pushes consumers toward informal and unsafe LPG suppliers. While global studies highlight the role of digital and mobile ordering in enhancing accessibility (Shupler et al., 2021), the moderate strength of this variable in the present study may reflect limited adoption of such innovations in Nairobi's LPG market. This divergence suggests that while physical retail presence remains dominant, digital accessibility has yet to mature sufficiently to exert a stronger performance effect in the local context.

The findings generally converged with prior empirical studies emphasizing the importance of retail accessibility in influencing market outcomes. However, the descriptive findings indicated only moderate perceptions regarding accessibility practices despite the strong statistical relationship observed. This suggests that although accessibility is associated with improved performance, many firms may not yet have fully optimized their retail networks. A possible explanation is that physical accessibility alone may not guarantee stronger performance outcomes without complementary

factors such as service quality, technological integration, and product availability. Therefore, while the findings support theoretical expectations, they also suggest that accessibility should be considered alongside broader operational capabilities.

5.3.3 Pricing Strategy and Market Performance

The third objective assessed the effect of pricing strategy on market performance. The findings demonstrated that pricing strategy had a positive and statistically significant effect on market performance and ranked among the strongest predictors in the regression model. This suggests that competitive pricing combined with effective promotional strategies enhances firm performance in the LPG sector.

These findings are well supported by RBV, which views pricing strategies, brand communication, and promotional capabilities as intangible resources that enhance customer loyalty and brand equity (Varadarajan, 2020). Effective pricing and promotion also reflect dynamic capabilities, as firms must continuously adjust prices and messaging in response to competition from informal operators, price-sensitive consumers, and regulatory constraints (Teece, 2007).

Empirically, the results align with Mungai and Wanyoike (2015) and Kotler and Keller (2009), who argue that transparent pricing and strategic promotions enhance competitiveness, customer retention, and profitability. The findings also support Oluwasanmi and Ogunro (2021), who note that informal market distortions place pressure on licensed firms to adopt more strategic pricing approaches. However, unlike some global studies that warn against aggressive price competition (Lewis, 2012; Tveito, 2020), this study found pricing and promotion to be positively associated with performance. This difference may be attributed to the Kenyan LPG context, where price sensitivity is high and promotional efforts that emphasize safety, quality, and legitimacy provide licensed firms with a strategic advantage over unregulated competitors.

While the findings largely converged with prior studies emphasizing the importance of strategic pricing, they diverged from studies suggesting that aggressive pricing competition may reduce profitability and create unsustainable market conditions. One possible explanation for this difference is the nature of the Kenyan LPG market, where informal competition and consumer sensitivity to prices create conditions under which strategic pricing and promotional activities become more influential. However, the moderate descriptive findings suggest that firms may still

experience challenges in balancing affordability with profitability. This indicates that pricing effectiveness may depend not only on pricing levels themselves but also on broader considerations such as customer perceptions, safety messaging, and competitive positioning.

5.3.4 Distribution Compliance and Market Performance

The fourth objective examined the effect of distribution compliance on market performance. The findings revealed a positive and statistically significant relationship, indicating that firms with higher levels of regulatory and ethical compliance tend to achieve better market performance.

This result strongly supports the RBV, which identifies reputation, trust, and legitimacy as valuable intangible resources that contribute to sustained competitive advantage (Barney, 1991; Crane & Matten, 2016). Compliance systems protect these assets by reducing safety risks and enhancing brand credibility. The findings also align with Dynamic Capability Theory, as compliance requires firms to continuously adapt to regulatory changes, enforce ethical standards across distribution networks, and reconfigure processes to meet evolving legal requirements (Teece et al., 1997).

The results are consistent with empirical studies by Oluwasanmi and Ogunro (2021) and Crane and Matten (2016), which found that compliance enhances consumer trust and firm resilience in safety-sensitive industries. They also reinforce Chege's (2013) observation that non-compliance undermines firm performance through reputational damage and loss of consumer confidence. While some global studies stop short of linking compliance directly to firm-level outcomes (Kotler & Keller, 2009), this study provides empirical evidence from the Kenyan LPG sector that proactive compliance contributes directly to market performance. The strength of this relationship may reflect increasing consumer awareness, intensified regulatory enforcement by EPRA, and growing differentiation between licensed firms and illegal operators in Nairobi County.

Although the findings converged with previous studies emphasizing the value of compliance and ethical practices, differences emerge regarding the direct effect of compliance on firm-level outcomes. Some studies have treated compliance primarily as a legal requirement rather than a strategic performance driver. However, the present findings suggest that compliance may generate broader market benefits through enhanced trust and legitimacy. Nevertheless, alternative explanations may exist because firms with stronger compliance systems may simultaneously possess greater financial resources, stronger management systems, or superior operational

structures that independently contribute to performance outcomes. Therefore, the observed relationship should be interpreted within the broader organizational context of licensed LPG firms.

The integrated conceptualization of distribution compliance adopted in this study encompassing both regulatory adherence and ethical conduct as components of a single construct, finds strong theoretical support in institutional and legitimacy theory (Suchman, 1995; Scott, 2014; Deephouse et al., 2017). In the LPG sector context, the empirical findings reinforce this integration: respondents did not treat regulatory compliance and ethical conduct as separable activities but rather as joint mechanisms through which firms establish legitimacy in a market characterized by significant informal-sector competition. This is consistent with the institutional theory argument that, in sectors where consumer trust is shaped by the formal-versus-informal distinction, regulatory and normative legitimacy operate as a unified strategic resource rather than as separate compliance activities (Scott, 2014).

A further interpretive point concerns the apparent positive association between distribution compliance and market performance. Although the statistical relationship is strong, the cross-sectional design of the study does not support a causal claim. It is plausible that the direction of influence operates partly in reverse: better-performing firms may have greater resources to invest in compliance systems, distributor audits, and ethical oversight, just as compliant firms may achieve better performance. The findings are therefore best interpreted as evidence that compliance and performance are positively associated in the licensed LPG sector, with the precise direction of causation left for future longitudinal research to clarify. Nevertheless, the theoretical and empirical support for treating compliance as a strategic resource (rather than as a regulatory cost) is strong enough to warrant the practical recommendation that firms institutionalize compliance practices as an integrated component of their distribution strategy.

5.4 Conclusion

This study set out to examine the effect of four retail distribution strategy dimensions: distribution channel structure, retail accessibility, pricing strategy, and distribution compliance, on the market performance of licensed Liquefied Petroleum Gas brand owners in Nairobi County, Kenya. Based on data from 202 managerial respondents drawn from the 77 licensed brand owners, the study

found that all four dimensions are positively and significantly associated with market performance, collectively explaining a substantial portion of the variation in firm-level outcomes.

The principal conclusion of the study is that retail distribution strategy functions as an integrated strategic system rather than as a collection of independent operational levers. The four dimensions act together to differentiate licensed firms from informal market operators in a regulated, safety-sensitive sector. Channel structure emerged as the strongest individual predictor, indicating that the way in which firms design and coordinate their distribution networks is the single most influential dimension of retail distribution strategy. Pricing strategy was the second-strongest predictor, suggesting that the joint use of competitive pricing and pricing-adjacent promotional communication is an important mechanism through which licensed firms establish their position against informal competitors. Retail accessibility and distribution compliance also contributed substantially and comparably to market performance, indicating that wider physical reach and adherence to formal regulatory and ethical standards are not merely operational necessities but strategic levers that shape firm outcomes.

Taken together, these conclusions support a re-conceptualization of retail distribution from a downstream logistical function to a strategic system through which licensed firms compete on the basis of legitimacy, safety, and trust in a market where informal competition is a defining feature. The findings reinforce the relevance of the Resource-Based View and Dynamic Capabilities Theory for understanding firm performance in regulated emerging-market sectors, while also contributing empirical evidence that distribution-related dimensions function as integrated strategic capabilities rather than as separable operational activities.

The conclusions should be interpreted within the boundaries of the descriptive cross-sectional design and the self-report measurement approach used in this study. The strong statistical relationships observed are best understood as evidence of robust positive associations rather than as definitive causal estimates, and the practical recommendations that follow are framed accordingly.

5.5 Recommendations

5.5.1 Policy Recommendations

Based on the study findings, policy interventions should consider strengthening formal retail distribution structures and improving access to licensed LPG outlets. Since the study found positive associations between distribution channel structure, retail accessibility, pricing strategy, distribution compliance, and market performance, regulatory bodies such as EPRA may consider strengthening mechanisms that support structured and compliant distribution systems. Policies may further encourage expansion of licensed retail outlets into underserved and peri-urban areas to reduce dependence on informal and potentially unsafe LPG sources. Additionally, regulatory frameworks could encourage transparent pricing practices and responsible promotional approaches that emphasize safety and quality. Enhanced compliance monitoring and more standardized distributor audit procedures may further support ethical conduct and adherence to safety requirements. However, these recommendations should be interpreted within the context of the study's cross-sectional design, which examined associations at a single point in time.

5.5.2 Managerial Recommendations

Managers of licensed LPG companies should consider strengthening internal retail distribution capabilities as an important strategic area. The findings indicated positive relationships between distribution channel structure and market performance, suggesting that firms may benefit from improving coordination among company-owned outlets, exclusive dealerships, and hybrid distribution arrangements. Similarly, expanding retail coverage and improving outlet accessibility, particularly in underserved markets, may support customer reach and market presence. Firms may also consider reviewing pricing and promotional approaches to balance affordability and business sustainability while strengthening communication relating to product quality and safety. Since distribution compliance was positively associated with market performance, managers may further strengthen compliance practices through regular audits, distributor training initiatives, and ethical oversight systems. These actions may contribute toward stronger operational effectiveness and competitive positioning, although their effects may vary depending on organizational and environmental factors.

5.5.3 Theoretical Recommendations

The findings of this study provide support for the combined application of Resource-Based View and Dynamic Capability Theory in explaining market performance within the LPG sector. Beyond confirming existing theoretical assumptions, the study extends these theories by demonstrating that distribution-related dimensions such as retail accessibility and compliance practices may operate not only as operational activities but also as strategic organizational capabilities and resources. Specifically, the findings suggest that regulatory compliance and accessibility practices can be viewed as mechanisms through which firms develop and sustain competitive advantage within highly regulated environments. Future theoretical studies should therefore explore broader integration of regulatory and contextual dimensions into RBV and Dynamic Capability frameworks, particularly within emerging markets and safety-sensitive industries.

5.6 Limitations

The study adopted a descriptive cross-sectional design, which limited data collection to a single point in time. As a result, the study captured respondents' perceptions and existing relationships at a specific period without accounting for changes in market conditions over time. This may have influenced the findings by limiting the ability to observe how evolving regulatory conditions, competitive dynamics, or changes in consumer behavior affect retail distribution strategies and market performance. Additionally, the study relied primarily on self-reported perceptual data collected through structured questionnaires. Although standardized instruments and multiple managerial respondents were used to minimize bias, the use of perceptual measures may have influenced findings through common response tendencies, where respondents may have provided socially desirable responses or evaluated variables in a relatively consistent manner, potentially contributing to stronger observed relationships among variables. Furthermore, the study focused exclusively on licensed LPG firms operating in Nairobi County. Consequently, contextual factors unique to Nairobi, such as market concentration, infrastructure availability, and regulatory intensity, may have influenced the findings and may limit the direct transferability of the results to other counties or regions with different market conditions.

5.7 Suggestions for Further Research

Based on the findings and limitations of this study, several avenues for further research are recommended. Future studies could adopt a longitudinal or mixed-methods design to capture how retail distribution strategies evolve over time and to establish causal relationships with market performance. Research could also expand geographically to include other counties in Kenya or comparable urban markets in East Africa to enhance the generalizability of the findings. Additionally, exploring the perspectives of consumers, regulators, and informal LPG operators would provide a more holistic understanding of the distribution ecosystem. Further investigation into the role of digital and mobile technologies in enhancing retail accessibility and compliance, as well as the impact of macroeconomic and policy shifts on distribution strategies, would also enrich the academic and practical discourse on LPG market performance.

5.8 Chapter Summary

This chapter synthesized the study's findings, concluding that all four dimensions of retail distribution strategy, including channel structure, coverage and accessibility, pricing and promotion, and regulatory compliance, have a significant positive effect on the market performance of licensed LPG firms in Nairobi County. The discussion contextualized these results within the RBV and DCT theories. Practical recommendations were provided for policymakers and LPG managers to enhance distribution integrity and competitive advantage. The chapter also acknowledged the study's limitations, such as its cross-sectional design, and proposed directions for future research to build upon these insights.

Overall, while the study established significant relationships between retail distribution strategies and market performance among licensed LPG firms, the findings should be interpreted within the broader organizational and market context. The moderate descriptive findings suggest that although these strategies are important, firms may differ considerably in implementation effectiveness and operational capabilities. Additionally, market performance in the LPG sector is influenced by broader factors such as regulatory changes, informal market competition, economic conditions, and evolving consumer preferences that were not directly examined in this study. Therefore, the findings provide useful insight into the role of retail distribution strategies while

also highlighting the need for further research and continued examination of contextual influences that may shape performance outcomes.

REFERENCES

Adeleke, B. S., Ekoja, G. O., Agbaeze, E. K., & Eneh, N. C. (2017). The Effects of Gray Markets in the International Product Distribution Systems. *European Journal of Business and Management*(9), 2.

Adkins, E., Tyler, E., Wang, J., Siriri, D., & Modi, V. (2010). Field testing and survey evaluation of household biomass cookstoves in rural sub-Saharan Africa. *Energy for Sustainable Development, 14*(3), 172–185.

Anderson, E., Day, G. S., & Rangan, V. K. (1997). Strategic channel design. Sloan Management Review, 38(4), 59-69.

Aswale, S. (2015). Grey Market in India- Paradigm Shifts from Conventional Marketing Practices in India. *National Conference Changes in Management Practices in Global Scenario.*

Babatunde, B. O., Gbadeyan, R. A., & Bamiduro, J. A. (2016). Supply chain management practices and market performance: Evidence from selected major marketers of petroleum products in Nigeria. *The Pacific Journal of Science and Technology, 17*(1), 129–139.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120.

Barreto, I. (2010). Dynamic Capabilities: A Review of Past Research and an Agenda for the Future. *Journal of Management, 36*(1), 256–280.

Basiri, R., Abedian, M., Aghasi, S., & Dashtaali, Z. (2024). A dynamic analysis of the firms in oligopoly market structure: A case study. *Journal of Modelling in Management*.

Bleady, A., Ali, A. H., & & Ibrahim, S. B. (2018). Dynamic capabilities theory: Pinning down a shifting concept. *International Journal of Business and Management, 13*(6), 1–14.

Borden, N. H. (1964). *The concept of the marketing mix. Journal of Advertising Research, 4(2)*, 2-7.

Bowen, L. C. (2016). Response Strategies Adopted by Marketing Firms of the Liquefied Petroleum Gas Market [PhD Thesis, University of Nairobi].

Business Daily. (2019). *Illegal trade thriving in spite of crackdown on LPG black market*. Retrieved from Business Daily: https://www.businessdailyafrica.com/bd/news/illegal-trade-thriving-in-spite-of-crackdown-on-lpg-black-market-2264462

Cavusgil, S. T., Seggie, S. H., & Talay, M. B. (2007). Dynamic capabilities view: Foundations and research agenda. *The Journal of Marketing Theory and Practice, 15*(2), 159–166.

Chege, S. M. (2013). Strategies adopted by Liquified Petroleum Gas (LPG) companies to deal with the challenge of cross-filling activities in Kenya [PhD Thesis, University of Nairobi,].

Chilet, J. A. (2017). *Collusive price leadership in retail pharmacies in Chile.* Retrieved from The Hebrew University of Jerusalem: https://economics.huji.ac.il/sites/default/files/economics/files/khvrkhh.pdf

Chumphong, O., Srimai, S., & Potipiroon, W. (2020). The resource-based view, dynamic capabilities and SME performance for SMEs to become smart enterprises. *ABAC ODI Journal Vision. Action. Outcome, 7*(2), 129.

Clark, R., & Houde, J.-F. (2013). Collusion with Asymmetric Retailers: Evidence from a Gasoline Price-Fixing Case. *American Economic Journal: Microeconomics, 5*(3), 97–123.

Coughlan, A. T., Anderson, E., Stern, L. W., & El-Ansary, A. I. (2006). *Marketing channels (7th ed.)*. Upper Saddle River, NJ: Pearson Prentice Hall.

Crane, A., & & Matten, D. (2016). *Business ethics: Managing corporate citizenship and sustainability in the age of globalization* (4th ed. ed.). Oxford University Press.

Deephouse, D. L., Bundy, J., Tost, L. P., & Suchman, M. C. (2017). *Organizational legitimacy: Six key questions*. In R. Greenwood, C. Oliver, T. B. Lawrence, & R. E. Meyer (Eds.), The SAGE handbook of organizational institutionalism (2nd ed., pp. 27-54). London: SAGE Publications.

EPRA. (2020). *Energy and Petroleum Statistics Report. .* Energy and Petroleum Regulatory Board.

EPRA. (2023). *Bi-Annual Energy and Petroleum Statistics Report. .* Energy and Petroleum Regulatory Board.

Ferreira, J., & Coelho, A. (2017). Dynamic capabilities, managerial and marketing capabilities and their impact on the competitive advantage and firm performance. *International Journal of Entrepreneurship and Small Business, 30*(4), 629.

Freeman, R. E., Dmytriyev, S. D., & Phillips, R. A. (2021). Stakeholder theory and the resource-based view of the firm. *Journal of Management, 47*(7), 1757–1770.

George Williams, L. (2022). George Williams, L. (2022). Effects Of Illegal Refilling or Counterfeiting of Liquidated Petroleum Gas on the Sales of Oil Marketing Companies In Uganda [PhD Thesis, Institute of Petroleum Studies-Kampala].

Gremme, K.-M., & Wohlgemuth, V. (2017). Dynamic capabilities: A systematic literature review of theory and practice. *European Journal of Management Issues, 25*(1), 30–35. Retrieved from https://doi.org/10.15421/191705

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). Harlow, Essex: Pearson Education Limited.

ISHAYA, S., & DANIEL, S. M. (2024). Implication Of The Use Of Fake And Adulterated Lubricants For Consumers In Northeast Nigeria. *International Journal of African Sustainable Development Research.*

Kaplan, R. S., & Norton, D. P. (1992). T*he Balanced Scorecard: Measures that drive performance.* Harvard Business Review, 70(1), 71-79.

Kaplan, R. S., & Norton, D. P. (1996). *The Balanced Scorecard: Translating strategy into action.* Boston, MA: Harvard Business School Press.

Kariuki, P. K., & Karihe, J. (2023). Competitive Strategies and Performance of Liquefied Petroleum Gas (LPG) Companies in Nairobi City County, Kenya. *Journal of International Business, Innovation and Strategic Management, 7*(2), 31–47.

Kim, S.-H., Lan, H., & Dobson, P. W. (2021). Identifying price-leadership structures in oligopoly. *Oxford Economic Papers, 73*(1), 350–370.

Kim, S.-H., Lan, H., & Dobson, P. W. (2021). Identifying price-leadership structures in oligopoly. *Oxford Economic Papers, 73*(1), 350–370.

KIPPRA. (2021). *Kenya Economic Report 2021: Kenya in COVID-19 Era: Fast-Tracking Recovery and Delivery of the "Big Four" Agenda.* Kenya Institute for Public Policy Research and Analysis. Retrieved from https://repository.kippra.or.ke/handle/123456789/2088

Kiruja, E. K. (2021). Influence of Human Resource Information System on the Performance of Oil and Gas Companies in Kenya. *International Journal of Management Studies and Social Science Research, 3*(4).

Kothari, C. R. (2014). *Research methodology: Methods and techniques* (3rd ed. ed.). New Age International Publishers.

Kotler, P., & Keller, K. L. (2009). *Marketing Management* (13th ed ed.). Pearson Education.

Krasnikov, A., & Jayachandran, S. (2008). T*he relative impact of marketing, research-and-development, and operations capabilities on firm performance.* Journal of Marketing, 72(4), 1-11C. R. (2014). *Research methodology: Methods and techniques* (3rd ed. ed.). New Age International Publishers.

Levy, M., Weitz, B. A., & Grewal, D. (2009). *Retailing* (8th ed. ed.). McGraw-Hill/Irwin.

Lewis, M. S. (2012). Price leadership and coordination in retail gasoline markets with price cycles. *International Journal of Industrial Organization, 30*(4), 342–351.

MacKenzie, S. b., & Podsakoff, P. M. (2012). *Common method bias in marketing: Causes, mechanisms, and procedural remedies.* Journal of Retailing, 88(4), 542-555.

Malik, A. (2021). *Gas and petroleum market structure and pricing.* Pakistan Institute of Development Economics. Retrieved from Pakistan Institute of Development Economics.

Manneh, M. (2020). Retail marketing of imported petroleum products: Evidence from the downstream petroleum sector of the Gambia. *European Journal of Business and Management Research, 5*(4).

Morgan, N. A., Vorhies, D. W., & Mason, C. H. (2009). *Market orientation, marketing capabilities, and firm performance*. Strategic Management Journal, 30(8), 909-920.

Mungai, J., & Wanyoike, D. (2015). Effects of pricing strategies on performance of oil marketing firms in Kenya. *International Journal of Economics, Commerce and Management, 3*(9), 456-472.

Mutinda, J., Mwangi, J., & Wekesa, S. (2022). Retail network expansion and service delivery in Kenya's downstream petroleum sector. *East African Journal of Business and Economics, 4*(1), 55-68.

Mwangi, J., & Muli, M. (2017). Kurrent Technologies: Providing Complete Energy Solutions. *The African Business Journal*.

Neely, A., Adams, C., & Kennerley, M. (2002). *The performance prism: The scorecard for measuring and managing business success.* London: Financial Times Prentice Hall.

Ngei, N. M., & Kihara, A. (2017). Influence of Inventory Management Systems on Performance of Gas Manufacturing Firms in Nairobi City County, Kenya. *International Journal of Business & Law Research, 5*(2), 21–39.

Ngure, E. W. (2019). Effect of Project Scope Management Practices on Performance of Liquefied Petroleum Gas Firms in Kenya (Master's thesis). University of Nairobi.

Njiru, C. (2024). Effect of competitive strategies on the performance of liquefied petroleum gas companies in Nairobi County, Kenya [Masters of Business Administration]. Strathmore University.

Nyachomba, J., & Achuora, J. (2022). Determinants of Green Supply Chain Management Practices on Performance of Gas Manufacturing Firms in Kenya. *International Journal of Supply Chain and Logistics, 6*(1), 33–57.

Nzioki, P. N. (2023). Nzioki, P. N. (2023). Effects of Price Regulation on the Financial Performance of Petroleum Sector Firms in Kenya: A Case Study of Total Kenya Ltd. [PhD Thesis]. University of Nairobi.

Ochie, C., Nyuur, R. B., Ludwig, G., & Cunningham, J. A. (2022). Dynamic capabilities and organizational ambidexterity: New strategies from emerging market multinational enterprises in Nigeria. *Thunderbird International Business Review, 64*(5), 493–509.

Ogbonna, A., & Chukwuemeka, L. (2024). Liquified Natural Gas (Lng) Downstream marketing and business growth in Nigeria: An empirical evidence small and meduim scale enterprises. *Journal of Management and Science, 14*(2), 39–49.

Oluwasanmi, O., & Ogunro, V. (2021). Unethical Marketing Practices and Emerging Consumerism in the Downstream Sector of the Nigerian Petroleum Industry (A Study of Bovas & Company Limited). *Journal of Management and Social Sciences, 10*(2).

Omondi, A., & Kamau, B. (2021). Distribution channel effectiveness and competitive positioning of energy firms in Nairobi. *African Journal of Strategic Management, 8*(2), 23–34.

Penrose, E. T. (1959). *The Theory of the Growth of the Firm.* Oxford University Press.

PIEA. (2024). *Beware your LPG cylinder could be unsafe.* Retrieved from Petroleum Institute of East Africa: https://www.petroleum.co.ke/media-centre/press-releases/18-beware-your-lpg-cylinder-could-be-unsafe

PIEA. (2024). *Petroleum Insight: LPG Shaping Africa Energy Transition. 2nd Quarter(April-June 2024).* Nairobi: Petroleum Institute of East Africa.

Pisano, G. P. (2015). A normative theory of dynamic capabilities: Connecting strategy, know-how, and competition. *Harvard Business School Working Paper*, No. 16-036.

Ployhart, R. E. (2021). Resources for What? Understanding Performance in the Resource-Based View and Strategic Human Capital Resource Literatures. *Journal of Management, 47*(7), 1771–1786.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). *Common method biases in behavioral research: A critical review of the literature and recommended remedies.* Journal of Applied Psychology, 88(5), 879-903.

Rao, S., Dahal, S., Hadingham, S., & Kumar, P. (2020). Dissemination Challenges of Liquefied Petroleum Gas in Rural India: Perspectives from the Field. *Sustainability, 12*(6).

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). *Measuring organizational performance: Towards methodological best practice.* Journal of Management, 35(3), 718-804.

Rosebloom, B. (2012). *Marketing channels: A management view* (8th ed.). Mason, OH: South-Western Cengage Learning.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed ed.). Pearson Education Limited.

Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Shupler, M. e. (2021). Modelling of supply and demand-side determinants of liquefied petroleum gas consumption in peri-urban Cameroon, Ghana and Kenya. *Nature Energy, 6*(12), 1198–1210.

Srivastava, R. K., Fahey, L., & Christensen, H. K. (2001). The resource-based view and marketing: The role of market-based assets in gaining competitive advantage. *Journal of Management, 27*(6), 777-802.

Suchman, M. C. (1995). *Managing legitimacy: Strategic and institutional approaches.* Academy of Management Review, 20(3), 571-610.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53–55.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319–1350.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 509-533.

Tveito, A. (2020). *The Costs and Benefits of Price Leadership-Evidence from Retail Gasoline.* Social Science Research Network.

Udu, K. A. (2024). Liquified Natural Gas (Lng) Downstream Marketing And Business Growth In Nigeria. *Nigerian Journal of Management Sciences, 25*(1b).

UNDP. (2021). *No time to waste: Pathways to deliver clean cooking for all.* Retrieved from United Nations Development Programme: https://www.undp.org/publications/no-time-waste-pathways-deliver-clean-cooking-all

van den Berg, I. C. (2018). *Kenya's Strategy to Make Liquefied Petroleum Gas the Nation's Primary Cooking Fuel.* World Bank.

Varadarajan, R. (2020). Customer information resources advantage, marketing strategy and business performance: A market resources based view. *Industrial Marketing Management, 89*, 89–97.

Vorhies, D. W., & Morgan, N. A. (2005). *Benchmarking marketing capabilities for sustained competitive advantage*. Journal of Marketing, 69(1), 80-94.

Wan, X., Chen, J., & Li, W. (2023). The impact of retail pricing leadership under manufacturer encroachment. *European Journal of Operational Research, 310*(1), 217–237.

Wang, Y., Lin, J., & Choi, T.-M. (2020). Gray market and counterfeiting in supply chains. *Transportation Research Part E: Logistics and Transportation Review, 133*(101823).

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal, 5*(2), 171–180.

William, K. J., & Joyce, G. (2020). An Examination of how Pricing Strategy Affects Performance of Oil Marketing Companies in Kenya. *Journal of Marketing and Communication, 3*(2), 19–33.

World Bank. (2022). *Clean Cooking: Transition and Inclusion in Sub-Saharan Africa.* Washington, DC: World Bank Publications.

APPENDICES

Appendix I: Participant Information Sheet and Consent Form

TITLE: EFFECT OF RETAIL DISTRIBUTION STRATEGIES ON THE MARKET PERFORMANCE OF LICENSED LIQUEFIED PETROLEUM GAS COMPANIES IN NAIROBI COUNTY, KENYA

SECTION 1: INFORMATION SHEET

1.0: **Investigator**: Sandra Gikundi

Institutional Affiliation: Strathmore University Business School

SECTION 2: INFORMATION SHEET–THE STUDY

2.1: Why is this study being carried out?

This research investigates how retail distribution strategies including distribution channel structure, retail coverage, pricing practices, and regulatory compliance, affect the market performance of licensed LPG companies in Nairobi County. The findings will inform strategies to improve service delivery, competitive positioning, and regulatory adherence in Kenya's LPG sector.

2.2: Do I have to take part?

No. Your participation is entirely voluntary. You may withdraw at any time without penalty or explanation.

If you decide to take part, you will be asked to complete a questionnaire to get information on the effect of retail distribution strategies on the market performance of licensed LPG brand owners in Nairobi County. If you are not able to answer all the questions successfully the first time, you may be asked to sit through another informational session after which you may be asked to answer the

questions a second time. You are free to decline to take part in the study from this study at any time without giving any reasons.

2.3: Who is eligible to take part in this study?

The population for this study includes employees of licensed LPG brand owners operating in Nairobi County who are directly involved in strategic or operational roles related to distribution, compliance, marketing, or retail management.

2.4: Who is not eligible to take part in this study?

- Employees of unlicensed LPG distributors
- Employees of LPG companies outside Nairobi County
- Employees not involved in strategic or operational roles related to LPG distribution or retail management

2.5: What will taking part in this study involve for me?

If you decide to participate:

- You will be approached by the researcher, Sandra Gikundi, and asked to complete a structured questionnaire that will take approximately 10 to 15 minutes of your time.
- The questionnaire will focus on your experiences and perspectives regarding retail distribution strategies and market performance.
- No further engagement beyond completing the questionnaire is required.

2.6: Are there any risks or dangers in taking part in this study?

There are no known risks associated with participating in this study. All information provided will remain confidential and will not be shared without your express permission.

2.7: Are there any benefits of taking part in this study?

While there may be no direct personal benefits from participating, your input will:

- Contribute valuable insights into improving LPG distribution systems
- Support better policymaking

- Promote fair competition and safety within Kenya's LPG sector.

2.8: What will happen to me if I refuse to take part in this study?

Participation is entirely voluntary. If you choose not to participate or decide later to withdraw from the study, there will be no consequences or need for explanation.

2.9: Who will have access to my information during this research?

All research records will be stored in securely locked cabinets. That information may be transcribed into our database, but this will be sufficiently encrypted and password protected accessible only by authorized personnel directly involved in this research project. All your information will be kept confidential.

2.10: Who can I contact in case I have further questions?

For questions or clarifications about the study, please contact:

- **Sandra Gikundi (Researcher)**: Telephone: 0722775145 Email: Sandra.Gikundi@strathmore.edu
- **Dr. James Ndegwa (Supervisor)**: Telephone: 0703034300 | Email: james.ndegwa@strathmore.edu

For independent concerns about the research process, please contact:

- **The Secretary – Strathmore University Institutional Ethics Review Board (SU-ISERC)**: P.O BOX 59857-00200 Nairobi | Email: ethicsreview@strathmore.edu | Tel: 0703 034418

CONSENT FORM

I …… have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

☐ I AGREE to take part in this research

☐ I DON'T AGREE to take part in this research

Storage of information on the completed questionnaire:

☐ I DO AGREE to have my completed questionnaire stored for future data analysis

☐ I DON'T AGREE to have my completed questionnaire stored for future data analysis

Participant's Signature: …… Date: /……. /……/……

Participant's Name: …… Time: ……. / ……..

I, …… certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that

s/he has understood the nature and the purpose of the study and consents to the participation in the

study. S/he has been given the opportunity to ask questions which have been answered satisfactorily.

Investigator's Signature: …….. Date: ……. / ……. / ……

Investigator's Name: …… Time: ……. / ……

Appendix II: Ethical Approval and NACOSTI License

Strathmore UNIVERSITY

15th May 2025

Ms Gikundi Sandra,
sandra.gikundi@strathmore.edu

Dear Ms Gikundi,

RE: Effect of Retail Distribution Strategies on the Market Performance of Liquefied Petroleum Gas Companies in Nairobi County, Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-Masters** proposal. Your application reference number is **SU-ISERC2864/25.** The approval period is from **15th May 2025 to 14th May 2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, 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 affected 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

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **899707**

Date of Issue: **08/April/2025**

RESEARCH LICENSE



This is to Certify that Ms.. Sandra Gikundi 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 RETAIL DISTRIBUTION STRATEGIES ON THE MARKET PERFORMANCE OF LIQUIFIED PETROLEUM GAS COMPANIES IN NAIROBI COUNTY, KENYA for the period ending : 08/April/2026.

License No: **NACOSTI/P/25/418077**

899707

Applicant Identification Number

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 III: Questionnaire

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. What is your age bracket?
   ( ) Under 30 ( ) 31–40 ( ) 41–50 ( ) 51 and above

2. How many years of experience do you have in the LPG industry?
   ( ) Less than 5 years ( ) 5–10 years ( ) 11–15 years ( ) More than 15 years

3. What is your current managerial position?
   ( ) General Manager ( ) Operations Manager ( ) Commercial Manager ( ) Marketing Manager
   ( ) Compliance Manager ( ) Distribution Manager ( ) Other (specify): _____

4. How would you classify the size of your company?
   ( ) Small ( ) Medium ( ) Large

5. How long have you been in your current managerial role?
   ( ) Less than 2 years ( ) 2–5 years ( ) 6–10 years ( ) More than 10 years

SECTION B: DISTRIBUTION CHANNEL STRUCTURE

Please indicate your level of agreement with the following statements regarding the distribution channel structure in your organization. Use the scale:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
Our distribution channels effectively reach all target market segments.					
The use of company-owned retail outlets has improved brand consistency and trust.					

Exclusive dealership arrangements contribute positively to customer satisfaction.					
Third-party retailers maintain high standards of product handling and safety.					
Our hybrid distribution model (combination of channels) effectively balances cost efficiency and customer service.					

SECTION C: RETAIL COVERAGE AND ACCESSIBILITY

Please indicate your level of agreement with the following statements regarding retail coverage and accessibility:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
Our company has sufficient retail outlets to cover key urban and peri-urban markets.					
Customers can easily access our LPG products through conveniently located retail points.					
Mobile and digital LPG ordering significantly improves our market reach.					
Expansion into underserved areas has notably increased our market share.					
Our distribution network effectively ensures product availability and refill convenience.					

SECTION D: PRICING AND PROMOTION PRACTICES

Please indicate your level of agreement with the following statements regarding pricing and promotional activities:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
Our pricing strategies effectively balance affordability and profitability.					
Strategic promotional activities (advertising, discounts, loyalty programs) have increased our customer base.					
Our pricing strategies enable us to compete effectively with informal market operators.					
Customers perceive our promotional messages clearly regarding product safety and quality.					
Our promotional efforts clearly differentiate our brand from competitors.					

SECTION E: COMPLIANCE WITH REGULATORY AND ETHICAL STANDARDS

Please indicate your level of agreement with the following statements regarding regulatory compliance and ethical practices:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
Strict compliance with LPG safety standards is integral to our distribution strategy.					

Our company regularly audits distributors for adherence to ethical standards					
Compliance with regulatory guidelines significantly enhances our brand reputation.					
Ethical marketing practices positively influence customer loyalty and trust.					
Regulatory compliance reduces operational risks and improves overall firm performance.					

SECTION F: MARKET PERFORMANCE

Please indicate your level of agreement with the following statements regarding your company's market performance:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
Our company has experienced consistent growth in market share over the past year.					
Customer satisfaction ratings consistently indicate high levels of service quality.					
Our profitability has improved as a direct result of effective distribution strategies.					
The company's market position remains strong despite competitive pressures.					
Operational efficiency, particularly in product distribution, has significantly improved our market performance.					

Appendix IV: Sampling Frame – List of LPG Company Brand Owners

No.	Company	No.	Company
1	AFRICAN GAS AND OIL COMPANY LIMITED	35	Kendal Energy Solutions Limited
2	ALFA GAS LIMITED	36	KERRY GAS LIMITED
3	Baraka Gas Ltd	37	LUQMAN PETROLEUM LIMITED
4	BASH GAS LIMITED	38	LUWARIS SUPPLIERS LIMITED
5	BOC Kenya Limited	39	Max Gas and Petroleum Company Limited
6	Calidad Energy Limited	40	Milele Gas Limited
7	Chev Energies Limited	41	MO GAS SUPPLIERS LIMITED
8	CITY GAS LIMITED	42	Multienegy Ltd
9	COSMO GAS LIMITED	43	MURIMI INVESTMENT COMPANY LIMITED
10	COUNTRY CHOICE GAS LIMITED	44	NEP ENERGY LIMITED
11	CRESCENT ENERGY LIMITED	45	Nuru Hauliers Limited
12	Daima Gas Limited	46	OCEAN GAS LIMITED
13	DEPAR LIMITED	47	OLA ENERGY KENYA LIMITED
14	EASI COOKING GAS LIMITED	48	Outdoor Gas Limited
15	Eco-Energy East Africa Limited	49	Oxxenergy Limited
16	Energy Horizons	50	POINTS MERCHANTS LIMITED
17	EUREKA ENERGY LIMITED	51	PROTO ENERGY LIMITED
18	EXCELLENT LOGISTICS LTD	52	RIFT GAS LIMITED
19	EXTRA GAS LIMITED	53	RIHAL ENERGY COMPANY LIMITED
20	FAHARI GAS LIMITED,,	54	ROYALGAS AND ENERGY LIMITED
21	Garnet Energy Limited	55	Rubis Energy Kenya PLC
22	Gas and Lubricants Trading Kenya Limited	56	SALAMA GAS LIMITED
23	GEOGAS KENYA LIMITED	57	Servanthood and Light Development Foundation
24	GICOMU GAS LIMITED	58	Sisi Gas Limited
25	GREAT LAKES COMMODITIES LIMITED	59	SMART GAS ENERGY LIMITED
26	GREEN ENERGY LIMITED	60	swift energy distributors limited
27	Green Gas Company Limited	61	SYZO INTERNATIONAL LIMITED
28	GREEN WELLS ENERGIES LIMITED	62	TAJIRI GAS LIMITED
29	GULF ENERGY HOLDINGS LIMITED	63	TANGA ENERGY SOLUTIONS LIMITED
30	Hass Petroleum Kenya Limited	64	TANGA LOGISTICS LIMITED
31	HAZINA ENERGY SOLUTION LIMITED	65	TAYO GAS LIMITED
32	INSTAGAS LIMITED	66	Tezo energy limited
33	JAVAGAS SUPPLIERS LIMITED	67	TOPLINE TRADERS LTD
34	Kaka Gas Limited	68	TOTALENERGIES MARKETING KENYA PLC

No.	Company
69	TRIBE ENERGY LIMITED
70	Tropix Gas Limited
71	UNIGAS KENYA LIMITED
72	Viji fillings limited
73	Vision Energy East Africa Limited
74	Vivo Energy Kenya Limited
75	WAYMAX SUPPLIERS LIMITED
76	Widan Energy Ltd
77	ZEMU INVESTMENTS LIMITED