

**STRATEGIC CAPABILITIES AND PERFORMANCE OF
PHARMACEUTICAL COMPANIES IN KENYA**

MESHACK OWIRA OKOK

**DOCTOR OF PHILOSOPHY IN
BUSINESS ADMINISTRATION**

(Strategic Management)

**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY**

2026

**Strategic Capabilities and Performance of Pharmaceutical
Companies in Kenya**

Meshack Owira Okok

**A Thesis Submitted in Partial Fulfillment of the Requirement for
the degree of Doctor of Philosophy in Business Administration
(Strategic Management Option) of the Jomo Kenyatta University of
Agriculture and Technology**

2026

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature Date

Meshack Owira Okok

This thesis has been submitted for examination with our approval as the University Supervisors:

Signature Date

Dr. Jared Deya, PhD

JKUAT, Kenya

Signature Date

Dr. Gladys Rotich, PhD

JKUAT, Kenya

DEDICATION

I dedicate this research project to my mother, Rhoda who gave me the foundation in life and as well her continued guidance and prayers. As much as she only went to school up to standard Four, she never shied from encouraging me to further my education.

ACKNOWLEDGEMENT

I wish to thank the Almighty God for guiding me throughout this project. It could have been impossible without you. I also wish to give sincere gratitude and thanks to my project supervisors Dr. Jared Deya, and Dr. Gladys Rotich for the tireless guidance and patience throughout the project. Your timely corrections and the immense dedications will forever remain as good memory in my academic journey. I wish to acknowledge my family for being beside me all the way. Your support and encouragement have seen me this far.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	xii
LIST OF FIGURES	xiv
LIST OF APPENDICES	xv
ACRONYMS AND ABBREVIATIONS	xvi
DEFINITION OF OPERATIONAL TERMS.....	xvii
ABSTRACT	xx
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study	1
1.1.1 Strategic Capabilities of Pharmaceutical Companies	3
1.1.2 Performance of Pharmaceutical Companies	9
1.1.3 Pharmaceutical Companies in Kenya.....	11
1.1.4 Firm Characteristics	12
1.2 Statement of the Problem	12
1.3 Objectives of the Study	13
1.3.1 Specific Objectives.....	13
1.4 Research Hypotheses	14

1.5 Significance of the Study	14
1.5.1 Management of Pharmaceutical Firms.....	15
1.5.2 Government and Policy Makers.....	15
1.5.3 Future Scholars and Researchers	15
1.6 Scope of the Study	16
1.7 Limitations of the Study.....	17
CHAPTER TWO	18
LITERATURE REVIEW.....	18
2.1 Introduction	18
2.2 Theoretical Review	18
2.2.1 The Innovation Diffusion Theory	19
2.2.2 Knowledge Based Theory	20
2.2.3 Porters Competitive Theory	21
2.2.4 Dynamic Capabilities Theory	23
2.3 Conceptual Framework	25
2.3.1 Technological Capability	27
2.3.2 Marketing Capability	30
2.3.3 Dynamic Capability	32
2.3.4 Human Resource Capability	36
2.3.5 Firm Characteristics	37

2.3.6 Performance of Pharmaceutical Companies	38
2.4 Empirical Literature	40
2.4.1 Technological Capability and Firm Performance	40
2.4.2 Marketing Capability and Firm Performance	45
2.4.3 Dynamic Capability and Firm Performance	47
2.4.4 Human Resource Capability and Firm Performance	50
2.4.5 Firm Characteristics and Firm Performance	53
2.5 Critique of Reviewed Literature.....	56
2.6 Research Gap	57
2.7 Summary	60
CHAPTER THREE	62
RESEARCH METHODOLOGY	62
3.1 Introduction	62
3.2 Research Philosophy	62
3.3 Research Design.....	63
3.4 Target Population	64
3.5 Sampling Technique.....	64
3.6 Data Collection Method	66
3.6.1 Data Collection Procedure	67
3.7 Pilot Study.....	68

3.7.1 Validity of Research Instrument	68
3.7.2 Reliability of Research Instrument.....	69
3.8 Data Analysis and Presentation.....	69
3.9 Diagnostic Test.....	70
3.9.1 Test for Heteroscedasticity.....	70
3.9.2 Test for Multicollinearity	70
3.9.3 Test for Normality.....	71
3.9.4 Test for Autocorrelation.....	71
3.9.5 Linearity Test	71
3.10 The Study Model.....	72
3.10.1 Operationalization and Measurement of Variables.....	73
CHAPTER FOUR.....	75
FINDINGS AND DISCUSSIONS.....	75
4.1 Introduction	75
4.2 Response Rate of the Research Instrument.....	75
4.3 Results of the Pilot Study	75
4.3.1 Reliability and Validity	76
4.3.2 Validity Test.....	77
4.4 Analysis of the Demographic Data	83
4.4.1: Organization Type.....	83

4.4.2 Gender	84
4.4.3 Number of Years at the Organization	84
4.4.4 Number of Years Worked at the Position in the Organization	85
4.5 Diagnostic Tests	87
4.5.1 Test for Heteroscedasticity	87
4.5.2 Test for Multicollinearity	88
4.5.3 Test for Normality	89
4.5.4 Test for Autocorrelation	90
4.5.5 Linearity Test	91
4.6 Descriptive Statistics	91
4.6.1 Influence of Technological Capability on Firm Performance	91
4.6.2 Influence of Marketing Capability on Firm Performance	94
4.6.3 Influence of Dynamic Capability on Firm Performance	97
4.6.4 Influence of Human Resource Capability on Firm Performance	101
4.6.5 Firm Characteristics	104
4.6.6 Firm Performance	106
4.7 Inferential Statistics	109
4.7.1 Correlation Analysis	109
4.7.2 Regression Analysis	112

CHAPTER FIVE.....	130
SUMMARY, CONCLUSIONS AND RECCOMENDATIONS	130
5.1 Introduction	130
5.2 Summary of Major Findings	130
5.2.1 Technological Capability and Firm Performance	131
5.2.2 Marketing Capability and Firm Performance	132
5.2.3 Dynamic Capability and Firm Performance	133
5.2.4 Human Resource Capability and Firm Performance	134
5.2.5 Firm Characteristics and Firm Performance	135
5.3 Conclusion	136
5.3.1 Technological Capability	136
5.3.2 Marketing Capability	136
5.3.3 Dynamic Capability	136
5.3.4 Human Resource Capability	137
5.3.5 Firm Characteristics	138
5.3.6 Firm Performance.....	138
5.4 Recommendations	138
5.4.1 Technological Capability	138
5.4.2 Marketing Capability	138
5.4.3 Dynamic Capability	139

5.4.4 Human Resource Capability	140
5.4.5 Firm Characteristics	140
5.5 Areas for Further Research	140
5.6 Study Contribution to the Body of Literature	141
REFERENCES.....	143
APPENDICES	166

LIST OF TABLES

Table 3.1: Target Population.....	64
Table 3.2: Sample Size.....	66
Table 3.3: Operationalization and Measurement of Variables.....	74
Table 4.1: Response Rate	75
Table 4.2: Pilot Reliability Results	76
Table 4.3: Pilot Validity Test	77
Table 4.4: Pilot Factor-loading- Dynamic capability.....	78
Table 4.5: Pilot Factor-loading- Marketing Capability	79
Table 4.6: Pilot Factor-loading- Technological Capabilities	80
Table 4.7: Pilot Factor-loading- Human Resource Capability.....	81
Table 4.8: Pilot Factor-loading- Firms Characteristics	81
Table 4.9: Pilot Factor-loading- Performance	82
Table 4.11: Recommended Adjustments	82
Table 4.12: Number of Respondents in Different Positions	85
Table 4.13: Years in Operation	86
Table 4.14: Market Supplies Network	87
Table 4.15: Heteroscedasticity Test	88
Table 4.16: Multicollinearity Test.....	88
Table 4.17: Normality Test	89

Table 4.18: Autocorrelation Results.....	90
Table 4.19: Technological Capability	92
Table 4.20: Marketing Capability	95
Table 4.21: Dynamic Capability	98
Table 4.22: Human resource Capability.....	102
Table 4.23: Firm Characteristics	104
Table 4.24: Firm Performance	107
Table 4.25: Correlation Analysis	109
Table 4.26: Regression Analysis- Technological Capability	112
Table 4.27: Regression Analysis- Marketing Capability	114
Table 4.28: Regression Analysis- Dynamic Capability	116
Table 4.29: Regression Analysis- Human Resource.....	119
Table 4.30: Regression Analysis- Firm Characteristics	121
Table 4.31: Regression Analysis before Moderation.....	123
Table 4.32: Overall Moderator Test.....	126
Table 4.33: Regression Analysis after Moderation.....	128

LIST OF FIGURES

Figure 2.1: Conceptual Framework	27
Figure 4.1: Organization Type	83
Figure 4.2: Gender	84
Figure 4.3: Number of Years at the Organization.....	85
Figure 4.4: Number of Years Worked at the Position in the Organization.....	86
Figure 4.5: Scatter Plot for Linearity	91

LIST OF APPENDICES

Appendix I: Questionnaire.....	166
Appendix II: List Of Pharmaceutical Companies In Kenya.....	174
Appendix III: Nacosti Permit	188

ACRONYMS AND ABBREVIATIONS

APA	American Psychology Association
CME	Continuous Medical Education
COMESA	Common Market for Eastern and Southern Africa
DDW	Digestive Disease Week
EAC	East African Community
ERS	European Respiratory Society
ESC	European Society of Cardiology
ICT	Information Communication and Technology
KNBS	Kenya National Bureau of Statistics
MNC	Multinational Corporations
NACOSTI	National Commission for Science, Technology and Innovation
PPB	Pharmacy and Poisons Board
SME	Small and Medium Size Enterprises
SPSS	Statistical Package for Social Sciences
TQM	Total Quality Management
UK	United Kingdom
UNIDO	United Nations Industrial Development

DEFINITION OF OPERATIONAL TERMS

Firm characteristics	These are the observable organizational attributes of a pharmaceutical company that may influence its operations and moderate the relationship between strategic capabilities and performance (Ezechukwu & Amahalu, 2017). In this study, the indicators include size, top management structure and capital.
Human Resource capability	This refers to the ability of a pharmaceutical company to attract, develop, deploy, and retain employees in a manner that supports organizational objectives and improves performance (Morash, 2012). The focused indicators include staff development, innovation and learning.
Marketing Capability	This is the ability of a pharmaceutical company to understand market needs, position its products effectively, manage distribution channels, and build strong customer and brand relationships (Singh, Manrai, 2015). The identified indicators include selling markets (regional, national, international), customer order fulfillment, sales integration and capitalization of brand assets.
Dynamic capability	Dynamic capability refers to the ability of a pharmaceutical company to sense changes in the external environment, seize emerging opportunities, and reconfigure internal and external resources in response to changing market, technological, regulatory, and competitive conditions. In this study, dynamic capability is measured through environmental scanning, opportunity identification, strategic responsiveness, resource reconfiguration, process

renewal, and adaptation to regulatory and market changes. Dynamic capability is important because firms operating in turbulent environments require more than ordinary operational routines; they require the ability to renew their resource base and realign their strategies as conditions change (Teece, 2018; Schilke et al., 2018; Kump et al., 2019).

Performance

Performance refers to the extent to which a pharmaceutical company achieves its intended market and financial outcomes over a given period (Schwepker & Schultz, 2015). The indicators identified include market share, return on investment and customer complaints.

Technological Capability

This is the ability of a pharmaceutical company to acquire, use, improve, and apply technology in its products, processes, and operations in order to enhance efficiency and competitiveness (Terjesen, Patel & Covin, 2011). In this study technological capabilities were a measure by how the employees in the pharmaceutical companies are competent in using technical functions to perform their duties. The indicators identified include business processes technology, product design upgrade, product performance upgrade, changes in product design, changes in production process and changes in product features.

Strategic capabilities

Strategic capabilities refer to the organization's internal abilities, competencies, and processes that enable it to deploy resources effectively in pursuit of sustained competitive advantage and improved

performance (Schwepker & Schultz, 2015). In this study, the indicators include technological capability, marketing capability, dynamic capability and human resource capability. The strategic capabilities constitute a firm's strengths and weaknesses, and be a source of competitive advantage or disadvantage over its rivals.

ABSTRACT

The pharmaceutical industry in Kenya operates in an environment characterized by rising competition, regulatory pressure, and rapid market changes, all of which require firms to develop capabilities that support sustained performance. This study examined the influence of strategic capabilities on the performance of pharmaceutical companies in Kenya, with firm characteristics considered as a moderating variable. The study was informed by the Innovation Diffusion Theory, Knowledge-Based Theory, Porter's Competitive Theory, and Dynamic Capabilities Theory. Specifically, the study assessed the influence of technological capability, marketing capability, dynamic capability, and human resource capability on firm performance. The study adopted a descriptive research design. The target population comprised 415 pharmaceutical companies operating in Kenya, including manufacturers and distributors. A stratified random sample of 103 respondents was selected. Primary and secondary data were collected using a structured questionnaire, and the data were analyzed using SPSS version 24. Descriptive and inferential statistics were used to examine the relationship between strategic capabilities and firm performance. The findings revealed that technological capability had a positive and significant association with firm performance ($r = 0.685$, $p = 0.000$). Marketing capability was also positively and significantly associated with firm performance ($r = 0.608$, $p = 0.000$). In addition, dynamic capability showed a positive and significant association with firm performance ($r = 0.653$, $p = 0.000$), while human resource capability was positively and significantly associated with firm performance ($r = 0.624$, $p = 0.000$). The four strategic capabilities jointly explained 53.4% of the variation in firm performance. After introducing firm characteristics as a moderating variable, the coefficient of determination increased from 53.4% to 56.0%, indicating that firm characteristics strengthened the relationship between strategic capabilities and performance. The study concludes that strategic capabilities are important drivers of the performance of pharmaceutical companies in Kenya and that firm characteristics play a meaningful moderating role in this relationship. The findings provide useful evidence for managers, policy makers, and scholars seeking to strengthen organizational performance in the Kenyan pharmaceutical sector.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Strategic capabilities refer to the firm-level abilities through which organizations build, integrate, and reconfigure resources in response to changing competitive, technological, and institutional environments. Recent capabilities research shows that superior performance does not arise merely from possessing resources, but from the ability to align those resources with market conditions, organizational processes, and strategic intent. In this sense, strategic capabilities help firms sense environmental shifts, seize emerging opportunities, and reconfigure internal competences in ways that sustain performance over time (Brock & Hitt, 2024). Recent meta-analytic evidence also confirms that technological capability is positively associated with firm performance, although the strength of the relationship differs across sectors and contexts, reinforcing the need for industry-specific inquiry (Fitz-Oliveira & Tello-Gamarra, 2024).

In dynamic markets, firm performance increasingly depends on a combination of technological adaptation, market responsiveness, organizational learning, and human capability development. Recent studies indicate that marketing capability improves firm performance by strengthening the firm's ability to organize and deploy market knowledge effectively, while strategic human capabilities support execution, adaptability, and long-term value creation. This means that strategic capabilities should be understood not as abstract sources of competitive advantage alone, but as practical organizational abilities that shape performance outcomes in measurable ways (Duah et al., 2024; Ulrich et al., 2024). For this reason, the present study anchors the background of the problem in the link between capabilities and performance before moving to the specific capability dimensions examined in later subsections.

Wamba et al (2017) define strategic capabilities as the firm's capacity to deploy internal resources and integrate external resources that have been coordinated

purposely to achieve a firm's goals. Strategic capabilities are indicated by the degree to which firms can contribute to the development of core competences, competitive advantage, and, ultimately, firm performance. According to Mikalef and Pateli (2017), different types of resources (organizational, physical, human) contribute in various ways to a firm's performance depending on how they are organized or deployed. The concept of capabilities is about the organization's skills to organize these resources (tangible and intangible assets) in order to achieve strategic goals and objectives. These capabilities, according to Wamba et al (2017) are groups of skills and knowledge accumulated over time and that are employed through the firm's processes that enable the organization to coordinate activities and make use of its assets. This study focused on technological capability, human resource capability, marketing capability and dynamic capability and the impact these capabilities have on the performance of pharmaceutical companies in Kenya.

Performance is the key achievement of an organization in the realization of efficiency and effectiveness and with the ability of remaining focussed on its goals. Performance provides the basis for an organization to assess how well it is progressing towards predetermined objectives, identify areas of strength and weakness and decide on the future initiatives with the goal of how to initiate performance improvement (Fitz-Oliveira & Tello-Gamarra, 2024). Organizational performance is viewed in multi-disciplinary context Hakimpour (2014) such as quality of output, speed in delivery of services and products, increase in market share, good financial results, survival in the turbulent environmental and market changes and high rates of returns and profit.

The pharmaceutical industry provides an important setting for examining strategic capabilities because it is both knowledge-intensive and highly regulated. Across the WHO African Region, countries still import between 70% and 100% of finished pharmaceutical products, while limited manufacturing capacity, fragmented markets, and weak regulatory maturity continue to constrain access, quality assurance, and sustainable local production. These conditions make firm-level capabilities particularly important because pharmaceutical companies must combine technical competence, compliance capacity, supply reliability, and market responsiveness in

order to perform effectively (World Health Organization Regional Office for Africa, 2024).

At the continental and national levels, policy discussions increasingly present pharmaceutical development as both a health-security priority and an industrialization opportunity. In Kenya and across Africa, official policy forums have emphasized the need to strengthen local manufacturing, reduce import dependence, improve affordability, and support regulatory alignment. Kenya has also positioned itself as a potential regional pharmaceutical and biomanufacturing hub, while African policy actors continue to stress that stronger local production will require improved technical know-how, investment, and better coordinated market-shaping strategies (Republic of Kenya, Ministry of Health, 2024a, 2024b).

Strategic capabilities encompass a variety of elements, including technological know-how, marketing acumen, human resources, pricing strategies, and organizational structure (Cordeiro & Tewari, 2015). For pharmaceutical companies, these capabilities are not just abstract concepts; they translate into the ability to innovate, respond to market demands, maintain quality standards, and ultimately, affect the well-being of patients (Gellynck et al., 2012).

In the global context, the transformation of pharmaceutical companies has been profound. Innovations in biotechnology, the rise of personalized medicine, the adoption of digital platforms for sales and marketing, and a renewed focus on patient-centric approaches have redefined the industry (Schilke, 2014). Kenya, in this global wave, faces unique challenges and opportunities. Adapting international practices to local needs, ensuring compliance with ever-evolving regulations, and maintaining a competitive edge requires a nuanced understanding of the strategic capabilities at play.

1.1.1 Strategic Capabilities of Pharmaceutical Companies

Strategic capabilities of pharmaceutical companies refer to the organizational abilities that enable firms to develop, produce, market, adapt, and continuously improve health products in ways that sustain performance under conditions of

competition, regulation, technological change, and market uncertainty. In the pharmaceutical industry, these capabilities are especially important because firms operate in a knowledge-intensive and highly regulated environment where product quality, process reliability, responsiveness to market needs, and compliance with standards are central to survival and growth.

Rather than viewing strategic capabilities only as broad sources of competitive advantage, this study treats them as practical and observable organizational abilities that influence performance. In this regard, the present study focuses on four strategic capabilities: technological capability, marketing capability, dynamic capability, and human resource capability (Teece, 2018; Schilke et al., 2018; Bitencourt et al., 2020).

Technological capability is increasingly central to pharmaceutical companies because the sector is undergoing digital transformation in research, manufacturing, quality assurance, and stakeholder engagement. Recent scholarship shows that digital transformation in the pharmaceutical industry is no longer limited to automation alone; it now affects strategy, operations, organizational design, and stakeholder relationships. This means that pharmaceutical firms require the ability to adopt, integrate, and reconfigure technologies in ways that support product quality, operational efficiency, and market responsiveness. In this study, technological capability is therefore understood as a strategic capability that enhances the firm's ability to upgrade products, improve processes, and respond effectively to changing industry demands (Miozza et al., 2024).

Marketing capability is also critical in pharmaceutical companies because firms must communicate value within highly regulated promotional environments, respond to changing customer expectations, and build trusted relationships with prescribers, distributors, institutions, and end users. Recent evidence from manufacturing contexts shows that digital marketing capability strengthens firm performance by improving how firms use market intelligence, data, and technology to connect customer demand with production and innovation decisions. In the pharmaceutical context, this makes marketing capability more than promotion alone; it becomes a

strategic ability to identify markets, manage channels, fulfil orders, and build brand assets while remaining responsive to competitive and regulatory realities (Liang et al., 2025).

Human resource capability remains equally important because pharmaceutical firms depend on skilled, adaptable, and multidisciplinary personnel to manage medicines development, regulation, commercialization, and quality processes. Recent work on competencies in medicines development shows that the pharmaceutical workforce now requires a broader mix of technical, scientific, regulatory, and adaptive capabilities than in the past. Accordingly, firms that invest in staff development, learning, and capability building are better positioned to sustain innovation, maintain compliance, and execute strategy effectively. Within this study, human resource capability is therefore treated as a strategic capability that supports both operational performance and longer-term organizational competitiveness (Stonier & Jones, 2025).

Global Perspective of Pharmaceutical of Pharmaceutical Companies

The great recession of 2008 and its impact on the pharmaceutical industry are external in nature, over which the industry has very little control. However, the industry itself is responsible for internal factors like decline in R& D spending. Quintile IMS report indicates that the USA will slow down to single digits between 6% and 9% through to 2021, down 12% in 2015. The slow growth is attributed to high drug prices. As per US Food and Drug administration (FDA) center for drug evaluation and research (2010) the approvals for new drugs in the market has dropped from 35 new medicines a year to an average less than 20 new medicine as much as US remains the world's largest market for pharmaceuticals.

Globally, pharmaceutical companies are under pressure to strengthen capabilities that support innovation, resilience, quality, and speed of response. Recent studies show that digital transformation, advanced manufacturing approaches, and more integrated management systems are reshaping the strategic priorities of pharmaceutical firms. At the same time, the industry remains exposed to strong pricing pressures, regulatory scrutiny, and rising expectations regarding product

safety, traceability, and patient-centered delivery. These developments suggest that pharmaceutical companies can no longer rely on product portfolios alone; they must continuously build technological, managerial, marketing, and workforce capabilities that improve how they operate and compete (Miozza et al., 2024).

Regional Perspective of Pharmaceutical Companies

At the regional and continental levels, pharmaceutical capability development is increasingly linked to Africa's broader agenda of health security, local manufacturing, and regulatory strengthening. Recent WHO guidance indicates that many African countries still face limited local manufacturing depth, uneven regulatory capacity, financing constraints, fragmented markets, and shortages in skilled workforce support for pharmaceutical production. The implication is that firms in the region must build stronger technological, regulatory, managerial, and human capabilities if they are to improve production quality, expand market reach, and compete sustainably. Thus, the regional perspective reinforces the argument that strategic capabilities are not optional attributes but necessary conditions for pharmaceutical firm performance in African markets (World Health Organization Regional Office for Africa, 2024).

Local Perspective of Pharmaceutical Companies

In Kenya, the pharmaceutical industry operates in a competitive and increasingly regulated environment that requires firms to strengthen both productive and market-facing capabilities. Recent Ministry of Health policy statements and WHO country analysis place strong emphasis on local pharmaceutical manufacturing, investment in production ecosystems, stronger regulatory systems, and improved capability for quality-assured health product supply. This policy direction suggests that pharmaceutical firms in Kenya are expected not only to expand output, but also to improve the capabilities needed for compliant production, distribution efficiency, quality management, and market responsiveness (Ministry of Health, Kenya, 2024; World Health Organization, 2024).

Recent regulatory developments further show that pharmaceutical firms in Kenya are facing a higher capability threshold. For example, the Pharmacy and Poisons Board has advanced implementation of bioequivalence requirements for multisource and locally manufactured products, a move that raises expectations for technical competence, regulatory readiness, documentation quality, and product development discipline among local manufacturers. Such regulatory shifts make technological capability, skilled personnel, and sound organizational processes increasingly important determinants of firm competitiveness and performance (Pharmacy and Poisons Board, 2023, 2024a, 2024b).

At the market level, Kenyan pharmaceutical companies must strengthen both market-facing and adaptive capabilities. Marketing capability is needed to identify viable market segments, manage customer relationships, coordinate supply channels, and communicate value within a regulated environment. Dynamic capability is equally important because pharmaceutical firms must respond to changing regulatory requirements, shifting customer expectations, supply disruptions, technology adoption pressures, and competitive threats. This makes it necessary for firms to combine technological capability, marketing capability, dynamic capability, and human resource capability in ways that support organizational responsiveness, innovation, operational renewal, and overall performance (Schilke et al., 2018; Bitencourt et al., 2020; Masinde et al., 2023).

There exists in any field that an organization serves in a liberalized economy critical success factor that determines the difference between profit and loss or between success and failure in the area of operation. The competitive pressure in the pharmaceutical industry may come from other players in the industry through counterfeits, unfair competition from parallel importers taking advantage of the attractiveness of the industry and passing formal processes and generic drugs (Moreno & Epstein, 2019). Pharmaceutical companies operating in Kenya have come to appreciate that there are enormous challenges in the industry and have to adapt to the new situation.

Though competitive challenges and impact varies from industry' to industry', it leads to reduced prices, impacts negatively on profits, reduces market share and can force weak companies to close .The pharmaceutical companies therefore need to know the Critical success factors in the industry so as to develop relevant core strengths and develop distinct capabilities that are unique to them, identify areas of weakness and address them so as to endear themselves to their customers (Moreno & Epstein, 2019).

The management once committed to a strategy will ensure sufficient resources like time and finances, and support from all teams is given to the strategy which will ensure its success. Firm commitment and structure also involve creating team's cohesion leading to higher performance. (Dzisi&Ofosu 2014). Pharmaceuticals are specialized and costly products, being major components of local and international trade: a major health investment for the government and development partners and key health expenditure for the households (Gunday, 2015). The key objective of this study was to determine strategic capability of pharmaceutical companies in Kenya and the effect of performance. The study adopted a descriptive survey and targeted the pharmaceutical firms in Kenya that are manufacturing and distributing pharmaceutical products. This is according to Gonzalez, Claro & Palmatier (2014).

Pharmaceutical firms in Kenya therefore require strategic capabilities that go beyond routine operations. They need technological capability to improve products and processes, marketing capability to manage customers and distribution channels, dynamic capability to sense and respond to environmental change, and human resource capability to support learning, adaptation, and effective execution. These capabilities are interrelated, but each contributes a distinct role in helping firms respond to competition, regulatory demands, technological developments, market uncertainty, and sector-specific complexity.

The importance of these capabilities is reinforced by the wider African policy environment, which increasingly links pharmaceutical sector growth to stronger local production ecosystems, regulatory compliance, innovation, and workforce readiness. In practical terms, pharmaceutical companies that fail to develop these capabilities

are more likely to struggle with product upgrading, market access, compliance demands, customer responsiveness, and strategic adaptation. Conversely, companies that strengthen these capabilities are better positioned to improve quality, efficiency, competitiveness, and market performance (Teece, 2018; Bitencourt et al., 2020).

It is on this basis that the present study examines strategic capabilities of pharmaceutical companies through four dimensions: technological capability, marketing capability, dynamic capability, and human resource capability. These dimensions provide a clearer and more structured basis for analyzing how pharmaceutical companies in Kenya can strengthen their performance in a dynamic and demanding business environment.

1.1.2 Performance of Pharmaceutical Companies

Performance of pharmaceutical companies refers to the extent to which firms achieve their intended financial, market, operational, and customer-related outcomes over time. In contemporary strategic management, performance is no longer viewed only in financial terms; rather, it is understood as a multidimensional concept that combines financial and non-financial indicators. This broader view is particularly relevant in industries such as pharmaceuticals, where customer outcomes, internal process efficiency, learning, innovation, and regulatory responsiveness shape overall organizational success. For that reason, firm performance is better understood as the combined achievement of market goals, financial goals, customer value, and internal effectiveness rather than as profit alone (Deng et al., 2025; Madsen, 2025).

In the pharmaceutical industry, performance has a more specialized meaning because firms are expected not only to generate sales, profits, and market share, but also to maintain quality assurance, supply reliability, regulatory compliance, and responsiveness to health needs. Recent global and sector-specific literature shows that the pharmaceutical industry is increasingly shaped by digital transformation, operational complexity, and stakeholder pressures, making performance a function of both business outcomes and organizational capability. In the Kenyan context, this is equally important because current assessments of the local production ecosystem emphasize the role of markets, regulatory systems, research and development, and

production capacity in determining how well pharmaceutical firms can compete and contribute to access to quality, safe, and effective medical products (Miozza et al., 2024; World Health Organization, 2024).

Dynamic capability remains one of the important determinants of performance among pharmaceutical firms because it enables companies to remain responsive under changing environmental conditions. Pharmaceutical companies operate in a context where performance is affected by technological developments, regulatory reforms, supply chain disruptions, customer needs, market competition, and changing health-sector priorities. Firms with stronger dynamic capability are better able to scan the environment, identify emerging opportunities and threats, mobilize resources, adjust strategies, and renew internal processes in ways that support sustained performance.

This is important because performance in the pharmaceutical sector is not determined by static resources alone, but by the firm's ability to continuously align its resources and capabilities with changing external conditions. Therefore, dynamic capability strengthens performance by improving adaptability, strategic responsiveness, innovation, resilience, and the effective reconfiguration of organizational resources (Teece, 2018; Schilke et al., 2018; Kump et al., 2019; Masinde et al., 2023).

Recent evidence from Kenya also suggests that pharmaceutical firm performance is increasingly linked to digital and process-related improvements. A 2024 study on pharmaceutical micro, small, and medium-sized enterprises in Kenya found that e-procurement, e-marketing, e-payment, and telemedicine significantly and positively affected market performance by improving efficiency, market outreach, transaction effectiveness, and customer engagement. This suggests that pharmaceutical performance is no longer determined by sales effort alone, but also by the ability of firms to use technology to improve operations and market responsiveness. In the present study, this understanding is important because it provides a direct link between performance and the broader strategic capabilities discussed in this thesis (Githua & Muathe, 2024; Miozza et al., 2024).

1.1.3 Pharmaceutical Companies in Kenya

The pharmaceutical industry in Kenya operates within a structured regulatory and policy environment that has made the sector one of the country's most strategic health and industrial segments. The Pharmacy and Poisons Board (PPB), established under the Pharmacy and Poisons Act, Cap 244 of the Laws of Kenya, regulates the profession of pharmacy and the registration and licensing of pharmaceutical outlets, including manufacturers, wholesalers, pharmacies, and other retail outlets. This regulatory role is intended to safeguard the quality, safety, and efficacy of medical products and health technologies in the country. In recent years, the sector has attracted stronger policy attention because local pharmaceutical production is increasingly being linked to health security, access to essential medicines, and industrial development in Kenya (Pharmacy and Poisons Board, 2024; Ministry of Health, 2025a).

The pharmaceutical companies in Kenya may broadly be viewed in terms of manufacturing, wholesale and retail supply functions, all of which are important in ensuring that medicines reach the market efficiently and safely. Recent evidence shows that Kenya remains one of the leading pharmaceutical hubs in East Africa, with domestic production estimated to cover about 20–30% of the national market, while current policy targets seek to raise local manufacturing of essential medicines to 50%. Government reforms have also included the Kenya Local Manufacturing Strategy 2025–2030, accelerated product evaluation timelines, reduced regulatory fees for locally manufactured products, and new investment measures that, according to the Ministry of Health, have already attracted additional manufacturers into the local production ecosystem. These developments suggest that pharmaceutical companies in Kenya are operating in a sector that is expanding, becoming more regulated, and increasingly expected to improve both competitiveness and contribution to national health outcomes (UNCTAD, 2025; Ministry of Health, 2025a, 2025b, 2025c).

1.1.4 Firm Characteristics

Firm characteristics are attributes such as a firm's location, capitalization, period of operation, asset base, market size, industry of operation and ownership structure (Ezechukwu and Amahalu 2017). It encompasses the resources and objectives in a firm that influence the way it conducts its business. These could include the size of the firm which has been measured in different ways including the number of persons employed, and value of assets. Other characteristics include ownership structure and the period the firm has been in operations. These firm characteristics influence performance outcomes to varying degrees. Kisengo and Kombo (2014) noted that large firms have posted higher success levels compared to their small counterparts. Firm size has been found to be a key driver in overall operational costs because of economies of scale. In the same manner, organizations that have been in operation for long stand higher chances of posting higher return on assets. This could be explained in terms of large pools of customers and perfectly blended products that suit the changing needs of their customers. Other key firm characteristics that distinguished firms is their propensity to acquire other enterprises (Cordeiro & Tewari, 2015). Acquisition of other business establishments enable firms diversify their investment thus enabling the spreading of risks.

1.2 Statement of the Problem

Kenya's pharmaceutical sector has continued to attract policy attention because of its role in health security, access to medicines, and industrial development. Recent government policy positions indicate that local manufacturing currently accounts for about 20% of essential medicines, and the country is targeting an increase to 50% through ongoing regulatory and industrial reforms (Ministry of Health, 2025a). At the same time, the sector still operates within a highly demanding environment characterized by import dependence, rising competition, strict regulatory expectations, and continuing pressure to improve affordability, quality, and availability of medicines. At the regional level, WHO reports that many African countries still import between 70% and 100% of finished pharmaceutical products, reflecting structural weaknesses in production ecosystems, regulatory systems, and

market coordination (World Health Organization Regional Office for Africa, 2024). In Kenya, recent reforms such as accelerated product evaluation timelines, reliance mechanisms for marketing authorization, and expanded regulatory oversight show both the importance of the sector and the intensity of the operating environment faced by pharmaceutical firms (Ministry of Health, 2025b; Pharmacy and Poisons Board, 2025).

Despite these developments, the performance of pharmaceutical companies in Kenya remains a strategic concern because firms must operate profitably while responding to competition, regulatory requirements, customer expectations, and market uncertainty. In such an environment, performance is unlikely to depend on resources alone; rather, it depends on the strategic capabilities' firms build and deploy in technology, marketing, dynamic, and human resources. However, recent Kenyan studies have tended to examine these issues in a fragmented way. For example, recent work has examined marketing capability alone, dynamic capabilities among pharmaceutical firms in Nairobi County, or strategy implementation among pharmaceutical manufacturers, but these studies do not adequately address the combined influence of strategic capabilities on the performance of pharmaceutical companies in Kenya, nor do they sufficiently examine the moderating role of firm characteristics in that relationship (Masinde et al., 2024; Njeru et al., 2025). The present study therefore seeks to fill this empirical and contextual gap by examining how technological capability, marketing capability, dynamic capability, and human resource capability influence the performance of pharmaceutical companies in Kenya, and how firm characteristics moderate that relationship.

1.3 Objectives of the Study

The general objective of the study was to establish the influence of strategic capabilities on the performance of pharmaceutical companies in Kenya.

1.3.1 Specific Objectives

The study was guided by the following specific objectives:

1. To establish the influence of technological capability on the performance of pharmaceutical companies in Kenya
2. To establish the influence of marketing capability on the performance of pharmaceutical companies in Kenya
3. To assess the influence of dynamic capability on the performance of pharmaceutical companies in Kenya.
4. To determine the influence of human resource capability on the performance of pharmaceutical companies in Kenya
5. To assess the moderating effect of firm characteristics on the strategic capabilities and performance of pharmaceutical companies in Kenya.

1.4 Research Hypotheses

The study adopted the hypotheses:

H₀₁: Technological capability has no significant influence on the performance of pharmaceutical companies in Kenya

H₀₂: Marketing capability has no significant influence on the performance of Pharmaceutical companies in Kenya

H₀₃: Dynamic capability has no significant influence on the performance of pharmaceutical companies in Kenya

H₀₄: Human resource capability has no significant influence on the performance of Pharmaceutical companies in Kenya.

H₀₅: Firm characteristic has no significant moderating influence on the strategic capabilities and performance of pharmaceutical companies in Kenya.

1.5 Significance of the Study

The findings from the study was significant to a number of parties including the government and policy makers, the management of the pharmaceutical firms, the management of other firms in other, industries, the strategic management

practitioners as well as future academicians and scholars. These beneficiaries are as herein discussed based on how they would benefit;

1.5.1 Management of Pharmaceutical Firms

To the top leadership and management in the pharmaceutical companies in Kenya, the study is a guide in making regulations, policies and strategies in an effort to improve their sales performance in this highly competitive business environment. The findings and recommendations given is a guide to also restructure their organizational structure and products so as to performance well. Through the discussed capabilities, the management can identify ways to fill the gaps that have always rendered their strategies unsuccessful.

1.5.2 Government and Policy Makers

The study is beneficial to policy makers in the pharmaceutical industries such that from the information captured in this study; the policy makers can formulate regulations and laws that govern the sector and ensure high performance. The policies created should ensure that the industry survives and thrives. The government which is also a stakeholder in number of companies through its representatives identifies the best approaches to adopt in order to harness the capabilities into success and deliver the projected results.

1.5.3 Future Scholars and Researchers

The study findings would future scholars and academicians who will use the study as a source of empirical literature on strategic capabilities and performance of pharmaceutical companies and also for referencing purposes. Researchers find this study to be of importance as it was a source of literature material and give a guideline in its recommendations on areas that can be covered while conducting further studies on the topic or related topic. Future scholars can therefore use the study as a referencing material to support their research works.

1.6 Scope of the Study

This study concentrated on strategic capabilities and the performance of pharmaceutical companies in Kenya. The study focused on pharmaceutical companies engaged in manufacturing and distribution of pharmaceutical products across Kenya. Although these companies operate in different parts of the country, many have their headquarters or major operational offices in Nairobi, with branches and supply networks distributed across other regions.

The study covered the independent variables of technological capability, marketing capability, dynamic capability, and human resource capability. It also examined the moderating effect of firm characteristics on the relationship between strategic capabilities and the performance of pharmaceutical companies in Kenya. Firm characteristics were considered important because attributes such as firm size, capital base, management structure, and decision-making approach may influence the extent to which strategic capabilities translate into improved performance.

Dynamic capability was included in the study because pharmaceutical companies operate in a business environment that is changing in terms of regulation, technology, competition, customer needs, market access, supply chain conditions, and health-sector priorities. Dynamic capability captures the firm's ability to sense opportunities and threats, seize emerging opportunities, and reconfigure resources and processes in response to environmental change. This capability is therefore relevant to the study because pharmaceutical firms must continuously adapt their strategies, structures, processes, and resource deployment in order to remain competitive and improve performance. Technological capability was considered because it entails the use and upgrading of technology in business processes such as manufacturing, distribution, quality assurance, and customer support. Marketing capability was included because it reflects the firm's ability to understand customers, manage markets, coordinate distribution channels, and build market relationships. Human resource capability was included because skilled, adaptable, and innovative employees are essential for implementing strategy and sustaining organizational

performance (Teece, 2018; Schilke et al., 2018; Kump et al., 2019; Bitencourt et al., 2020).

The information was obtained from the 415 pharmaceutical companies registered and operating in Kenya, as per Pharmacy and Poisons Board (2021).

1.7 Limitations of the Study

The researcher faced a challenge of the time taken to return the questionnaires because most of the respondents did not fill them within the expected time. The researcher dealt with this challenge by following the respondents physically through several visits and through the use of telephone calls. Some respondents also did not understand the role of academic research and they had reservations about the questionnaire as they felt that their privacy was being interfered with. This was sorted by taking time to explain to them and assuring them that the results would be used for academic purposes only. The researcher faced the challenge of content limitation in the research studies done in the field. The researcher gathered the subject area findings from other related industries.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relevant to the study on strategic capabilities and the performance of pharmaceutical companies in Kenya. It presents the theoretical foundations of the study, the conceptual framework showing the relationship among the variables, and the empirical literature on technological capability, marketing capability, dynamic capability, human resource capability, firm characteristics, and firm performance. The chapter also critiques the reviewed literature, identifies the research gaps, and provides a summary of the key issues emerging from the review. This structure is important because pharmaceutical companies operate in a dynamic environment characterized by regulatory pressure, technological change, competition, market uncertainty, and the need for continuous organizational renewal. Therefore, the literature review is organized around the strategic capabilities that may explain how pharmaceutical firms build, deploy, and reconfigure resources to enhance performance.

2.2 Theoretical Review

This study was anchored on four theories that explain how firms build, deploy, renew, and utilize capabilities to improve performance in competitive and changing environments. These are the Innovation Diffusion Theory, the Knowledge-Based Theory, Porter's Competitive Theory, and Dynamic Capabilities Theory. Innovation Diffusion Theory explains how firms adopt and internalize innovations, especially in relation to technological capability. Knowledge-Based Theory explains the strategic value of knowledge, learning, and employee expertise, which supports human resource capability and aspects of marketing capability. Porter's Competitive Theory explains how firms position themselves in markets through differentiation, focus, cost awareness, customer targeting, and competitive response. Dynamic Capabilities Theory provides the main theoretical foundation for dynamic capability because it explains how firms sense opportunities and threats, seize opportunities, and

reconfigure internal and external resources in response to environmental change. Together, these theories provide a strong basis for examining technological capability, marketing capability, dynamic capability, human resource capability, firm characteristics, and their influence on the performance of pharmaceutical companies in Kenya.

2.2.1 The Innovation Diffusion Theory

The Innovation Diffusion Theory created by Rogers (2004) concluded that individuals adopt procedures that integrate innovation. The theory focuses mainly on the processes which determine a society's adoption innovation to increase the spread in a community. The innovation decision process is the procedure that people experience which includes; innovation knowledge, formation of attitudes towards the knowledge, choices to either accept or reject it, the application of original knowledge, as well as validation of the decision. Roger (2004) further explained that the reason that make some individuals to use technological change and adopt innovations easily than others may be clarified by the submission of diffusion of innovations theory. Rogers' indication that innovation diffusion has led to social change proves that it tremendously depends upon the person who are involved in the adoption of the innovation.

It is clear that the framework of innovation dissemination is suitable for studying the innovation process in the pharmaceutical sector. The diffusion of innovation theory helps us understand how pharmaceutical firms integrate innovation in their culture. It will help explain innovative processes adopted by pharmaceutical firms. It will also help us understand the place of innovative capability in the firm.

The theory is relevant to this study because pharmaceutical companies operate in a sector where technological changes in product design, manufacturing processes, information systems, and quality assurance are important drivers of competitiveness and performance. Recent literature on the digital transformation of the pharmaceutical industry shows that technology adoption increasingly shapes strategy, operational efficiency, stakeholder engagement, and responsiveness to market changes (Miozza et al., 2024). In this study, Innovation Diffusion Theory is

therefore useful in explaining technological capability, since firms that are better able to adopt, internalize, and use technological innovations are more likely to improve product upgrading, process improvement, and overall firm performance. The theory supports the argument that the ability to absorb and apply innovation is a critical basis for performance among pharmaceutical companies in Kenya (Rogers, 2003; Miozza et al., 2024).

2.2.2 Knowledge Based Theory

The research will emphasis on the knowledge-based theory of a company where knowledge is seen as the most strategically significant resource of the company. Because knowledge-based resources are generally hard to imitate and socially complicated, its advocates claim that heterogeneous knowledge bases and capacities among companies are the main determinants of continuous competitive advantage and superior corporate performance (Sveiby, 2009). This knowledge is integrated and transmitted through various institutions including culture and identity of the organization, policies, routines, records, systems, and staff. Originating from the strategic management literature, this perspective builds upon and extends the Resource-Based View of the firm (RBV) initially promoted by Grant (2010) and later expanded by others (Eisenhardt & Santos, 2010).

In the knowledge-based theory, the primary goal of the firm is the application of existing knowledge to the production of goods and services (Grant, 2013). Knowledge and skills give a firm competitive advantage, because it is through this set of knowledge and skills that a firm is able to innovate new products and processes, or improve existing ones more efficiently and or effectively (Nonaka & Takeuchi, 2012). This theory will therefore help in understanding how pharmaceutical firms in Kenya tap into one of the most important resources of the firm (knowledge), which is the firms' innovative capability and how it impacts on performance.

The Knowledge-Based Theory (KBT) emphasizes the role of intellectual capabilities in organizational success. In the context of pharmaceutical companies, marketing capability represents the efficient utilization of market knowledge, insights, and

expertise. Connecting KBT to marketing capability, we see that having detailed and specialized knowledge of markets, consumer behavior, and regulatory environments empowers pharmaceutical companies to create and implement effective marketing strategies. This theory is relevant to pharmaceutical companies because the industry depends heavily on specialized knowledge in areas such as product development, regulation, quality control, marketing, and supply chain coordination. Recent reviews show that the knowledge-based view remains highly influential in explaining firm-level performance, especially where organizational learning, information management, and expertise determine strategic outcomes (Stoian et al., 2024). In the present study, the theory is particularly useful in explaining human resource capability, since staff development, learning, and innovation depend on how firms build and mobilize knowledge through employees. It also supports part of marketing capability, because effective marketing depends on the acquisition and use of customer, competitor, and channel knowledge. Thus, the Knowledge-Based Theory helps explain why firms that manage knowledge more effectively are likely to perform better than those that do not (Grant, 1996; Stoian et al., 2024).

2.2.3 Porters Competitive Theory

This theory was developed by Porter (1980). The theory identified the five forces that will shape the success or failure of any firm in the market it operates in. The theory identified five forces that shape the success or failure of any firm in the market it operates in. The five forces are a simple but powerful tool as it guides the company on how to react to bargaining power of suppliers and consumers, threat posed by substitute products, entrants of new competitors and business rivalry.

Grant (2010) discussed the basic types of competitive strategies that firms have in order to achieve a sustainable competitive advantage: low cost, Barney (2009) notes that managers are constantly deciding whether to launch new strategic initiatives and how to respond or counteract moves by other competitors. The study points out that if managers fully understand the competitive environment of the firm, they can make more effective decisions. Porter's suggestion that competitive strategy creates

competitive advantage, and many studies have also supported superior business performance (Dickson, 2012).

This theory has faced criticism from scholars like Barney (2011) who argued that it is low, allowing market participants to plan for and respond to competitive behavior, assuming a classic perfect market, yet most real-world industries are not economically perfect markets. This theory considers a firm's only source of competitive advantage to be the external factors. This view is thus flawed as there are other sources of the company's internal competitive advantage. The theory focuses on the industry without the individual firm being considered. In the case of rapid technological change and highly dynamic markets, Porter's theory is of short-term interest in order to imbalance rivals.

Porter's Competitive Theory emphasizes the importance of competitive strategies based on differentiation, cost leadership, and focus. In the context of pharmaceutical companies, strategic capabilities refer to the abilities to design and implement these strategies effectively. The alignment with Porter's theory lies in how these capabilities enable firms to create unique products, maintain cost efficiencies, or target specific market segments. Strategic capabilities, built around Porter's principles, allow pharmaceutical companies to navigate competitive landscapes, respond to industry forces, and leverage internal strengths to gain a competitive edge. The successful execution of these strategies enhances performance by aligning core capabilities with market demands and competition dynamics.

The relevance of Porter's Competitive Theory to this study lies in its ability to explain how pharmaceutical companies position themselves in competitive markets. Pharmaceutical firms operate in an environment characterized by rivalry from local and multinational firms, generic competition, customer bargaining power, supplier pressure, regulatory demands, and the threat of substitute products. In this context, marketing capability is important because it enables firms to identify target markets, differentiate products, communicate value, manage distribution channels, build customer relationships, and strengthen brand position. Porter's theory therefore supports the marketing-capability dimension of the study by showing how firms use

market-facing capabilities to respond to competitive forces and improve performance. Although the theory focuses more on external industry structure than internal capability renewal, it remains useful in explaining how pharmaceutical firms translate internal strengths into competitive positioning and market outcomes.

2.2.4 Dynamic Capabilities Theory

Teece, Pisano, and Shuen developed this school of thought in 1997 in an effort to link strategic management and dynamic capacities (Prahalad & Hamel, 2013). The notion is based on the idea that a company's competitive advantage is shaped by its capacity to integrate, develop, and reorganize its internal and external skills in order to align its activities with the quickly evolving business setting. The study expressed that organizational specific capabilities influence the strategic management processes. The scholars were able to bring out the differences between dynamic capabilities and operational capabilities related to the current operations in an organization (Teece, 2007).

Dynamic capabilities relate to the capacity in an organizational setting to create extend, or modify its resource base so as to achieve an upper hand over its competitors (Cordes-Berszinn, 2013). This theory assumes that organizations possess core competencies which it well utilized, can influence their short-term competitive positioning in its bid to build a long-term competitive advantage (Prahalad & Hamel, 2013). Teece (2007) argues that the most important factor in building competitive advantage of organizations is corporate agility. Corporate agility comprises organization's ability to sense and modify the opportunities and threats, seizing opportunities and maintaining competitiveness through ring-fencing, reconfiguration, combining and protecting the businesses' assets (Cordes-Berszinn, 2013).

In order to align business operations to the changing environment, organizations need to incorporate strategic assets like capability, information, communication and technology, and constant feedback from customers (Teece, 2007). Organizations should be able to accumulate knowledge which when utilized, can guarantee competitive advantage for the organization (Cordes-Berszinn, 2013). This may

involve formation of partnerships and entering into collaborations to facilitate knowledge exchange and development.

Recent literature has continued to strengthen the relevance of Dynamic Capabilities Theory in strategic management. Teece (2018) explains that dynamic capabilities are closely linked to business model renewal because firms must continuously adapt how they create, deliver, and capture value. Schilke, Hu, and Helfat (2018) further argue that the dynamic capabilities perspective has become one of the most important lenses for understanding how firms adapt to change, although they also note that the concept must be clearly specified and empirically measured. This is important for the present study because dynamic capability should not be treated as a vague concept; rather, it should be examined through clear dimensions such as sensing, seizing, and transforming.

The sensing dimension refers to the firm's ability to scan the environment, identify market changes, detect regulatory shifts, understand customer needs, and recognize emerging threats and opportunities. In the pharmaceutical industry, sensing may involve monitoring changes in health policy, medicine demand, procurement systems, product regulations, competitor actions, technology, and supply chain risks. Firms that are strong in sensing are better positioned to anticipate change before it threatens performance.

The seizing dimension refers to the firm's ability to mobilize resources and take strategic action once opportunities or threats have been identified. In pharmaceutical companies, seizing may include investing in new product lines, improving distribution systems, forming strategic partnerships, adopting new technologies, developing new markets, or restructuring internal processes to respond to regulatory and market demands. This dimension is important because sensing alone does not improve performance unless the firm can act on the information gathered from the environment.

The transforming or reconfiguring dimension refers to the firm's ability to renew, adjust, and realign its internal and external resource base. This may involve changing organizational routines, reallocating resources, redesigning business processes,

retraining staff, upgrading systems, restructuring departments, or modifying strategies to fit changing conditions. In the pharmaceutical sector, transformation is particularly important because firms must continuously adjust to changing product standards, compliance requirements, technology, competition, and customer expectations.

Dynamic Capabilities Theory (DCT) focuses on a firm's ability to adapt, integrate, and reconfigure internal and external competences to match rapidly changing environments. In the context of pharmaceuticals, technological capability refers to the capacity to develop, adapt, and utilize technology effectively. By aligning with DCT, technological capability emphasizes the need for continuous innovation and adaptability in a rapidly evolving industry. The integration of new technologies and the ability to reconfigure existing ones enables pharmaceutical companies to respond to market changes, create competitive advantages, and enhance overall performance. Thus, technological capability rooted in DCT provides a strategic tool for navigating the complexities of the pharmaceutical landscape. Therefore, this theory would be relevant to the study as it will explain the role of technological capability, which is a form of dynamic capability in shaping the performance of the pharmaceutical firms in Kenya.

2.3 Conceptual Framework

The conceptual framework depicts the expected relationship between the study variables by showing how the independent variables—technological capability, marketing capability, dynamic capability, and human resource capability—are hypothesized to influence the dependent variable, namely the performance of pharmaceutical companies in Kenya. The framework assumes that each of the four strategic capabilities exerts a direct positive influence on firm performance because stronger capability in technology, markets, dynamic decisions, and people management improves the firm's ability to respond to competition, operate efficiently, and achieve better market and financial outcomes. In addition, the framework shows that firm characteristics act as a moderating variable by strengthening or weakening the relationship between strategic capabilities and

performance depending on the size, management structure, and capital position of the firm. This means that the effect of strategic capabilities on performance is not expected to be uniform across all pharmaceutical firms, but to vary according to their organizational characteristics and resource endowment (Miozza et al., 2024; Liang et al., 2025; Malik et al., 2024).

Dynamic capability is expected to influence performance by enabling firms to sense changes in the environment, seize emerging opportunities, and reconfigure resources and processes in response to regulatory, technological, competitive, and market shifts. Marketing capability, by contrast, is more concerned with identifying markets, differentiating products, managing customer relationships, coordinating channels, and building brand value. The separation is therefore justified in this study on the grounds that the two capabilities are related but not identical: marketing capability helps the firm create and communicate value, whereas dynamic capability helps the firm appropriate value under market and policy constraints. This distinction is especially defensible in the pharmaceutical sector, where medicine pricing requires technical capacity, data systems, and policy awareness beyond ordinary promotional and customer-management activities (Babar, 2024; Liang et al., 2025).

This is shown in Figure 2.1

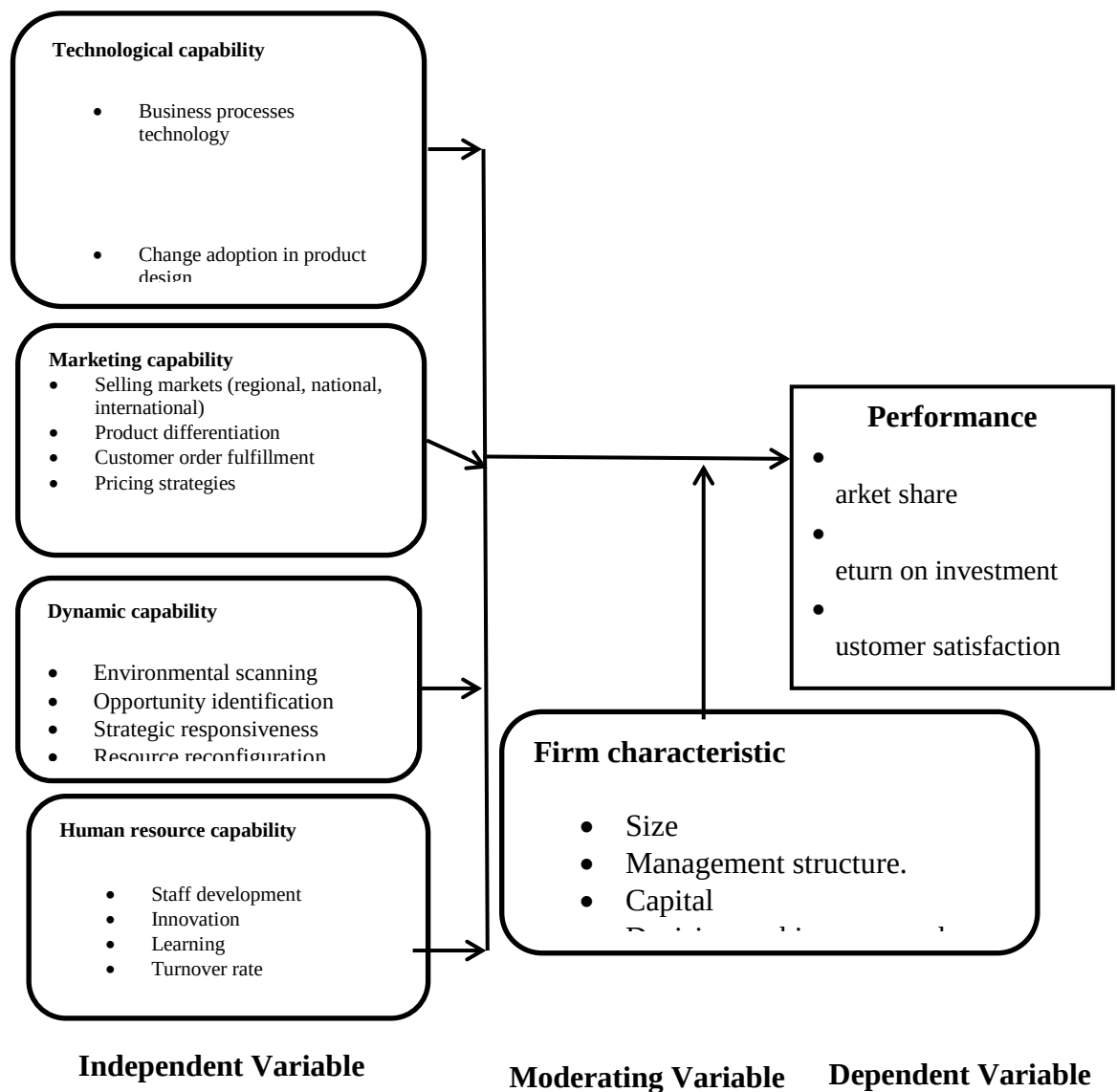


Figure 2.1: Conceptual Framework

2.3.1 Technological Capability

Technological capability is linked to firm knowledge. Firms develop their technological capability in an incremental way, and in doing that, they are limited to continue to do what they already know, which means there is a cognitive limit to

what a firm is capable of doing. Therefore, the concept of technological capability embraces the generation of new knowledge and learning. Reichert and Zawislak (2014) define technological capability as the firm's ability, based on its accrued knowledge, to perform a set of activities, which results in new knowledge development to achieve positive economic results.

In a world where informatics is prevalent, concerns are increasingly focused on smart filtering out most of the inaccurate information in the technological field. Arnold and Thuriaux (2013) argue that data cannot be manipulated or interpreted without being capable of understanding it and acting on it. Results derived from the analyzed data in a study by Madani, et al (2014) showed that the national technological and scientific environment, business environment, infrastructure and legal requirements, and international collaboration were the most important factors affecting the technological capabilities of Iran's pharmaceutical industry.

Organizations do not always behave as logically as indicated by the neoclassical model in the current society may be because they don't have sufficient skills and resources to adequately interpret incoming information. For instance, firms may take quite some time to discover extra strategies in technology to remain competitive advantaged on the entry of new competitors in the market. With perfect knowledge and preparation of the fluctuations in the market, a firm is technologically advantaged to remain competitive despite the possible competition in the market (Gellynck et al., 2012)

With organization size, the degree to which businesses actually possess such capacities tends to increase. This seems to be mainly due to the fact that increasing size increases the division of labor, allowing the company to build and commit the skills needed for the various dimensions of technological capacity. Small, technology-based companies are the biggest institutional exception: they happen to have high networking skills in information and technology, but they are not always good at technical skills. Since firms vary in size and capital, the small-scale firms often have underdeveloped business skills which make it difficult for them to do the kind of work that is usually associated with the creation of a wide-company policy.

Complex research and development in pharmacy field cases is often important to give a financial case. Technological potential risks can be difficult to measure and justify (Waldman & Jensen, 2016). Therefore, they seem to be incapable to meet the competition standard consistently which makes the firms to remain technologically incapable due to limitation of resources.

Skills, knowledge and experience are required to operate existing systems and to generate technical change. Technological capability as a continuous process is to absorb and create technological knowledge from the interaction with the environment. Firms need to accumulate resources and competences, which allow them to have a more developed technological capability than their competitors. In that sense, technological capability relates to absorption and transformation of a technology as a way of reaching higher levels of technical-economic efficiency in the pharmaceutical industry. With the rise of information technology and the consequent globalization of markets, companies seek competitiveness through technological and organizational innovations (Reichert & Zawislak, 2014).

According to Song et al. (2015), to enhance innovation, an organization must invest well in the development of technological capabilities that provide the skills and abilities to unleash and employ different kinds of resources and techniques. In addition, firms can no longer rely their business merely on domestic market. They need to seek opportunity and compete in the global market place. In order to compete in the global competition, being innovative is paramount. Other than enjoying lower cost and increasing productivity innovative firms are capable of introducing or improving products or processes; define and redefined the firm or product positioning in a new market place (Alsaaty, 2011).

The issue of long run accumulation of technological capability in industry is the subject of research in developing countries. Technological learning involves such processes of firms building up and accumulating technological capability. A case from the drug discovery pharmaceutical industry is where many firms have chosen to adopt a new technological trajectory as a means of transforming existing technological identity and capability. In today's world, advancement in ICT

capability is used as a strategy to advance the plans of any organization. Information technology has revolved on how best to communicate market, advertise and distribute products from the point of manufacturing to distribution to the point where clients prefer it. Information technology capability involves learning to make the most of digital technologies available to them, adapting to new ways of doing things as technologies evolve and limiting risks in a digital environment to themselves and others (Gellynck et al., 2012).

In order to participate in a knowledge-based economy and be empowered both now and in the future within a technologically sophisticated society, customers need the knowledge, skills and trust to make information technology work for them at workplaces, at home and in their communities. Information and communication technologies are fast and automated, interactive and multimodal, supporting the rapid communication and representation of knowledge to many audiences and their adaptation in various contexts (Ndiege, Herselman & Flowerday, 2014). According to Ndiege et al (2014), worldwide technological capabilities in bio pharmaceuticals include developments in accordance with the molecular biology revolution, governmental policies, and the modern international environment derived from laws and regulations. Because technological capability has a significant impact on the pharmaceutical industry's success, it has been selected as a factor in the present research. Furthermore, not much research has examined how technical capability affects the pharmaceutical industry's success in Kenya.

2.3.2 Marketing Capability

Marketing capability is about the ability of an organization to take appropriate decisions related to: the market where to place its products; the most convenient distribution channels; the advertising channels to reach their consumer target; the branding strategy. Marketing capability is one of the fundamental elements to reach a good performance, as firms, through differentiation, can satisfy consumer preferences (Gellynck et al., 2012). Firms that implement marketing programs better than their rivals should benefit from greater success. Marketing capability help firms

in satisfying current customers, exploiting existing products and distribution channels, and advertising existing brands.

Corporate marketing ability is considered to be a key support for the launch of a new product, because advertising and promotion undoubtedly affect recognition and initial testing of the new product (Vorhies, Morgan & Autry, 2009). The strong marketing capability of an organization not only communicates and promotes a new product in the sales, but can also be influential in creating a profitable new product.

Product Knowledge is an essential sales ability. Understanding the features of your products allows you to accurately and persuasively present their benefits. Most product users will take lesser time to make decisions if the product features are well articulated. Knowledge of the product is the most important sales closure tool. It instills in the customer faith, confidence and respect, creating a positive customer experience (Wang & Hazen, 2016).

The franchising agreements restrict operations and distribution of products and the decision-making process as the challenges (Chemutai & Nzulwa, 2016). Friendly, polite customer service agents are always a plus, but product knowledge in customer service is one of the other key elements. Customer support agents will not be able to serve customers properly without a thorough understanding of the products or services with which they are supposed to be assisting. Having good customer service product knowledge will not only help consumers get better service, it will also increase sales, enhance branding efforts, and even help your call center agents become more comfortable and confident in their daily duties. Product knowledge can be measured by the flow of prescription and repeat orders from customer feedback (Cilingir & Basfirinci, 2014).

The strategy of product differentiation is the process of distinguishing a product or service from others to make it more attractive to a specific target market. This involves distinguishing, for instance, the products of the company and competitors through packaging and branding. This will form unique selling point for the company. Product differentiation is essential as it arouses the interest of the customer in the market. It enables the seller to position their own product with competing

products on the market and highlight the unique features that make their product more superior. Products can be differentiated by branding, packaging (Hoberg & Phillips, 2016).

A company that becomes a one-stop shop for all its clientele needs is able to have loyal customers with repeat sales. The success of brands like in other industries is dictated by good marketing strategies and quality of the product (Waldman & Jensen, 2016). This is valuable as the pharmaceutical companies have to create clear channels of communication to inform their customers of the available products, their prices, usefulness of these products, who are their distributors plus their available contacts. Companies seeking to improve their performance and realize high sales revenues increase in market share and high returns on investment must set aggressive marketing strategies that would make their brand popular. This is possible through participation in exhibitions, and advertisement in medical journals. The choice of marketing capability is critical because marketing is the link between the company as its customers

2.3.3 Dynamic Capability

Dynamic capability refers to a firm's ability to sense changes in its operating environment, seize emerging opportunities, and reconfigure internal and external resources in response to changing market, technological, regulatory, and competitive conditions. In strategic management, the concept explains why some firms are able to remain competitive under uncertainty while others decline despite possessing valuable resources. Unlike ordinary capabilities, which support the efficient performance of existing routines, dynamic capabilities enable firms to renew, adjust, and transform their resource base in line with environmental demands. This distinction is important in the pharmaceutical industry because firms operate in a context where regulation, technology, customer expectations, supply chains, and competition change continuously. Therefore, dynamic capability is considered a higher-level strategic capability that enables firms to adapt and sustain performance in changing environments (Teece, 2018; Schilke et al., 2018).

The first major dimension of dynamic capability is sensing. Sensing refers to the ability of a firm to identify, interpret, and understand changes in its external environment. It involves environmental scanning, market intelligence, competitor analysis, regulatory monitoring, customer feedback systems, and the ability to recognize emerging opportunities and threats. In pharmaceutical companies, sensing may include monitoring changes in medicine demand, public health priorities, import patterns, quality requirements, procurement procedures, new technologies, and regulatory reforms. This capability is important because pharmaceutical firms that detect change early are better positioned to respond before competitors or before environmental pressure negatively affects performance. In this study, sensing is therefore reflected in the firm's capacity to scan the pharmaceutical environment, identify market opportunities, and recognize threats that may affect competitiveness and performance (Kump et al., 2019; Teece, 2018).

The second dimension of dynamic capability is seizing. Seizing refers to the firm's ability to mobilize resources and take strategic action after opportunities or threats have been identified. A firm may sense an opportunity, but performance can only improve when the firm acts on that opportunity through investment, innovation, restructuring, product development, market expansion, or process improvement. In the pharmaceutical industry, seizing may involve adopting new technologies, improving distribution systems, investing in quality assurance, responding to regulatory changes, forming partnerships, developing new products, or entering new market segments. This dimension is particularly important because pharmaceutical firms must make timely and resource-sensitive decisions in order to remain competitive. Therefore, in this study, seizing is understood as the ability of pharmaceutical companies to convert environmental knowledge into strategic decisions and actions that improve firm performance (Teece, 2018; Schilke et al., 2018).

The third dimension is transforming or resource reconfiguration. This refers to the ability of a firm to renew its internal structures, routines, processes, and resources in response to changing environmental conditions. Transformation may include reorganizing departments, redesigning operational processes, reallocating resources,

retraining employees, adopting digital systems, improving supply chain coordination, or changing decision-making structures. In pharmaceutical companies, reconfiguration is important because firms must continuously align their internal operations with changing market and regulatory expectations. For example, changes in product registration requirements, quality standards, distribution systems, and customer expectations may require firms to adjust their processes and resource allocation. Thus, dynamic capability enables pharmaceutical companies to move beyond rigid routines and develop flexible systems that support adaptation, resilience, and improved performance (Kump et al., 2019; Bitencourt et al., 2020).

Dynamic capability is especially relevant to pharmaceutical companies because the industry is knowledge-intensive, highly regulated, and strongly affected by technological and market changes. Pharmaceutical firms must respond to product innovation, changing treatment needs, quality assurance requirements, price and access pressures, supply chain risks, and competition from both local and multinational firms. In such an environment, firms cannot rely only on existing resources, past experience, or traditional operating routines. Instead, they must continuously review their strategies, update processes, strengthen partnerships, and align internal competences with external demands. This makes dynamic capability a suitable variable for the present study because it captures the adaptive ability required for pharmaceutical firms to survive and perform in a demanding business environment (Schilke et al., 2018; Masinde et al., 2023).

In the Kenyan pharmaceutical sector, dynamic capability is particularly important because firms operate within a changing policy, regulatory, and market environment. Pharmaceutical companies in Kenya face increasing pressure to improve access to medicines, strengthen distribution efficiency, comply with regulatory requirements, respond to competition, and participate in local manufacturing and regional supply opportunities. These demands require firms to sense environmental changes, seize emerging opportunities, and reconfigure resources to remain effective. For instance, a company that identifies new procurement opportunities must also have the internal capacity to adjust supply systems, mobilize working capital, comply with regulatory conditions, and deliver products reliably. Therefore, dynamic capability supports

performance by enabling pharmaceutical firms to respond strategically to the realities of the Kenyan market (Masinde et al., 2023; Teece, 2018).

Dynamic capability is also closely linked to innovation and organizational learning. Firms that are able to learn from customers, regulators, suppliers, competitors, and internal performance data are better positioned to renew their products, processes, and strategies. In pharmaceutical companies, learning may take place through staff training, customer feedback, regulatory audits, market research, supplier interaction, and quality improvement processes. This learning becomes valuable when it is translated into improved routines, better decision-making, and stronger market responsiveness. Therefore, dynamic capability does not only involve reacting to external change, but also building internal learning systems that help firms anticipate and manage change more effectively. This makes dynamic capability relevant to performance because firms that learn and adapt continuously are more likely to improve efficiency, customer satisfaction, market share, and return on investment (Kump et al., 2019; Bitencourt et al., 2020).

Dynamic capability further strengthens the relationship between other strategic capabilities and performance. Technological capability may enable a firm to use modern systems, but dynamic capability determines whether the firm can upgrade or reconfigure those systems when conditions change. Marketing capability may help a firm understand markets and customers, but dynamic capability enables the firm to adjust its market strategy when customer needs, competition, or distribution channels shift. Human resource capability may provide skilled employees, but dynamic capability enables the firm to redeploy skills, support learning, and restructure work processes when new strategic demands emerge. Therefore, dynamic capability complements the other capabilities in this study by explaining how pharmaceutical firms adapt, renew, and integrate their capabilities to improve performance (Schilke et al., 2018; Teece, 2018).

In this study, dynamic capability is measured through environmental scanning, opportunity identification, strategic responsiveness, resource reconfiguration, process renewal, and adaptation to regulatory and market changes. These indicators

are appropriate because they reflect the three core dimensions of sensing, seizing, and transforming. Environmental scanning and opportunity identification represent the sensing dimension, while strategic responsiveness represents the seizing dimension. Resource reconfiguration, process renewal, and adaptation to regulatory and market changes represent the transforming dimension. These measures make the concept observable and suitable for empirical analysis among pharmaceutical companies in Kenya. Therefore, dynamic capability is expected to have a positive influence on firm performance by improving adaptability, innovation, responsiveness, resilience, and the effective use of organizational resources (Kump et al., 2019; Masinde et al., 2023).

Overall, dynamic capability provides a stronger strategic explanation than pricing capability for the present study because it captures the broader ability of pharmaceutical firms to respond to environmental change. While pricing remains an important managerial activity, dynamic capability is more suitable as a strategic capability because it explains how firms adjust their strategies, resources, and processes in changing business conditions. In the pharmaceutical sector, where firms face regulatory pressure, technological change, competition, supply chain risks, and shifting customer needs, the ability to adapt is central to sustained performance. Therefore, the inclusion of dynamic capability strengthens the conceptual foundation of the study and provides a clearer basis for examining how strategic capabilities influence the performance of pharmaceutical companies in Kenya (Teece, 2018; Schilke et al., 2018; Masinde et al., 2023).

2.3.4 Human Resource Capability

Human resource capability refers to the organization's ability to attract, develop, deploy, and retain employees whose knowledge, skills, experience, and commitment support the achievement of strategic goals. In pharmaceutical companies, this capability is particularly important because the industry depends on technically competent and adaptable personnel who can operate within demanding environments of product development, manufacturing, quality assurance, regulation, distribution, and customer engagement. Human resource capability therefore goes beyond staffing

alone; it includes the systems and practices through which firms build staff competence, encourage learning, support innovation, and align employee capabilities with organizational performance. Recent literature shows that human resource systems strengthen organizational performance when they promote knowledge sharing, trust, autonomy, and continuous capability development within healthcare and knowledge-intensive settings (Malik et al., 2024; Arokiasamy et al., 2024).

Recent thinking on workforce strategy also shows that firms increasingly compete on the basis of skills, internal capability-building, and strategic deployment of talent rather than on headcount alone. In pharmaceutical and healthcare-related settings, relevant human resource capability includes employee knowledge and technical skills, job-related experience, regulatory and quality-management competence, training and development, and the ability to learn and innovate continuously. In this study, human resource capability is therefore conceptualized through staff training and development, employee knowledge and skills, employee experience and competence, organizational learning, and innovation. These measures are broader and more appropriate because they capture the core human competences that enable pharmaceutical firms to execute strategy, adapt to industry change, and improve performance (Stonier & Jones, 2025; Collings & McMackin, 2025; Hosen et al., 2024).

2.3.5 Firm Characteristics

The operational and demographic factors that make up a firm's internal environment are known as company characteristics. The traits of the corporation have been outlined and include turnover, revenue growth, asset growth, leverage, liquidity, and firm size. According to Cordeiro and Tewari (2015), other factors include ownership arrangements, board composition, firm age, dividend payments, revenue, and accessibility to financial markets as well as growth prospects. According to Zatezalo and Gray (2014), small firms are more innovative than larger firms although their implementation of innovation may be slower than larger firms due to lack of enough resources. Also, smaller firms are mostly run by entrepreneurs who assume more risk in their undertakings.

The freer cash flow a company has, the more it invests in capital and hence the higher the financial performance. Smaller firms are moving towards rampant growth, making use of most or all of the free cash flow available in a bid to improve financial performance. Cash flow from operations and investment have a greater link with small and medium-sized businesses, which are often in the development stage. Older businesses often rely more on internal capital than medium-sized companies for the funding of their corporate expenditures, and the size impact is neutral (Muttakin, Khan & Subramanian, 2015).

New companies need time to adapt to the environment. A new company needs to catch up with an older company when the performance of the new company is lower than that of the old (existing) company in order to be competitive on the market. As a result of high free cash flow, new firms are expected to show higher productivity growth rates than older firms. The company's age is therefore negatively correlated with the rate of productivity growth as older companies have lower free cash flows (Mas-Tur & Soriano, 2014). The study will measure the firm characteristics through firm size, management top structure, capital and organizational commitment.

2.3.6 Performance of Pharmaceutical Companies

Performance of pharmaceutical companies refers to the extent to which firms achieve desired market, financial, and customer-related outcomes over time. In the pharmaceutical industry, performance should not be understood in purely financial terms because firm success is influenced not only by profitability, but also by market position, customer response, process effectiveness, and the firm's ability to operate within regulatory and quality requirements. Recent literature on performance measurement in pharmaceutical and other organizations shows increasing support for integrated and multidimensional approaches, rather than reliance on a single financial indicator alone. This broader view is particularly relevant to pharmaceutical firms because their strategic outcomes are shaped by both financial returns and non-financial results linked to market and stakeholder response (Deng et al., 2025; Madsen, 2025).

Kaguri (2013) studied firm characteristic from the classification of financial and non-financial perspective. The focus was on financial characteristics like the level of liquidity, leverage, diversification and size. It is noted that firm size is a key component measure of sunk costs in an organization besides measuring the level of concentration and integration. Large firms are for instance likely to have higher skills specialization and functions, more bureaucracy as more centralization of operation (Cilingir & Basfirinci, 2014). Leverage on the other hand measures the mix between debt and equity in financing of business operations. This gives rise to agency costs which need to be closely managed for optimal organizational performance (Muttakin, Khan & Subramanian, (2015). Brealey, Myers and Allen (2013) indicate that intense competition has resulted in the drift towards firms restructuring and a review of strategies in order to dominate the markets. Among employed the strategies for competitive positioning are mergers and acquisitions of competing firms in order to improve firms' efficiency, grow in size and improve performance. This research will emphasize on the following company characteristic in order to draw conclusions: the period of operation of the firm; asset base; market size and top management structure on their effect on the performance of quoted pharmaceutical companies in Kenya. Lelenguiya (2016) performed a strong distinctive survey on the impacts on the economic results of Kenya's quoted business banks. According to the study, if all the independent variables were held at zero, an operating period unit will lead to a -0.04 decrease in financial performance of the Kenya quoted commercial banks. However, a unit increase in the asset base will increase financial performance by 0.122 units and market size will result in a decrease of 0.268 units of economic performance whereas a unit increase in board characteristics will increase financial performance by 0.389 units for quoted commercial banks in Kenya. P values of the company characteristics considered were greater than 0.005, which is greater than the rejection level of 0.05, thus the study can take the null hypothesis to mean that the company characteristic is not significant in influencing the financial performance of quoted commercial banks in Kenya. The study discovered that operating period unit increase will cause a -0.04 decrease in the financial performance of the Kenya quoted commercial banks if all other independent variables are taken at zero. For instance, a unit increase in the

asset base leads to 0.122 increase in financial performance and a unit increase in market size leads to a unit decrease in economic performance while a unit increase in board carrying characteristics leads to a unit increase in the financial performance of quoted commercial banks in Kenya. The study found that the company characteristics considered have P values greater than 0.005, which implies that the study accepts the null hypothesis and concludes that the company characteristic does not influence the financial performance of the quoted commercial banks in Kenya. The study recommends that managers need to analyze financial performance over time and establish ideal asset base, board characteristic, market size, and develop relevant strategies to maximize productivity and improve the performance of Kenya's quoted business banks.

Pharmaceutical manufacturers are finding it difficult to attain World Health Organization prequalification because of financial and technical constraint, UNIDO (2015). The Kenya Economic Survey of 2015 estimated that the contribution to the GDP by the manufacturing sector stands at 11% which explains the favorable environment policies and campaigns in place to encourage the growth of the sector. Qiu and La (2016) conducted a study on firm features as determinants of Australia's capital structures. This study examines Australian firms' capital structures in relation to firm features. Using an unbalanced panel of 367 firms observed over a 15-year period from 1992 to 2006, the results of the panel data regression show that the debt-asset ratio is positively linked to the tangibility of assets but is inversely linked to growth prospects and business risk measured by unlevered beta of equity. The study also finds that while leveraged firms are generally more profitable than unlevered firms, profitability lowers the leveraged firms' debt ratio. Firm size does not affect Australian firms' capital structure. These results conform to the pecking order and cost theories of the agency, but contradict the theory of trade-offs.

2.4 Empirical Literature

2.4.1 Technological Capability and Firm Performance

Githua and Muathe (2024) examined whether digital transformation improves the market performance of pharmaceutical micro, small, and medium-sized enterprises

in Kenya. The study focused on pharmaceutical MSMEs in Nairobi City County and specifically assessed four digital dimensions: e-procurement, e-marketing, e-payment, and telemedicine. Methodologically, the authors used a cross-sectional descriptive design and surveyed 122 MSMEs drawn from an initial target population of 175 firms, using proportionate and simple random sampling. The study then applied correlation and multiple regression analysis after testing the questionnaire for validity and reliability. The findings showed that all four digital transformation dimensions had a significant positive effect on market performance. The study is important because it demonstrates that technological capability in pharmaceutical firms is not limited to factory machinery or product design; it also includes the digital systems through which firms procure, transact, reach customers, and deliver health-related services. In practical terms, the study suggests that firms that adopt digital processes become more efficient, widen their market reach, and improve customer responsiveness, all of which support stronger performance. For the present study, this article is highly relevant because it shows that technological capability has measurable performance implications in the Kenyan pharmaceutical context. However, its focus is limited to MSMEs and mainly market performance, whereas the current study covers a broader category of pharmaceutical companies and uses a wider performance lens.

Arukwe and Akpomi (2025) investigated the relationship between technological capability and competitiveness among pharmaceutical manufacturing companies in South-South Nigeria. Their study is useful because it places technological capability directly within a pharmaceutical manufacturing setting rather than a general industrial context. The authors framed competitiveness using three outcome indicators: market share, cost leadership, and innovativeness. Their findings were strong and statistically significant across all three dimensions. Specifically, technological capability had a significant positive relationship with market share ($p = .000$), cost leadership ($\rho = .586, p = .001$), and innovativeness ($\rho = .742, p = .000$). The study therefore concluded that technological capability is positively and significantly related to pharmaceutical firm competitiveness. Although the dependent variable was competitiveness rather than firm performance, the overlap is analytically important because market share, cost efficiency, and innovation, is of

critical value. The limitation, however, is that the study is based in Nigeria and emphasized competitiveness rather than the broader composite performance.

Hu and Xu (2023) explored the impact of digital transformation on the financial performance of Harbin Pharmaceutical Group through a case-study approach. Although this was a single-firm study rather than a large-sample survey, it remains relevant because it examined technological transformation inside a real pharmaceutical enterprise and linked it directly to performance indicators. The study also reinforces the idea that technological capability is not merely about adopting digital tools but about transforming the way a pharmaceutical firm function internally. However, its methodological limitation is clear: because it is a single-firm case, the findings cannot be generalized as strongly as large-sample studies.

Olubunmi et al (2015) studied the application of Information and Communication Technology (ICT) in pharmaceutical product marketing in Nigeria. Data for the study was obtained from 76 pharmaceutical firms in southwest Nigeria which comprised of about 95% of the pharmaceutical companies that were into manufacturing of drugs in Nigeria. The study found that pharmaceutical companies were using considerable ICT for their product marketing especially customized software. Parida, Oghazi and Cedergren (2016) conducted a study on how dynamic capabilities of ICT can be influenced. The results show that ICT capabilities have an impact on small firms ' dynamic capabilities. More specifically, the use of ICT for internal efficiency positively influences the ability to adopt, the collaborative use of ICT positively influences the ability to network, and the use of ICT for communication positively influences both adaptive and innovation capabilities. Consequently, the results suggest that the various components of ICT capabilities facilitate the development of the various organizational capabilities that together represent dynamic capabilities and can thus contribute to the competitive advantage of a small business.

Wamae and Kungu (2014) assessed the pharmaceutical manufacturing in Kenya focusing on the key trends and developments. They study examined the influence of Information Communication Technology adoption in marketing of pharmaceutical

products by pharmaceutical manufacturing firms in Nairobi and specifically investigated the influence of email, website and computerized communication and social media in marketing of pharmaceutical products. From the findings, it was concluded that employee competences in email, website and computerized communication was poor and therefore negatively affected ICT adoption in marketing. It is necessary for the companies to enhance staff competences in use of email, websites and computerized communication. It was found that social media could help to improve the marketing of the products.

According to Wamae and Kungu (2014), there was need to consider employees' opinions on how to enhance social media adoption in marketing. The companies embraced social media marketing but the employees did not possess necessary knowledge to embrace the technology. In their recommendation, they suggested that it was necessary for the staff to have experience in ICT adoption in marketing of the pharmaceutical products in order to better their performance. The companies should come up with developmental opportunities in form of workshops to enlighten the employees on how to benefit from ICT adoption in marketing. Future studies in this area are required to provide more insights into the nature and score of relationships between adoption of ICT technology and performance of pharmaceutical companies in Kenya.

Magutu, Aduda and Nyaoga (2015) sought to determine whether supply chain technology moderated the relationship between supply chain strategies and firm performance using large-scale manufacturing firms in Kenya. They found that the social media has recently transformed how corporate interact. It has enabled firms to interact promptly with shareholders, bringing change of the usual same output of communication in organizations, to a prolonged negotiation between organization and customer. This study also aimed at analyzing the association between social media and marketing, specifically concentrating on adoption of social media for Public relations and examining the variations that had happened in pharmaceutical business from using social media. Marketing by using social media comprises the adoption of it in marketing, public relations and customer service, showing a conjunction of these conventionally distinct organization departments.

Elijah, Bwana and Magoyi, (2014) examined the effects of information communication technology on the procurement of pharmaceutical drugs in public hospitals in Kenya. Their findings indicated that firstly; websites had no less than different devotions. The first is a connection in the existing off-line services, targeting maximum acceptance of the services. The second is to act as a change, seeking to take the pressure away from these off-line services by diverting users to other, usually web-based resources where their needs can be met. The third is an improvement of diversion, seeking to deliver on-line guidance within the site itself. There exist two-way of communicating that can be done with customers. Outbound internet-based communications being the main one where a company may adopt website to collect data about clients and use the email to interact with customers through sending classified information. Second, is the incoming internet based on communication which offers the capability for clients to query and solve the challenges by transferring e-mails or web-based form-filling. Most importantly, the internet can be adapted to upkeep the purchase choice with innovative methods

Madani, et al (2014) conducted a study to identify the factors affecting technological capabilities of Iran's pharmaceutical industry for accelerating the transition to bio pharmaceuticals. Results derived from the analyzed data shows that the national technological and scientific environment, business environment, infrastructure and legal requirements, and international collaboration were the most important factors affecting the technological capabilities of Iran's pharmaceutical industry.

Ngari (2016) conducted a study and titled it; intellectual capital and business performance of pharmaceutical firms in Kenya. The study revealed a changing model of pharmaceutical innovation in the country where in-house research and development has given way to the process of intellectual capital acquisition. However, this process is far from adequate; while the rights to a compound are acquired the associated human capital is often overlooked. The innovative knowledge within internal and external collaborations constitutes an integral aspect of the human capital within the organization. Capturing and encouraging this knowledge of collaboration through social Knowledge Management tools such as discussion forums, Web Blogs and Wikis would thus appear to be a prudent strategy.

2.4.2 Marketing Capability and Firm Performance

Ngugi (2025) examined the relationship between marketing strategies and the performance of selected pharmaceutical manufacturing firms in Nairobi City County, Kenya. The study is particularly useful because it is recent, Kenya-based, and focused directly on pharmaceutical manufacturers. Using a sample of 100 respondents, the study investigated how product, price, promotion, and place strategies influenced firm performance. Regression analysis showed that the overall marketing model significantly explained performance differences, and the individual coefficients revealed that product strategy had a positive significant effect ($\beta = 0.201$, $p = 0.001$), price strategy also had a positive significant effect ($\beta = 0.142$, $p = 0.034$), and place strategy had the strongest positive effect ($\beta = 0.531$, $p = 0.000$), while promotion strategy was not significant ($\beta = 0.038$, $p = 0.619$). The study therefore gives a more nuanced view than literature that treats marketing capability as a single broad construct. However, the study strengthens the case that market-facing capabilities affect performance in pharmaceutical firms, but it also suggests that marketing capability should be unpacked carefully to avoid assuming that all marketing activities generate the same performance returns.

Wanjiku and Maina (2025) investigated the nexus between integrated marketing communication strategies and the market performance of registered pharmaceutical companies in Nairobi City County, Kenya. The study focused on four specific communication-related dimensions: advertising, direct marketing, sales promotion, and personal selling. The correlation results showed positive relationships between these strategies and market performance, while the regression results indicated that the four independent variables jointly explained 65.61% of the variation in market performance ($R^2 = 0.6561$), with the overall model statistically significant at $p = 0.000$. This study is especially relevant because it moves beyond broad marketing rhetoric and examines coordinated communication activities as concrete drivers of pharmaceutical market performance. It is also helpful in illustrating one mechanism through which marketing capability may translate into results: when firms integrate communication tools effectively, they improve visibility, customer engagement, and market presence. Its main value to the current study lies in offering recent Kenya-

specific pharmaceutical evidence that market-oriented capabilities matter. Its limitation is that the dependent variable is market performance rather than the wider financial and customer-related performance construct in your thesis.

Liang, Du, and Hua (2025) examined the effect of digital marketing capability on firm performance using panel data from Chinese A-share listed manufacturing firms between 2010 and 2023. The study found a significant positive relationship between digital marketing capability and firm performance, and further showed that this relationship was mediated by R&D capability and production capability. The authors also found that the positive effect was stronger in firms operating in highly marketized regions, competitive industries, and digitally advanced environments. However, study is not pharmaceutical-specific, but it is highly relevant conceptually because it shows that marketing capability can improve performance not only directly but also indirectly through better innovation and operations.

Ngamau (2016) conducted a research aiming to identify the problems faced by suppliers in the marketing of pharmaceutical products in Kenya. The findings show that the challenges faced by pharmaceutical companies are lack of sufficient product knowledge from distributors and their clients, competitiveness from other sellers offering similar products at lower prices, business timelines and commission-based wages therefore a huge pressure to deliver, regulatory hindrances from the intensive marketing of pharmaceuticals and the collection of funding from the pharmaceutical company to undertake medical education events. Moreover, given the steady demand for its pharmaceutical products, the underlying trends facing the industry and reorganizing the pharmaceutical market, where demand for drugs is likely to increase most quickly in the years to come, are varied; policymakers are starting to focus on preventive measures rather than treatment; regulators are becoming threat-averse. In order to maintain market growth and success, the pharmaceutical industry needs to adjust its marketing and distribution processes.

Mbugua (2014) assessed the personal selling strategies and performance of pharmaceutical firms in Nairobi, Kenya. Results suggested that salespeople memorized and delivered sales pitches verbatim when they utilized a script-based

selling strategy. Script-based selling is also called canned selling. The term canned comes from the fact that the sales pitch is standardized, or straight out of a can. According to the Alvesson and Sveningsson (2015), the script comprises a logical set of questions and when the salesperson meets an obstacle, they remember what is in the script and methods of overcoming it. The script covers a range of techniques from opening the sales interview to closing techniques. The salesperson will ask the customer a few questions to uncover his or her need, and then provides the details that meet it as spelled out in the script. This approach is used by many telemarketers who are trying to sell an inexpensive product and untrained people are used for this type of selling. The salesperson virtually does all the talking and have no interest in understanding (or satisfying) your needs.

Oyoolo and Bett, (2017) conducted a study to determine the impact of dynamic techniques on the performance of pharmaceutical industry organizations in Kenya, a case of Pharma-Specialties Limited. The study argued that there is need to have a R&D department address product costs, customer expectations & concerns and marketing techniques favorable to bring higher benefits. Companies should adopt strategies to guarantee that drugs are produced and at low costs in order to be able to offer products at the cheapest rate and gain competitive advantage over their competitors. The study concluded that throughout the marketing plan, incorporate information technology where consumers can see what goods they have and even order them online.

2.4.3 Dynamic Capability and Firm Performance

Several recent studies have examined the relationship between dynamic capability and firm performance. Teece (2018) argued that dynamic capabilities are important because they allow firms to adapt their business models and resource configurations in response to changing environments. The study emphasized that firms achieve stronger performance when they are able to renew how they create, deliver, and capture value. This argument is relevant to pharmaceutical companies because the sector is exposed to regulatory changes, technological development, market uncertainty, and changing customer needs. Therefore, pharmaceutical firms that are

able to redesign processes, adjust strategies, and reconfigure resources are more likely to sustain performance than firms that rely only on existing routines.

Schilke, Hu, and Helfat (2018) conducted a content-analytic review of dynamic capabilities literature and found that the concept has become an important explanation of how firms adapt to changing environments. Their review showed that dynamic capabilities influence performance through mechanisms such as innovation, resource reconfiguration, organizational learning, and strategic change. The study is useful to the present research because it clarifies that dynamic capability should not be treated as a general expression of flexibility, but as a structured organizational capability involving identifiable processes and outcomes. However, the review was conceptual and literature-based, meaning that it did not provide direct empirical evidence from pharmaceutical companies in Kenya. This creates a need for sector-specific empirical studies such as the present one.

Kump, Engelmann, Kessler, and Schweiger (2019) developed a scale for measuring dynamic capabilities using the dimensions of sensing, seizing, and transforming. Their work is important because it provides a clearer empirical basis for measuring dynamic capability. The study argued that dynamic capability can be assessed through observable organizational practices, including environmental scanning, opportunity recognition, strategic decision-making, and resource reconfiguration. The study supports the use of indicators such as environmental scanning, opportunity identification, strategic responsiveness, process renewal, and resource reconfiguration.

Bitencourt, Santini, Zanandrea, Froehlich, and Ladeira (2020) conducted a meta-analysis on the extended dynamic capabilities model. Their findings showed that dynamic capabilities are linked to performance and competitive advantage, although the strength of this relationship may vary depending on context, industry conditions, and organizational factors. This is important because it suggests that dynamic capability does not operate in isolation; its effect on performance may be shaped by other conditions such as firm size, capital, management structure, and decision-

making systems. The study therefore supports the inclusion of firm characteristics as a moderating variable in the present thesis.

In the Kenyan pharmaceutical context, Masinde, Otinga, and Miroga (2023) examined dynamic capabilities and the performance of pharmaceutical firms in Nairobi County. The study used a descriptive research design and targeted pharmaceutical firms registered by the Pharmacy and Poisons Board. Its findings established a positive relationship between dynamic capabilities and the performance of pharmaceutical firms. The study further showed that marketing capability, technological capability, managerial capability, and resilience capability contributed to performance among pharmaceutical firms. This study is highly relevant because it was conducted in the Kenyan pharmaceutical sector and therefore provides contextual support for the present study. However, its limitation is that it focused on Nairobi County, while the present study focuses on pharmaceutical companies in Kenya more broadly. In addition, the present study examines dynamic capability as part of a wider strategic capability model that includes technological capability, marketing capability, human resource capability, and firm characteristics as a moderating variable.

Other studies have also supported the positive relationship between dynamic capabilities and organizational performance. Khalil and Belitski (2020), for example, found that dynamic capabilities under information technology governance frameworks contributed to firm performance by improving adaptation and resource utilization. Torres, Sidorova, and Jones (2018) also showed that business intelligence and analytics can enable firm performance from a dynamic capabilities' perspective. These studies are relevant because they demonstrate that dynamic capability is closely connected to information processing, technology use, decision-making, and responsiveness. For pharmaceutical firms, this means that dynamic capability may strengthen performance by improving how firms use information, respond to regulatory and market conditions, and adjust operational processes.

Overall, the reviewed empirical literature shows that dynamic capability is positively associated with firm performance. The literature further suggests that firms perform

better when they are able to sense environmental changes, seize emerging opportunities, and reconfigure resources to match changing conditions. However, the literature also shows that the relationship between dynamic capability and performance may vary by context and industry. This creates a justification for examining the influence of dynamic capability on the performance of pharmaceutical companies in Kenya, especially because the sector operates in a highly regulated, competitive, and changing environment.

2.4.4 Human Resource Capability and Firm Performance

Odhong' (2015) examined the effect of human capital investment on the organizational performance of pharmaceutical companies in Kenya. Although this study is older than the others in this section, it remains very important because it is directly focused on pharmaceutical companies in Kenya and on human-capital-related drivers of performance. The study considered training, education, knowledge management, and skills development as the main dimensions of human capital investment. Its findings showed that these human-capital variables collectively determined organizational performance, and the regression results indicated that the model explained a substantial proportion of performance variation. The study is especially valuable for review because it directly supports the concern that human resource capability should not be reduced to general staffing or vague development language but should include concrete competencies such as knowledge, skills, training, and professional development. This study provides direct empirical grounding for broadening the measures of human resource capability to include employee knowledge and skills, staff development, and experience-related competence. The limitation is obviously its age, but because recent Kenya-pharmaceutical-specific evidence on human resource capability is relatively scarce, the study remains highly useful as contextual support.

Hosen, Hamzah, Ismail, Alias, Aziz, and Rahman (2024) investigated the relationship between training and development, career development, organizational commitment, and work performance. The study collected survey data from 362 frontline employees and used SPSS and SmartPLS to test both direct and mediated

relationships. The results showed that training and development had a significant positive relationship with work performance, career development also had a significant positive relationship with work performance, and organizational commitment played a mediating role in these associations. Although the setting was the hotel sector rather than pharmaceuticals, the study is still useful because it empirically demonstrates how structured capability-building practices translate into better employee performance through both direct and attitudinal pathways. The study also strengthens the view that learning-related HR investments contribute to performance outcomes through internal behavioral processes, which is relevant to pharmaceutical firms that depend on skilled, adaptive, and motivated personnel. Its contextual limitation should be acknowledged, but the empirical findings remain helpful because they speak directly to the performance consequences of training and development.

Tj, Wibowo, and Widjaja (2025) studied the relationship between human capital, competitive advantage, and business performance in Indonesian hospitals. Using survey data from 250 medical-doctor managers and covariance-based structural equation modelling, the study found that human capital positively affected business performance, and also positively influenced competitive advantage, which then mediated the human capital–performance relationship. This article is especially relevant because it moves beyond a simple “HR practices improve performance” statement and shows a more strategic route: human capital strengthens competitive advantage, which then improves performance. It also reinforces the idea that knowledge, skills, and professional expertise should be viewed as strategic organizational assets rather than merely operational HR inputs. For the present study, this empirical evidence is valuable because pharmaceutical firms, like hospitals, operate in knowledge-intensive and highly regulated environments where human expertise is central to quality, compliance, and service outcomes. The study’s limitation is that it is based on hospitals rather than pharmaceutical companies, but the healthcare-sector similarity makes it a credible and relevant comparator for explaining why human resource capability can influence firm performance.

Ngari (2019) conducted a study to determine the connection between Kenyan pharmaceutical companies' commercial success and human capital. The results showed a favorable and significant association between pharmaceutical companies' commercial performance and the three components of human capital—learning and training, expertise and understanding, and innovation and invention. Din et al. (2014) carried out a study to determine how HRM practices affected the SMEs' both financial and non-financial success in Pakistan. All of the pharmaceutical businesses in the Peshawar district were the study's target population. The results demonstrated that the financial and non-financial performance of small and medium-sized businesses is significantly impacted by incentive policies, collaboration, training programs, performance evaluations, and employee engagement in decision-making.

Chuang, Liu and Chen (2015) conducted a study on the effects of Human Resource Capability and internal customer satisfaction on organizational effectiveness. An Internal Customer Satisfaction Survey essentially tests how satisfied internal clients or staff within an organization or team are. Specifically, this survey tests internal service expectations and experiences, be it communication, efficiency and/or responsiveness. Research results indicated that internal customer satisfaction, which is highly regarded in corporate marketing, has been affected mainly by group orientation, active participation and substantive commitment. The effects of learning, pay for success, and dedication to consistency, however, were not as powerful as anticipated. This may be because the undertakings that are state-owned companies, workers with lifetime rewards are covered, the essence of the job is set and the wage system is rigid, according to the outcomes of the research.

Vishnu and Kumar Gupta (2014) investigated the intellectual capital and performance of pharmaceutical firms in India and concluded that market players need to work with local partners to strengthen and leverage data collection to inform the opportunity. Information is also crucial to sustain and build the opportunity moving forward, just as robust data has become a cornerstone of care provision and quality improvements in traditional markets. According to Vishnu and Kumar Gupta (2014), most of the major pharmaceutical MNCs have had a presence in Africa for a number of years. In general, they revealed, success strongly correlated with linguistic

and economic links, where existing business ties stem from colonial history. French companies, for example, have typically performed best in predominantly Francophone North and West Africa, while companies from the UK and former British colonies see the healthiest revenues in predominantly Anglophone East and Southern Africa.

Ngari (2016) studied the relationship between Kenyan pharmaceutical companies' commercial success and their intellectual capital. The study revealed a changing model of pharmaceutical innovation in the country where in-house research and development has given way to the process of intellectual capital acquisition. However, this process is far from adequate; while the rights to a compound are acquired the associated human capital is often overlooked. The innovative knowledge within internal and external collaborations constitutes an integral aspect of the human capital within the organization. Capturing and encouraging this knowledge of collaboration through social Knowledge Management tools such as discussion forums, Web Blogs and Wikis would thus appear to be a prudent strategy.

2.4.5 Firm Characteristics and Firm Performance

Mutunga, Munga, and Mbebe (2024) examined the influence of organizational structure on the performance of pharmaceutical manufacturing companies in Nairobi County. The study applied a descriptive research design and used questionnaire data analyzed through both descriptive and inferential statistics. The results showed that organizational structure had a positive and significant effect on performance, with $\beta = 0.351$ and $p = 0.001$. The study further reported that the model had explanatory value, with the regression results indicating a statistically significant overall relationship between organizational structure and performance. It shows that management arrangements, reporting relationships, authority levels, and decision-making flexibility are not merely background features but actual performance-relevant conditions. A limitation is that the study considered organizational structure as a direct predictor rather than a moderator, but it still provides strong evidence that structural characteristics matter for pharmaceutical firm performance.

Chirchir, Kalui, and Tari (2024) investigated the effect of firm characteristics on the financial performance of non-financial firms listed at the Nairobi Securities Exchange, Kenya. Using panel data from 33 listed firms, the study examined asset tangibility, firm growth, and firm age as the main firm-characteristic variables and measured financial performance using return on assets (ROA). The findings showed a significant negative effect of asset tangibility on ROA, a significant positive effect of firm growth on ROA, and a significant negative effect of firm age on ROA. This study is useful because it demonstrates that firm characteristics do not all influence performance in the same direction. Some characteristics may support performance, while others may constrain it, depending on the strategic and financial logic of the sector. It also supports the argument that organizational differences in scale, maturity, and capital-related structure may alter how firms perform and how they respond to strategic capabilities. Although the study was not pharmaceutical-specific, it is Kenya-based and methodologically relevant, making it a useful comparator for your moderating-variable discussion.

Nkasi and Philemon (2025) examined the relationship between firm attributes and the financial performance of listed manufacturing companies in Nigeria. The study used a longitudinal design with fixed-effects regression and measured financial performance using return on assets. According to the findings, firm size had a significant positive effect on ROA, while liquidity also had a positive and significant effect on ROA. The authors concluded that optimal firm size, prudent debt management, and efficient liquidity practices are important in strengthening profitability. It supports the view that firms with stronger scale and better financial slack may be better positioned to achieve superior performance. Although the Nigerian setting differs from Kenya, the manufacturing context and the focus on firm-level attributes make the study a useful empirical reference for the performance relevance of firm characteristics.

Ajibolade and Oyewo (2017) conducted a study using the Balanced Scorecard on the firm's features and performance disclosure in Nigerian banks' annual reports. This study used the balanced scorecard (BSC) model to investigate the influence of four company characteristics on the extent of performance disclosures by Nigerian banks.

The study population consisted of publicly listed banks operating in Nigeria between 2012 and 2014. In terms of the general BSC metric based on the four corporate variables analyzed, it was found that firms did not differ substantially in the amount of performance reporting in any of the four BSC viewpoints. In view of the fact that annual reports are the mainstream media used to communicate firm performance to the public, it was recommended that preparers of such documents consider disclosing financial and non-financial performance; this will not only provide a comprehensive basis for assessing organizational performance, but will also help to disseminate the influence created by informatics asymmetry

In Nakuru, Kenya, Kisengo (2014) studied how corporate characteristics affected the success of the microfinance sector. Although microfinance was created to support small enterprises, it still provides the financing that entrepreneurs require. The association between business attributes and MFI performance was investigated using the correlation. The impact of corporate characteristics on microfinance success was ascertained by regression analysis. The results showed that firm qualities significantly improved MFI performance. Structure-related characteristics had the greatest impact on microfinance performance while capital-related characteristics had the least effect. Practitioners are recommended to address and nurture firm features to improve the sector's performance.

Beatrice and Amahalu (2017) conducted an effective study of firm features on the financial performance of quoted deposit money banks in Nigeria. This study evaluates the extent to which firm features affect the financial performance of quoted deposit money banks in Nigeria from 2010-2015. Results showed that firm characteristics have a positive and statistically significant effect on financial performance at a significant level of 5 percent. Based on these findings, the study recommends, among other things, that banks should manage adequately how to reinvest their resource to avoid any form of resource mismanagement that can guarantee their existence in business.

2.5 Critique of Reviewed Literature

Most of the studies have shown how various capabilities help firms in meeting different goals. However, few of the studies have demonstrated the effects of these capabilities on firm performance. In Olubunmi et al (2015), the firms selected for the study represented the various types of pharmaceutical firms in Nigeria; those that import, firms that manufacture through contacts as well as home grown drug manufacturers. This means the findings could be generalized about the drug industry in Nigeria. However, the study findings did not show the effect of the use of the ICT in marketing on the overall performance of the industry. Kale and Little (2007) did not include the relational influence of capability creation model in helping the development of technological capability. The study also failed to show a direct link between technological capability and performance of Indian pharmaceutical firms. Kale (2012) only used firms which had filed New Drug Application (NDA) in both USA and India as case studies, leaving out a big number of Indian pharmaceutical firms.

Some studies focus directly on the objectives mentioned in the study, such as those by Ngari (2016), Olubunmi et al. (2015), and Ngamau (2016). However, some studies are loosely related or tangentially connected, such as the studies on life insurance firms by Kaguri (2014), and microfinance by Kisengo (2014). Several studies, such as Olubunmi et al. (2015) and Wamae and Kungu (2014), explore technological capability in the pharmaceutical sector, directly addressing the first objective. However, a more detailed exploration of how technology specifically influences performance in the pharmaceutical industry in Kenya might be needed to align more closely with your objective.

The studies by Olubunmi et al. (2015), Wamae and Kungu (2014), Ngamau (2016), and Njuki et al. (2014) provide valuable insights into marketing capability. They explore marketing strategies, communication tools, and challenges, but they might lack depth in demonstrating the direct influence on performance. The works of O'Meara et al. (2013) and Gereffi (2017) offer insights into pricing capability and its specific challenges in foreign countries. However, the connection between pricing

capability and performance in the Kenyan pharmaceutical sector may require further exploration.

The studies by Ngari (2019) and Din et al. (2014) discuss HR practices and intellectual capital. While Ngari's work focuses specifically on pharmaceutical firms in Kenya, Din's study on Pakistani SMEs might only provide peripheral insights. A closer examination of how HR capability influences performance in the Kenyan pharmaceutical sector might be warranted. Few studies, such as those by Kaguri (2014) and Kisengo (2014), discuss firm characteristics in different contexts. They don't specifically address pharmaceutical companies or the moderating effect on strategic capabilities and performance in Kenya. This area seems under-represented and might need more focused literature.

The studies mainly focus on Kenya, Nigeria, India, and Pakistan. The inclusion of diverse geographical locations may broaden the perspective, but there may be issues with applying findings from different economic and cultural contexts directly to the Kenyan pharmaceutical industry. The reviewed literature covers various aspects of strategic capabilities and performance, but there are areas where it could be more aligned with the specific study objectives, especially regarding the direct influence of these capabilities on performance and the moderating effects of firm characteristics. More focused and recent literature, especially concentrating on the Kenyan context, would strengthen the research base.

2.6 Research Gap

From reviewed literature, different studies have been done in different countries in countries in which the available literature may not be applicable in Kenya as the market dynamics are different. Several of the studies have demonstrated the effects of these capabilities on firm performance. Olubunmi et al (2015) did not show the effect of the use of the ICT in marketing on the overall performance of the industry, a research gap the current study will fill by establishing the effect of ICT capability on the performance of Kenyan pharmaceutical companies. Ida (2015) only focused on the explorative capabilities of pharmaceutical firms, capabilities not available to all pharmaceutical firms especially in the developing countries, a research gap to be

filled by the current study that will examine both explorative and exploitative (ICT/innovative) capabilities by Kenyan pharmaceutical firms. Parida, Oghazi and Cedergren (2016) only focused on how dynamic capabilities of ICT can be influenced but did not include the other factors of strategic capabilities in the model. Magutu, Aduda and Nyaoga (2015) sought to determine whether supply chain technology moderated the relationship between supply chain strategies and firm performance but focused exclusively on the technological capabilities influence on the firm performance.

Wamae and Kungu (2014) only focused on the influence of ICT on marketing but did not try to find out the effect of ICT capability on the performance of the manufacturing firms. Moreover, the study only selected pharmaceutical manufacturing firms in Nairobi. Aitken (2016) looked on the regulatory side of pharmaceutical firms but did not establish the various innovative capabilities developed by the firms. In their study, Elijah et al. (2014) focused on a narrow area of ICT use on a limited field of procurement of drugs. Furthermore, ICT capability of the pharmaceutical firms supplying these public hospitals is not shown. Madani, et al (2014) conducted a study to identify the factors affecting technological capabilities of Iran's pharmaceutical industry for accelerating the transition to bio pharmaceuticals, this study however focuses on Kenyan pharmaceuticals. Lule (2011) conducted a research on the effectiveness of the marketing strategies on the sales performances of pharmaceutical companies operating in Nairobi. However, the study did not overall performance of the pharmaceuticals rather focused on sales performances.

Njaaga and Waithira (2017) did a study on the influence of generic business strategies on 20 pharmaceutical manufacturing companies' performance located in Nairobi City. However, the study did not put into consideration the pharmaceutical distributor firms and also did not focus on human resources capabilities influence on performance. Besides, the study was limited to pharmaceutical firms in Nairobi city. A research by Ng'ang'a (2018) examined how strategic agility affected the competitiveness of pharmaceutical companies in Kenya. The impact of the different pricing capacities and the degree to which they affect pharmaceutical company

profitability are not adequately established by the study. Since Njuki, Mwangi, Wanjiru, and Mwirigi (2014) only examined marketing strategies, there is a model gap in their analysis of communication methods for marketing and sales results in Kenyan commercial organizations.

Oyoolo and Bett (2017) investigated how dynamic approaches affected Pharma-Specialties Limited's performance in Kenyan pharmaceutical industry organizations. Because it was a case research, the findings cannot be applied to all medications. Karimi (2014) examined the connection between business performance and pricing flexibility in Kenyan pharmaceutical companies. This study just looked at how prices affected pharmaceutical companies' achievement; it didn't look at how strategic skills affected performance, which is the primary subject of the present study. Liozu and Hinterhuber (2013) and Nafuna et al. (2019) conducted an examination on pricing orientation and capabilities effects on firm performance. This study focused on the pricing capabilities effect of the performance, whereas this study will focus on additional factors of technological and marketing capabilities.

Vugigi (2017) conducted a study, and the goal of this research was to evaluate the pharmaceutical industry in Kenya in order to predict the adequacy of domestic production. The gap in this study was that the influence of human resources such as learning and innovation on performance of the pharmaceutical firms was overlooked. Murule (2014) also researched on the Tactical Approaches that the domestic pharmaceutical companies made to shifts in the pharmaceutical industry. Nevertheless, human resourceful tactics of learning, training and innovation strategies were not the central focus of the study in terms of its influential contribution to the performance of pharmaceutical companies. However, Ngamau (2016) examined challenges in the marketing of pharmaceutical products in Kenya, and in particular in the distribution of pharmaceuticals. The personal selling strategies and performance of pharmaceutical firms in Nairobi was assessed by Mbugua (2014). However, the study did not concern strategic capabilities but concerned the personal selling initiatives of sales.

Ningala (2014) conducted an analysis aimed at identifying approaches deployed by major pharmaceutical companies in Kenya to react to competitive rivalries in the pharmaceutical industry. The gap in this study was insufficient knowledge on the possible actions that can be taken by the pharmaceutical companies to retain the competitive advantage and promote performance. Ouma (2018) examined the effect of value and quality disciplines technique on pharmaceutical industry development in Kenya. The gap in the study was that it did not focus on the contributing factor of technological capability to the performance in the pharmaceutical industry.

Chuang, Liu and Chen (2015) researched on the effects of Human Resource Capability and internal customer satisfaction on organizational effectiveness but did not focus on other strategic capabilities. Din et al (2014) conducted a research to establish the impact of HRM practices on the financial and non-financial performance of the SMEs in Pakistan, which is a different economy in comparison with Kenya and therefore the results cannot be generalized for Kenya. Marshall, Baker and Finn, (2008) did a study on the various perspectives on human resource capability towards customer satisfaction. The study however focused on HR capabilities while this study has an additional model factors of technological and marketing capabilities.

2.7 Summary

This chapter has covered the four theories (the innovation diffusion theory, porter's theory, knowledge-based theory and dynamic capabilities theory) that anchor the study variables (technological capability, marketing capability, dynamic capability, Human resource capability and firm characteristics as the moderating variable) and the conceptual framework draws the relationship between the study variables and indicators. The empirical literature looked at studies that covered the five variables, the critique of literature and research gap showed the need to do this study.

Most of the studies have shown that most of the studied firms have developed strategic capabilities. Most of these studies also show that different strategic capabilities have a positive impact on the overall performance of firms. It can also be

seen that various firms have different strategic capabilities and how they deploy these capabilities in attaining their goals.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that guided the study on strategic capabilities and the performance of pharmaceutical companies in Kenya. It describes the research philosophy, research design, target population, sampling technique, data collection methods and procedure, pilot study, data analysis and presentation, diagnostic tests, and the study model. The chapter is important because methodological choices should be aligned to the research problem, objectives, hypotheses, and the type of data required to answer the study questions in a systematic and credible manner (Saunders et al., 2023; Creswell & Creswell, 2023).

3.2 Research Philosophy

This study was guided by the positivist research philosophy. Positivism assumes that social reality can be observed objectively, measured systematically, and analyzed through empirical methods in order to generate reliable and generalizable findings. The philosophy is appropriate for studies that test hypotheses, examine relationships among variables, and rely on structured instruments and statistical analysis. In the present study, the main objective was to establish the influence of technological capability, marketing capability, dynamic capability, and human resource capability on the performance of pharmaceutical companies in Kenya, and to assess the moderating effect of firm characteristics. Since these objectives required measurable variables, numerical data, and hypothesis testing, positivism was considered the most suitable philosophical foundation for the study (Saunders et al., 2023; Bell et al., 2022).

The study did not adopt interpretivism because it was not primarily concerned with exploring subjective meanings, lived experiences, or socially constructed interpretations of respondents. It also did not adopt pragmatism because the study was designed as a predominantly quantitative inquiry rather than a mixed-methods

study driven by methodological pluralism. Instead, positivism was preferred because it fits the use of a structured questionnaire, standardized data collection, and inferential statistics for testing the hypothesized relationships among the study variables. The philosophy therefore supports the study's emphasis on objectivity, measurement, explanation, and statistical generalization within the pharmaceutical sector in Kenya (Creswell & Creswell, 2023; Saunders et al., 2023).

3.3 Research Design

A research design is the overall plan that guides the collection, measurement, and analysis of data in a study in a manner that aligns the research problem, objectives, hypotheses, and methods. In this study, a descriptive cross-sectional research design was adopted. The design was appropriate because the study sought to examine the status of strategic capabilities and firm performance among pharmaceutical companies in Kenya at a specific point in time, without manipulating the study variables. A cross-sectional design was suitable because data were collected once from the selected firms, while the descriptive orientation made it possible to describe the patterns of technological capability, marketing capability, dynamic capability, human resource capability, firm characteristics, and performance across the study population (Saunders et al., 2023; Creswell & Creswell, 2023).

The design was also suitable because the study was quantitative in nature and involved testing hypotheses on the relationships between the independent variables and the dependent variable, as well as the moderating effect of firm characteristics. This made the design compatible with the use of structured questionnaires, descriptive statistics, correlation analysis, and regression analysis. Although the study had a descriptive orientation, it also had an explanatory element because it aimed to establish whether strategic capabilities significantly influenced the performance of pharmaceutical companies in Kenya. For this reason, the descriptive cross-sectional design provided an effective basis for both describing the study variables and testing the hypothesized relationships among them (Bell et al., 2022; Saunders et al., 2023).

3.4 Target Population

Target population refers to the complete set of units that possess the characteristics relevant to a study and from which the researcher seeks to draw conclusions. In this study, the unit of analysis was the pharmaceutical company, while the unit of observation was the senior respondent drawn from each selected firm. The target population comprised 415 pharmaceutical companies operating in Kenya, categorized into 35 manufacturers and 380 distributors, as shown in Table 3.1. These two categories were included because they constitute the major formal segments of pharmaceutical companies operating within the Kenyan market and are both directly involved in deploying strategic capabilities that influence organizational performance. Manufacturers and distributors differ in operational role, but both operate within the same pharmaceutical regulatory and competitive environment and are therefore relevant to the study objectives. The researcher interviewed the CEOs and general managers of the respective companies as they had the rightful information of the companies needed in this study. The target population strata are as shown in Table 3.1.

Table 3.1: Target Population

	Target Population
Manufacturing	35
Distributors	380
Total	415

3.5 Sampling Technique

Sampling refers to the process of selecting a subset of units from the target population in such a way that the selected cases adequately represent the wider population. In this study, sampling was necessary because the target population of 415 pharmaceutical companies was geographically dispersed and included both manufacturers and distributors, making a full census less practical in terms of time, cost, and field logistics. Although the population was not extremely large, the use of a sample was considered appropriate because it still allowed reliable statistical estimation while making data collection more manageable. In addition, the study

intended to use inferential statistics, and an adequately selected sample was sufficient for drawing conclusions about the wider population of pharmaceutical companies in Kenya (Saunders et al., 2023; Bell et al., 2022).

The study adopted stratified random sampling as the population was big. According to Kothari (2003), stratified random sampling technique produces reliable and detailed information on the study objects. Moreover, the sampling technique was found to be more appropriate in that it does not only represent the whole population but also the main sub-divisions of the population. Stratified sampling also helps to reduce the standard error by reducing the variance. The pharmaceutical companies were divided into manufacturing and distributing companies. The stratified random method was used to calculate the sample of pharmaceuticals to be grouped into either manufacturing or distributing companies from the target population of 415 companies. The population sample size was computed as follows:

$$n = \frac{pqZ^2}{e^2}$$

Where n = sample size

z = standard normal distribution at 95% confidence level

p = proportion of the target population of distributors and manufacturing pharmaceuticals.

$$q = 1 - p$$

e = standard error

$$n = \frac{1.96^2(0.1 * 0.9)}{0.05^2}$$

$$n = 138$$

$$n_{adjusted} = \frac{nN}{n + N}$$

Where n = the sampling distribution

N = overall population

n = 138

N = 415

$$n_{adjusted} = \frac{138 \times 415}{138 + 415}$$

$n_{adjusted}$ = 103

The strata sample size was obtained according to the ratio proportion of the manufacturing and distributor pharmaceuticals. The groups sample sizes are as illustrated in Table 3.2.

Table 3.2: Sample size

Department	Target Population	Sample
Manufacturing	35	10
Distributors	380	93
Total	415	103

3.6 Data Collection Method

This study used both primary and secondary data. Primary data were collected using a structured questionnaire administered to the selected respondents in the pharmaceutical companies. The questionnaire was considered suitable because the study was quantitative in nature and required standardized responses that could be coded, compared, and analyzed statistically. Structured questionnaires are appropriate where the researcher seeks uniformity in responses, efficiency in data

collection, and ease of quantitative analysis across a relatively large sample (Saunders et al., 2023; Creswell & Creswell, 2023). In this study, the questionnaire was designed in line with the study objectives, hypotheses, and operationalized variables. It comprised two main sections: the first section captured demographic and organizational information, while the second section captured data on technological capability, marketing capability, dynamic capability, human resource capability, firm characteristics, and firm performance.

Secondary data were also used to complement the questionnaire responses, particularly on aspects of firm performance that could be supported through documentary and publicly available sources. These data were obtained through desk review of relevant company information and other accessible secondary sources related to pharmaceutical company performance. The combination of primary and secondary data strengthened the study by improving data completeness and allowing the researcher to capture both perceptual and performance-related information relevant to the variables under investigation (Bell et al., 2022; Saunders et al., 2023).

3.6.1 Data Collection Procedure

Data collection was undertaken after obtaining the necessary authorization to conduct the study. The researcher obtained a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) and carried an introduction letter from Jomo Kenyatta University of Agriculture and Technology explaining the academic purpose of the study. Thereafter, the researcher contacted the selected pharmaceutical companies, sought permission from the relevant offices, and identified the appropriate respondents in each sampled firm. The questionnaire was then administered to the selected respondents, who mainly comprised chief executive officers and general managers, because they were considered knowledgeable about the strategic and performance issues of their respective firms.

To facilitate data collection, the researcher worked with trained research assistants who supported distribution and follow-up of the questionnaires. The respondents were informed about the purpose of the study, assured of confidentiality, and requested to complete the questionnaire voluntarily. Completed questionnaires were

checked for completeness, consistency, and legibility before coding and entry for analysis. This procedure was necessary to improve data quality and to ensure that the information collected was adequate for answering the research questions and testing the study hypotheses (Saunders et al., 2023; Bell et al., 2022).

3.7 Pilot Study

A pilot study was conducted to pre-test the questionnaire before the main data collection exercise. The purpose of the pilot study was to establish whether the instrument was clear, relevant, and capable of generating valid and reliable data for the main study. The pilot sample comprised approximately 10% of the study sample, resulting in 11 pharmaceutical companies, which were not included in the final survey. Conducting a pilot study before the main data collection is important because it helps identify ambiguous items, improve wording, assess the practicality of the instrument, and provide an initial basis for testing validity and reliability (Saunders et al., 2023; Creswell & Creswell, 2023).

3.7.1 Validity of Research Instrument

Validity refers to the extent to which a research instrument measures what it is intended to measure. In this study, the validity of the questionnaire was assessed mainly through content validity and construct validity. Content validity was established by ensuring that the questionnaire items were derived from the study objectives, hypotheses, conceptual framework, and existing literature on strategic capabilities and firm performance. In addition, the draft questionnaire was reviewed by the supervisors and other knowledgeable persons in the field to determine whether the items adequately represented the study constructs and whether the wording was appropriate for the pharmaceutical-company context. This review process helped improve the relevance, clarity, and coverage of the instrument before administration in the pilot study.

Construct validity was assessed during the pilot stage by examining whether the questionnaire items loaded appropriately on the constructs they were intended to measure. This was important because the study involved multiple latent constructs,

namely technological capability, marketing capability, dynamic capability, human resource capability, firm characteristics, and firm performance. The pilot results were therefore used to determine whether the retained items reflected their expected constructs adequately before the final data collection exercise. Using both expert review and pilot-based construct assessment strengthened the validity of the instrument and improved confidence that the questionnaire measured the intended purpose

3.7.2 Reliability of Research Instrument

Reliability refers to the extent to which a research instrument produces consistent results when applied under similar conditions. In this study, reliability of the questionnaire was assessed using Cronbach's alpha coefficient, which measures the internal consistency of items used to capture the same construct. Cronbach's alpha was appropriate because the instrument contained multiple Likert-scale items for each study variable, and the researcher needed to confirm that the items under each construct were sufficiently consistent to be combined in the final analysis.

The pilot-study responses were entered into SPSS and reliability coefficients computed for each construct. A Cronbach's alpha value of 0.70 or above was considered acceptable for purposes of this study because such a threshold generally indicates satisfactory internal consistency in social-science research. Where any item appeared to weaken reliability, it was reviewed alongside the validity results before the final questionnaire was administered. This process ensured that only items that contributed meaningfully to reliable measurement were retained in the main study (Hair et al., 2022; Saunders et al., 2023)

3.8 Data Analysis and Presentation

The Statistical Package for Social Sciences (SPSS) Version 24.0 computer application was used to prepare, sort, modify, and code the main data that was gathered in the field. To aid in data analysis, the study calculated descriptive statistics such as mean, rates, proportions, and frequency distribution. The link between the research variables was examined using a regression approach. The

independent factors (technological capability, marketing capability, human resource capability, dynamic capability, and the moderating influence of firm characteristic) were examined in a regression model.

3.9 Diagnostic Test

Before conducting regression analysis, the study carried out diagnostic tests to determine whether the data met the assumptions required for reliable estimation and interpretation of the regression model. Diagnostic testing was necessary because violation of regression assumptions may result in biased estimates, unstable coefficients, or misleading significance tests. In this study, the diagnostic tests covered heteroscedasticity, multicollinearity, normality, autocorrelation, and linearity. These tests were conducted before the final regression analysis in order to improve the robustness of the findings and confidence in the study model (Hair et al., 2022; Saunders et al., 2023).

3.9.1 Test for Heteroscedasticity

The test for heteroscedasticity was conducted to determine whether the variance of the error term remained constant across the levels of the independent variables. A constant error variance is desirable in regression because non-constant variance may affect the efficiency of estimates and distort standard errors. In this study, a heteroscedasticity test was performed and the decision was based on the significance level of the test results. Where the significance value is greater than 0.05, the assumption of homoscedasticity is considered to have been met; where it is less than 0.05, heteroscedasticity may be present. The results of this test are presented in Chapter Four. (Hair et al., 2022).

3.9.2 Test for Multicollinearity

The test for multicollinearity was conducted to establish whether the independent variables were excessively correlated with one another. Multicollinearity is undesirable because it inflates standard errors and makes it difficult to determine the individual effect of each predictor in the regression model. In this study,

multicollinearity was assessed using tolerance values and the variance inflation factor (VIF). A tolerance value above 0.10 and a VIF value below 10 were taken to indicate absence of serious multicollinearity. The results of the multicollinearity test are presented in Chapter Four. (Hair et al., 2022).

3.9.3 Test for Normality

The normality test was conducted to determine whether the data and residuals approximated a normal distribution, which is an important assumption in regression analysis and significance testing. In this study, normality was assessed using an appropriate statistical normality test and supported by examination of the distributional properties of the data. A significance value greater than 0.05 indicated that the data did not significantly depart from normality. Establishing normality was important because it improved confidence in the validity of inferential tests used in the study. The results of the normality test are presented in Chapter Four. (Hair et al., 2022; Saunders et al., 2023).

3.9.4 Test for Autocorrelation

The test for autocorrelation was conducted to determine whether the residuals in the regression model were independent from one observation to another. Although autocorrelation is more common in time-series data, checking for it in regression analysis is still useful because correlated errors may bias the model estimates. In this study, autocorrelation was assessed using the Durbin–Watson statistic. A value close to 2 was interpreted to indicate absence of serious autocorrelation in the model. The results of the autocorrelation test are presented in Chapter Four. (Hair et al., 2022).

3.9.5 Linearity Test

The linearity test was conducted to determine whether the relationship between the independent variables and the dependent variable was approximately linear. This assumption is important because linear regression requires a reasonably linear relationship between predictors and the outcome variable. In this study, linearity was assessed using a scatter plot and examination of the pattern formed by the data

points. Where the data points formed a fairly straight-line pattern without strong systematic curvature, the assumption of linearity was considered to have been satisfied. The linearity results are presented in Chapter Four. (Hair et al., 2022; Saunders et al., 2023).

3.10 The Study Model

The Regression Model:

Step 1: Regress strategic capabilities on performance without the moderating effect and the note the value of r^2

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \dots\dots\dots(i)$$

Where Y= Firm Performance

β_0 = Constant

$\beta_1, \beta_2, \beta_3$ and β_4 are coefficients of strategic capabilities

ε = error term

X_1 = technological capability

X_2 = marketing capability

X_3 = dynamic capability

X_4 = Human resource capability

Moderation

The study adopted regression to test the model constituting strategic capabilities, the moderating variable of firm characteristics and interaction variables between Firm

performance and the moderator. The results of the model generated in the equation given as:

$$Y = \beta_0 + \beta_1 M + \beta_2 X + \beta_3 X.M + e$$

Where;

Y= the dependent variable (Firm Performance)

M = Moderating variable (firm characteristics)

X= variable composite $\{(X_1+X_2+X_3+X_4)/4\}$

X.M = Interaction term

$\beta_1, \beta_2, \beta_3$, = Change in Y with respect to a unit change in M.

Results are presented in tables and figures using percentages and frequencies to facilitate comparisons and further analysis.

3.10.1 Operationalization and Measurement of Variables

The variables of the study were measured as below. Table 3.3 gives the illustrations.

Table 3.3: Operationalization and measurement of variables

Category	Variable	Indicators	Measurement	Data types
Dependent Variable	Performance of pharmaceutical companies	-Market share -Return on investment -Customer feedback	Effects of strategic capabilities on performance of pharmaceutical companies on measures of Market share Return on investment Customer complaints	Quantitative
Independent variable	Technological capabilities	-Resources allocated to R&D -Existence of R&D department -Business processes technology -Product design upgrade -Product performance upgrade -Changes in product design -Changes in production process -Changes in product features	Extent to which Resources allocated to R&D, Existence of R&D department, business processes technology, product design upgrade, product performance upgrade, changes in product design, changes in production process and changes in product features affect performance of pharmaceutical companies in a scale 1-5	Quantitative
Independent variable	Marketing capabilities	- Selling markets (regional, national, international) - Product differentiation - Customer order fulfillment - Pricing strategies	Extent to which Selling markets (regional, national, international) Customer order fulfillment Sales integration and Capitalization of brand assets affect performance of pharmaceutical companies in a scale 1-5	Quantitative
Independent variable	dynamic capabilities	- Environmental scanning - Opportunity identification - Strategic responsiveness - Resource reconfiguration - Process renewal	Extent to which dynamic activities alignment of strategy & channels affects performance of pharmaceutical companies in a scale 1-5	Quantitative
Independent variable	Human resource capabilities	-staff development -Innovation -Learning - Turnover	Extent to which staff development, innovation, turn over and learning affect performance of pharmaceutical companies	Quantitative

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study on the influence of strategic capabilities on performance of pharmaceutical companies in Kenya. The chapter covers the pilot study results, the demographic results and the descriptive analysis of the main findings based on the variables of the study. The variables were, technological capability, marketing capability, Dynamic capability and human resource capability. The inferential analysis was covered in this chapter.

4.2 Response Rate of the Research Instrument

The study sample for the study incorporated 103 respondents who comprised of manufacturing and distributor pharmaceuticals. A total of 103 questionnaires were issued to the respondents and a total of 93 questionnaires were recollected for analysis. This makes a response rate of 90% which was considered adequate for analysis. This is in line with such as Mugenda (2008) and Cooper and Schindler (2003) who suggested that a response rate of more than 70% based on the study sample is enough for analysis and making conclusion in a study.

Table 4.1: Response Rate

Questionnaires	Number	Percentage
Duly filled and returned	93	90%
Uncollected/ unfilled	10	10%
Total	103	100%

4.3 Results of the Pilot Study

This study as well carried out a pilot test whereby the questionnaire was administered to a few selected respondents who met the criteria for selecting the

sampled respondents. The pilot study was carried out in 11 pharmaceutical companies. These were not included in the final study. According to Tejinde and Sahu (2015), when having a sample size of less than 500 respondents, using 6-10% of the sample size as the piloting sample would be appropriate in an academic work.

4.3.1 Reliability and Validity

Reliability score of an instrument indicates the stability and consistency of items contained & to what limit it measures the concept in a correct manner. Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. The study selected a pilot group of 11 individuals from the target populace to test the unwavering quality of the examination instruments. So as to test the unwavering quality of the instruments, reliability consistency was applied utilizing Cronbach's Alpha.

To establish the validity of the research instrument, the researcher sought opinions of experts in the field of study especially the owners and managers of business firms. This helped to improve the content validity of the data that was collected. It facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

Table 4.2: Pilot Reliability Results

Variables	Cronbach's Alpha	Number of Items	Conclusion
Dynamic capability	0.764	9	Reliable
Human Resource Capability	0.830	10	Reliable
Marketing Capability	0.838	10	Reliable
Technological Capability	0.769	10	Reliable
Performance	0.833	10	Reliable
Firm Characteristics	0.770	7	Reliable

The pilot results proved that the variable statements were highly reliable with a representative Cronbach's Alpha of 0.764, 0.830, 0.838, 0.769, 0.833 and 0.770 for

Dynamic capability, human resource capability, marketing capability, technological capability, performance and firm characteristics.

4.3.2 Validity Test

Kaiser-Meyer-Olkin (KMO) test was performed to test for validity. The significance of the KMO coefficient was evaluated using a chi square test and a critical probability value (p value) of 0.05. According to Field (2005), KMO Value/Degree of Common Variance of between 0.90 to 1.00 is “Marvelous”, 0.80 to 0.89 is “Meritorious”, 0.70 to 0.79 is “Middling” 0.60 to 0.69 is “Mediocre”, 0.50 to 0.59 is “Miserable”, 0.00 to 0.49 is “Don't Factor”.

Table 4.3: Pilot Validity Test

Variable	KMO	Bartlett Test(Chi square)	Df and P value	Conclusion
Technological Capability	0.721	372.112	15 (0.000)	Middling
Human Resource Capability	0.714	289.812	15 (0.000)	Middling
Marketing Capability	0.833	287.025	15 (0.000)	Meritorious
Dynamic capability	0.821	191.221	15 (0.000)	Meritorious
Firm Characteristics	0.678	98.983	15 (0.000)	Middling
Performance	0.792	177.122	15 (0.000)	Middling

The results of Kaiser-Meyer-Olkin Measure of Sampling Adequacy presents a KMO statistic values between 0.678 and 0.833 which were above 0.5 and significant (p-

value of 0.000 for all the variables); that is greater than the critical level of significance of the test which was set at 0.5 (Field, 2000). The data collection instrument was therefore regarded as adequate and appropriate.

Dynamic capability

Factor-loading values that are greater than 0.4 should be accepted and values below 0.4 should lead to collection of more data to help researcher to determine the values to include. Cronbach's Alpha if Item Deleted value above 0.9 will be considered to be removed since the data collected with that item is not reliable.

Table 4.4: Pilot Factor-loading- Dynamic capability

	Extraction
The organization regularly scans the business environment to identify changes that may affect its operations.	0.999
The organization has clear systems for identifying new market, technological and regulatory opportunities.	0.988
The organization responds quickly to changes in customer needs and market conditions.	0.469
The organization adjusts its strategies when there are changes in competition, regulation or industry trends.	0.96
The organization reallocates resources when new opportunities or threats emerge.	0.999
The organization regularly improves its internal processes to respond to changes in the pharmaceutical industry.	0.988
The organization encourages departments to share information that supports timely decision-making.	0.96
The organization adapts its products, services or operations to meet changing regulatory and market requirements.	0.999
The organization is able to reconfigure its structures, routines and capabilities to sustain performance in a changing environment.	0.988

It was found that all the statements had factor-loading values that are greater than 0.4. All the items have adequate reliability value

Marketing capability

Table 4.5: Pilot Factor-loading- Marketing Capability

	Extracti on
The quality effect is higher than the price effect of our goods	0.666
The firm has employed modern techniques of marketing	0.927
The organization has set apart enough budget and a marketing team to specialize in marketing the firms' product	0.93
The orders from the customers are fulfilled adequately	0.904
The firm has popularized and capitalized the brands of the products assets	0.927
The marketing personnel are in a position to do sales integration, that is, creating awareness to the potential customers and converting them to real customers	0.93
The firm customers are recorded in a database for regular updates of new products and benefits accrued to the products	0.904
The firm products are unique in branding and quality and therefore the firm has a competitive advantage	0.93
The sales team shares the product benefits with the market to increase sales	0.431
The firm has extended the product sales nationally and internationally	0.884

All the statements had factor-loading values that are greater than 0.4. The items have adequate reliability value

Technological capabilities

Table 4.6: Pilot Factor-loading- Technological Capabilities

	Extraction
The organization workforce is well informed of the technological improvements in pharmaceutical industry.	0.742
The organization has a well-developed R&D team as department in the organization	0.936
Our budget allocation to the R&D development has been increasing overtime	0.98
We have been extending various partnerships and patents with research institutions to develop new technologies	0.994
The organization undertakes conscious products design upgrade	0.98
The organization is able to adjust to changes in production processes	0.902
The organization has implemented innovation effective strategies	0.845
Technology available in the organization enhancement has improved the processing, productivity and realization of the firms' vision and objectives through adjustment with the process changes.	0.936
Resources of technology available have given the expected output in productivity of the firm	0.98
The firm sometimes brings up product performance feature upgrade	0.994

All the statements had factor-loading values that are greater than 0.4. The items have adequate reliability value.

Human resource capability

Table 4.7: Pilot Factor-loading- Human Resource Capability

	Extraction
The organization has a competitive hiring process of needed skills	0.462
Our employee turnover is low	0.933
The firm offers competitive salaries to our employees	0.967
The organization has employees with all needed skills within the firm	0.475
The firm relies on internal and external trainers	0.967
The employee pool in the firm has a diverse expertise	0.84
The organization rewards the most innovative employees as a strategy to stimulate more developments	0.674
The firm is capable of replacing the absent employees to maintain its productivity	0.747
Information sharing amongst the employees is encouraged through proper communication among the employees	0.933

All the statements had factor-loading values that are greater than 0.4. The items have adequate reliability value.

Firms' characteristics

Table 4.8: Pilot Factor-loading- Firms Characteristics

	Extract ion
The firm has adequate specialized resources for its operations	0.809
The firm has enough finances to fund, maintain and expand its operations	0.873
The number of extension branches of products have increased	0.951
Technology in the firm has helped it to be competitively advantaged	0.452
All the staff uphold the firm objectives, values and ethics as outlined	0.951
Appropriate tasks have been well outlined for each employee through staff development programs	0.856
The firm employs the top down approach in decision making and change management	0.907
The top management structure is dynamic to promote and sustain profitability and growth of firms	0.924
The firm structures the management department-wise.	0.873

All the statements had factor-loading values that are greater than 0.4. The items have adequate reliability value

Performance

Table 4.9: Pilot Factor-loading- Performance

	Extraction
The return on investment in the firm have been increasing yearly	0.776
The annual sales of the company have been increasing	0.966
The company market extension has grown overtime	0.93
The firm sets aside part of the budget to invest on boosting the performance such as advertising	0.41
The company prioritizes the customer feedback and address them promptly	0.707
The number of negative feedbacks to the firms has been minimized	0.892
The company have focused on ensuring internal customer satisfaction	0.953

All the statements had factor-loading values that are greater than 0.4. The items have adequate reliability value.

Table 4.11: Recommended Adjustments

Item serial No.	Description	Concern	Recommended adjustment
Questionnaire introduction	The title of the study assessment was missing	Respondents did not understand the purpose of the research.	The title of the study that the researcher was undertaking was included in the questionnaire introduction section.
General information section	Name of the organization	The respondents revealed the challenge of disclosing the name of the organization they are in.	The organizational name inquiry question to be removed.
Section D- Item 10	Item 10 on the section would have a high reliability (Cronbach Alpha) if the item is deleted	The item is stated in a negative way.	The item should be rephrased to be positive like the other items

4.4 Analysis of the Demographic Data

The demographic findings from the study are as herein indicated. The motive of demographic data is to establish the organizational background that corresponds with the main theme of the study. According to Creswell (2010), through background information, the researcher gains more knowledge on the flow of the respondents and how well the respondents are capable of giving the expected results as well as gaining an insight on the extent to which the responses in a study are diverse. Among the demographic information sought in this study was the organization type, gender of the respondents, number of years they had worked with the organization and number of years they had worked at the particular position in the organization.

4.4.1: Organization Type

The study ought to determine the type of organization. The findings as shown in Figure 4.1 reveal that 86% of the pharmaceuticals functioned as distributor pharmaceuticals as compared to 14% of the pharmaceuticals which were manufacturing type.



Figure 4.1: Organization type

4.4.2 Gender

The study ought to determine the gender of the respondents and the findings were as shown in figure 4.2. Most of the respondents were of the male gender covering 62% compared to the female respondents who were 38%.

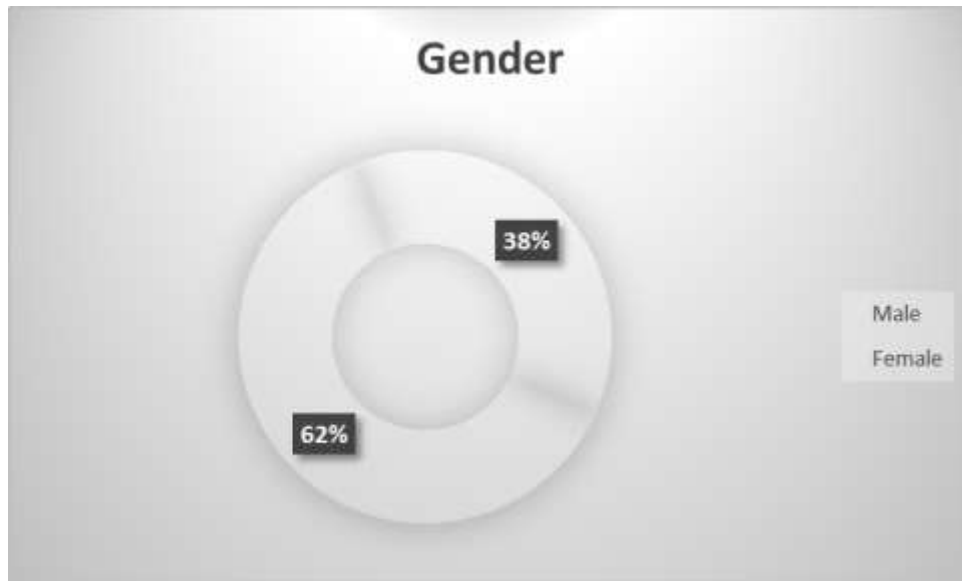


Figure 4.2: Gender

4.4.3 Number of Years at the Organization

The study determined the number of years the respondents had worked with the organization and the findings were shown in Figure 4.3. The number of respondents who had worked for less than a year were 5 respondents which was 5.38% of the total respondents. 13 respondents (13.98%) had worked in the organization from 1 to 3 years. 54 of the respondents (58.06%) had worked from 4 to 9 years. 12 respondents (12.90%) had worked in the organization from 8 to 10 years and finally only 9 (9.68%) of the respondents had worked for above 10 years in the organization.



Figure 4.3: Number of Years at the Organization

4.4.4 Number of Years Worked at the Position in the Organization

In the study, the respondents were grouped according to different positions they had worked in the organization. From the findings in Table 4.2, the number of respondents who had worked as CEOs was 7(7.5%) and the number of the respondents who had worked as general managers was 86 (92.5%).

Table 4.12: Number of Respondents in Different Positions

	Frequency	Percent
CEO	7	7.5%
General Manager	86	92.5%
Total	93	100%

In Figure 4.4, the number of years the respondents had worked in their position was shown. The number of respondents who had worked for less than a year in their position were 10. Between 1 to 3 years, 46 respondents had worked at their position. Between 4 to 7 years, 27 respondents had worked at their position and above 7 years, only 10 respondents had worked in their position.

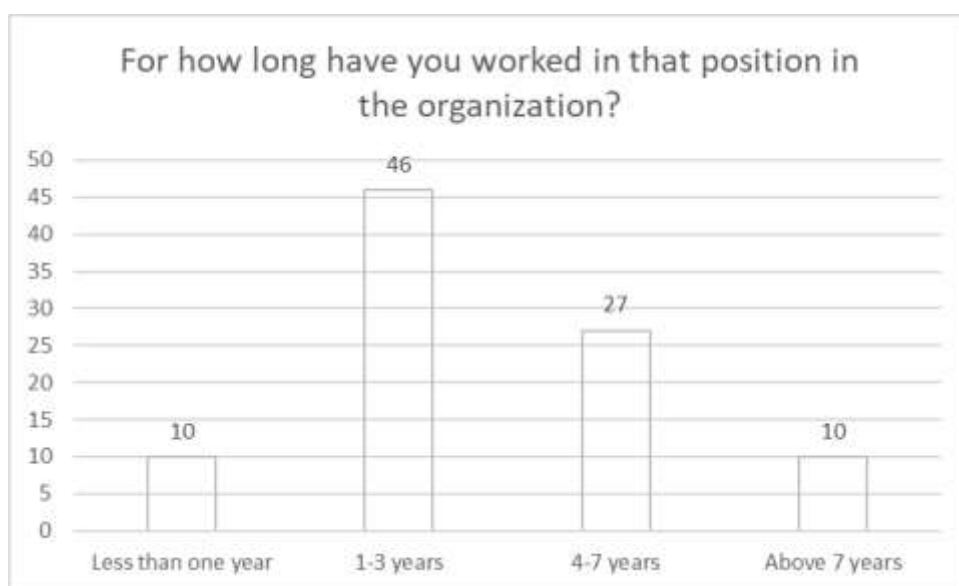


Figure 4.4: Number of Years Worked at the Position in the Organization

The study assessed the number of years in operation for the pharmaceutical firms. The findings are as per Table 4.13. From the findings in Table 4.13, the number of years in operation for the pharmaceutical firms who were in operation Above 10 years was 49(52.7%), 40.9% were in operation for 6 to 9 years, 3.2% were in operation for 4 to 6 years, 2.2% were in operation for 1 to 3 years, and the number of the respondents who had operated for Less than one year was 1 (1.1%).

Table 4.13: Years in Operation

	Frequency	Percent
Less than one year	1	1.1%
1-3 years	2	2.2%
4-6 years	3	3.2%
6-9 years	38	40.9%
Above 10 years	49	52.7%
Total	93	100%

The research evaluated the market supplies network for the pharmaceutical firms. The findings are as per Table 4.13. majority (80.6%) were making supplies in one country and a proportion of 19.4% were making supplies in more than 2 countries.

Table 4.14: Market Supplies Network

	Frequency	Percent
One country	75	80.6%
2-3 countries	18	19.4%
Total	93	100%

4.5 Diagnostic Tests

Diagnostic tests are used to examine the appropriateness of assumptions underlying the modelling process and to locate unusual characteristics of the data that may influence conclusions (Cook & Weisberg, 1983). Before the data was analyzed, exploratory tests were conducted to check whether the data met the requirements of inferential test criteria. Kothari (2014) points out that breaches of hypothesis lead to serious distortions and irrelevant results. The indicators were selected for more assessment and averaged to obtain one score per factor. The factors generated were then tested for their adequacy in inferential testing. Some tests to ensure that the data comply with the fundamental assumptions of inferential testing are based on the following discussions.

4.5.1 Test for Heteroscedasticity

Heteroscedasticity is usually present when the size of the error term differs across values of an independent variable (Fletcher, et al., 2012). Heteroscedasticity is indicated when the residuals are not evenly scattered around the line. When the plot of residuals appears to deviate substantially from normal, more formal tests for heteroscedasticity should be performed (Behm, Edmonds, Harmon & Ives 2013). For the purpose of testing heteroscedasticity in this study, Breusch Pagan Test was performed in order to calculate group wise Heteroscedasticity in the residuals.

Heteroscedasticity test was run in order to test whether the error terms are correlated across observation in the panel data (Long & Ervin, 2000). As a rule of thumb, if the p value is less than 0.05, the data has the problem of heteroscedasticity.

Table 4.15: Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity	
chi2(1)	0.921
Prob > chi2	0.1442

From the results in Table 4.15, the p-value is 0.1442 and is greater than 0.05 as a result, we fail to reject the null hypothesis and reject the alternative hypothesis. Hence, we conclude that there was no heteroscedasticity.

4.5.2 Test for Multicollinearity

According to Alin (2010), Multicollinearity refers to the presence of linear relations between the predictor variables. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2015). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley, Kuh & Welsch, 2014).

Table 4.16: Multicollinearity Test

	Tolerance	VIF
Technological Capabilities	0.583	1.714
Marketing Capability	0.665	1.503
Dynamic Capability	0.73	1.369
Human Resource Capability	0.662	1.512
Firms Characteristics	0.609	1.643

Results in the Table 4.16, shows that the data has no multicollinearity. All the variables and average tolerance is above 0.10 while the variance inflated factors for all the variables is less than 10. This shows absence of multicollinearity and is in concurrence with Lind, Marchal & Wathen, (2012) assertion that VIF less than 10 is considered devoid of multicollinearity. Tolerance below 0.2 signifies a potential problem. Little multicollinearity is implied when tolerance is close to 1.

4.5.3 Test for Normality

Normality is important when it comes to knowing the distribution form and helps to predict the reliable variables (Gel, Miao & Gastwirth 2009). Normality is a critical feature in parametric experiments. The normality assumption avers that residuals are normally distributed and have a mean of zero. Histograms and normal probability curves are used to confirm whether the residuals follow a normal probability distribution. If the plotted points of residual in the normal probability curve are fairly close to a straight line drawn from the lower left to the upper right of the graph, then normal distribution of the residuals will have been confirmed (Mishra et al., 2019).

Table 4.17: Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Technological Capabilities	.435	93	.000	.553	93	.000
Marketing Capability	.432	93	.000	.585	93	.000
Dynamic Capability	.366	93	.000	.712	93	.000
Human Resource Capability	.363	93	.000	.723	93	.000
Firms Characteristics	.407	93	.000	.670	93	.000
Performance	.327	93	.000	.765	93	.000
a. Lilliefors Significance Correction						

The results in Table 4.17 showed that the significant values of all the variables was greater than 0.05 which imply that the data is normally distributed.

4.5.4 Test for Autocorrelation

Correlation test was done to test the relationship between variables using Durbin-Watson, which is a test used to detect the presence of auto-correlation where a relationship between values is separated from each other by a given time lag in the residuals and finding presented in Table 4.18

Table 4.18: Autocorrelation Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.626 ^a	.391	.356	.485	2.108

a. Predictors: (Constant), Firms Characteristics, Dynamic Capability, Marketing Capability, Human Resource Capability, Technological Capabilities

b. Dependent Variable: Performance

The Durbin-Watson statistic is always between 0 and 4, a value of 2 means that there is no autocorrelation in the sample. Values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation. This means that there should be no serial correlation among the observations. The results as indicated in Table 4.18. The Durbin-Watson $d = 2.108$, which is between the two critical values of $2.0 < d < 4.0$. Therefore, it was assumed that there is negative linear auto-correlation.

4.5.5 Linearity Test

Linearity test was done using a scatter plot. Findings are as presented in Figure 4.5.

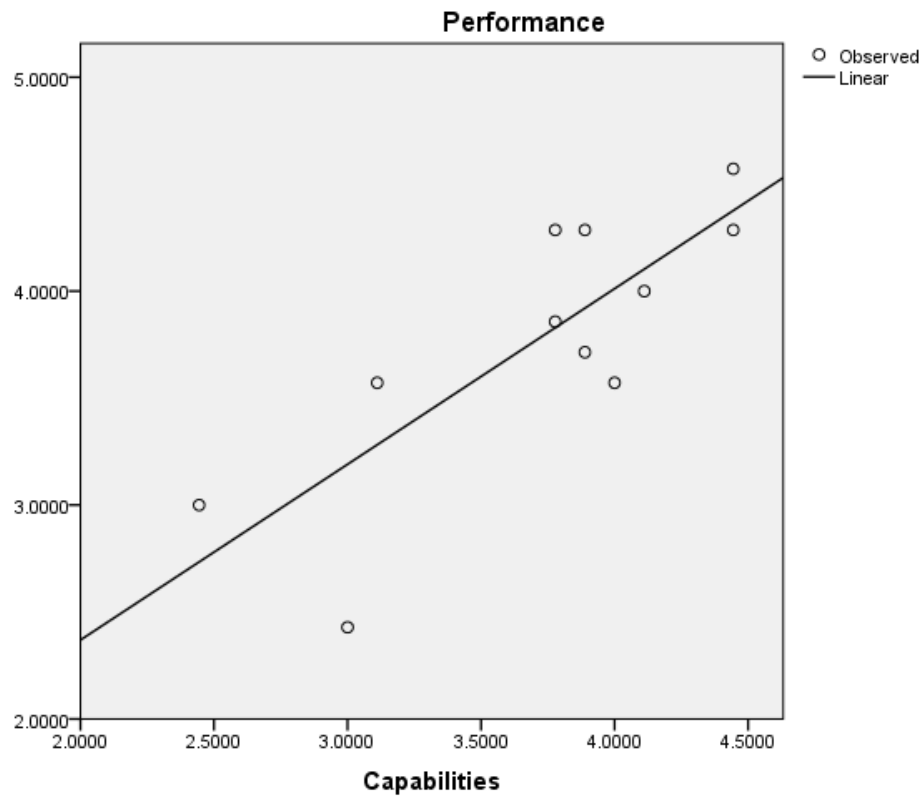


Figure 4.5 Scatter Plot for Linearity

A scatter diagram was extracted to show the linearity of the data. The scatter diagram showed that the data were arranged around the line of best fit, which is a show of linearity.

4.6 Descriptive Statistics

4.6.1 Influence of Technological Capability on Firm Performance

The research study aimed at assessing the resultant impact of technological capability on firm performance. The elements addressed in the study were; well-informed workforce, well-developed R&D team, budget allocation, partnerships and

patents with research institutions, products design upgrade, adjustment to changes in production, innovation effective strategies, resources of technology and product performance feature upgrade. The rates of the measures were assessed on the practice of the measures.

Table 4.19: Technological Capability

	No extent	Little extent	Moderate extent	Great extent	Very great extent	Mean	Std Dev
The organization workforce is well informed of the technological improvements in pharmaceutical industry.	0.0%	0.0%	0.0%	7.5%	92.5%	4.9	0.27
The organization has a well-developed R&D team as department in the organization	8.6%	4.3%	17.2%	44.1%	25.8%	3.7	1.15
Our budget allocation to the R&D development has been increasing overtime	6.5%	9.7%	15.1%	48.4%	20.4%	3.7	1.11
We have been extending various partnerships and patents with research institutions to develop new technologies	6.5%	4.3%	14.0%	43.0%	32.3%	3.9	1.1
The organization undertakes conscious products design upgrade	7.5%	9.7%	9.7%	44.1%	29.0%	3.8	1.19
The organization is able to adjust to changes in production processes	1.1%	8.6%	4.3%	39.8%	46.2%	4.2	0.95
The organization has implemented innovation effective strategies	1.1%	4.3%	9.7%	30.1%	54.8%	4.3	0.9
Technology available in the organization enhancement has improved the processing, productivity and realization of the firms' vision and objectives through adjustment with the process changes.	4.3%	6.5%	14.0%	46.2%	29.0%	3.9	1.04
Resources of technology available have given the expected output in productivity of the firm	9.7%	8.6%	11.8%	37.6%	32.3%	3.7	1.27
The firm is able to bring up product performance feature upgrade	7.5%	5.4%	12.9%	45.2%	29.0%	3.8	1.14

The study evaluated the impact of technological capability on firm performance. From table 4.19, the results showed that, 92% of the respondents indicated that the organization workforce is well informed of the technological improvements in pharmaceutical industry to a great extent in their firm, and 8% of the respondents stated to a moderate extent. The mean of the response was 4.9 while the standard

deviation was 0.27. The results showed that, 70% of the respondents indicated that the organization workforce has a well-developed R&D team as department in the organization to a great extent, 17% of the respondents stated to a moderate extent while 13% of the respondents stated to a low extent. The mean of the response was 3.7 while the standard deviation was 1.15. Results illustrated that, 69% of the respondents to a high extent stated that their budget allocation to the R&D team development has been increasing overtime in their pharmaceutical, 15% of the respondents stated to a moderate extent while 16% of the respondents stated to a low extent. The mean of the responses was 3.7 and the standard deviation was 1.11. It was shown that, 75% of the respondents stated that their firm had been extending various partnerships and patents with research institutions to a great extent to develop new technologies, 14% of the respondents stated that the statement applied moderately to their firm while 11% of the respondents stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.1.

73% of the respondents stated that the organization undertakes conscious products design upgrade to a high extent in their firm, 10% of the respondents stated to a moderate extent while 17% of the respondents stated to a low extent. The mean of the responses was 3.8 and the standard deviation was 1.19.

Findings show that 86% of the respondents indicated that their organization is able to adjust to changes in production processes to a higher extent, 4% of the respondents stated to a moderate extent, and 10% of the respondents stated to a low extent. The mean of the responses was 4.2 and the standard deviation was 0.95.

The results showed that 85% of the respondents stated that the organization has implemented innovation effective strategies to a great extent in their firm, 10% of the respondents stated that this statement applied moderately to their firm while 5% stated to a low extent to their firm. The mean of the responses was 4.3 and the standard deviation was 0.9.

Results showed that 75% of the respondents stated that technology available in their organization enhancement has improved the processing, productivity and realization of the firms' vision and objectives through adjustment with the process changes to a

high extent, 14% of the respondents stated that this statement moderately applied to their firm, and 11% of the respondents stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.04.

70% of the respondents stated that resources of technology available have given the expected output in productivity of the firm to a great extent, 12% of the respondents indicated to a moderate extent while 18% of the respondents stated to a low extent. The mean of the responses was 3.7 and the standard deviation was 1.27.

74% of the respondents stated that their firm is able to bring up product performance feature upgrade to a great extent, 13% of the respondents stated to a moderate extent. 13% of the respondents stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 0.93. On a similar note, Reichert & Zawislak, (2014) noted that with the rise of information technology and the consequent globalization of markets, skills, knowledge and experience by the organization workforce are required to operate existing systems and to generate technical change. Vorhies, Morgan & Autry, (2009) noted that corporate marketing capability is a key support for launch of new product by R&D team. With a strong marketing capability and a well-developed R&D team, the organization will promote new product in the sales. Vorhies, Morgan & Autry, (2009) noted that in launching a new product, corporate marketing ability is considered to be key and for this to be achieved, budget should be allocated to the R&D team to promote successful launching of the new products. Grootendorst, (2009) noted that in a goal to support pharmaceutical innovation, system of pharmaceutical patents and partnerships has proved to be effective and outlines the various mechanisms that may spur pharmaceutical innovation more effectively.

4.6.2 Influence of Marketing Capability on Firm Performance

The research study aimed at assessing the resultant impact of marketing capability on firm performance. The elements addressed in the study were; quality effect, modern techniques of marketing, enough budget and marketing team, orders from customers, popularizing and capitalizing brands of products, creating awareness, recording in database, uniqueness in branding and quality, sharing product benefits and extension

of product sales. The rates of the measures were assessed on the practice of the measures.

Table 4.20: Marketing Capability

	No extent	Little extent	Moderate extent	Great extent	Very great extent	Mean	Std Deviation
The quality effect is higher than the price effect of our goods	0.0%	9.7%	10.8%	39.8%	39.8%	4.1	0.93
The firm has employed modern techniques of marketing	9.7%	5.4%	14.0%	38.7%	32.3%	3.8	1.23
The organization has set apart enough budget and a marketing team to specialize in marketing the firms' product	7.5%	9.7%	12.9%	45.2%	24.7%	3.7	1.17
The orders from the customers are fulfilled adequately	5.4%	4.3%	16.1%	43.0%	31.2%	3.9	1.06
The firm has popularized and capitalized the brands of the products assets	4.3%	5.4%	11.8%	47.3%	31.2%	4	1.02
The marketing personnel are in a position to do sales integration, that is, creating awareness to the potential customers and converting them to real customers	6.5%	10.8%	8.6%	39.8%	34.4%	3.8	1.2
The firm customers are recorded in a database for regular updates of new products and benefits accrued to the products	4.3%	4.3%	9.7%	36.6%	45.2%	4.1	1.05
The firm products are unique in branding and quality and therefore the firm has a competitive advantage	7.5%	8.6%	8.6%	36.6%	38.7%	3.9	1.23
The sales team shares the product benefits with the market to increase sales	6.5%	3.2%	11.8%	23.7%	54.8%	4.2	1.17
The firm has extended the product sales nationally and internationally	6.5%	6.5%	11.8%	36.5%	38.7%	3.9	1.16

From the findings in Table 4.20, 79% of the respondents stated that their firm's quality effect is higher than the price effect of their goods to a great extent, 11% of the respondents stated to a moderate extent, and 10% of the respondents stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 0.93. 71% of the respondents stated that their firm had employed modern technique of marketing to a great extent, 14% of the respondents indicated to a moderate extent while 15% of the respondents stated to a low extent. The mean of the responses was 3.8 and the standard deviation was 1.23. Results showed that 70% of the respondents

stated that their organization had set apart enough budget and a marketing team to specialize in marketing the firm's product to a high extent, 13% of the respondents stated that this statement moderately applied to their firm, and 17% of the respondents stated to a low extent. The mean of the responses was 3.7 and the standard deviation was 1.17. The results showed that 74% of the respondents stated that orders from customers are fulfilled adequately to a great extent in their firm, 16% of the respondents stated that this statement applied moderately to their firm while 10% stated to a low extent to their firm. The mean of the responses was 3.5 and the standard deviation was 1.06. Findings from Table 4.16 show that 78% of the respondents indicated that their firm had popularized and capitalized the brands of the products assets to a higher extent, 12% of the respondents stated to a moderate extent, while 10% of the respondents stated that their firm had applied this statement to a low extent. The mean of the responses was 4 and the standard deviation was 1.02. It was shown that 74% of the respondents stated that the marketing personnel are in a position to do sales integration by creating awareness to the potential customers and converting them to real customers to a high extent in their firm, 8% of the respondents stated to a moderate extent while 18% of the respondents stated that this statement applied to a low extent in their firm. The mean of the responses was 3.8 and the standard deviation was 1.2. The findings illustrated that 82% of the respondents stated that the firm customers are recorded in a data base for regular updates of new products and benefits accrued to the products to a great extent in their pharmaceutical, 10% of the respondents stated to a moderate extent, while 8% of the respondents stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 1.05. it was shown that, 75% of the respondents stated that their firm's products are unique in branding and quality to a great extent and therefore the firm has a competitive advantage, 9% of the respondents stated that the statement applied moderately to their firm while 16% of the respondents stated that the statement only applied to a low extent to their firm. The mean of the responses was 3.9 and the standard deviation was 1.23. 78% of the respondents stated that the sales-team shares the product benefits with the market to a high extent to increase sales in their pharmaceutical, 12% of the respondents stated that to a moderate extent while 10% of the respondents stated to a low extent in their firm. The mean of the

responses was 4.2 and the standard deviation was 1.17. The results showed that, 75% of the respondents indicated that their firm has extended the product sales nationally and internationally at a great extent, 12% of the respondents stated to a moderate extent while 13% of the respondents stated to a low extent. The mean of the response was 3.9 while the standard deviation was 1.16. On a similar note, Waldman & Jensen, (2016) noted that success of brands is dictated by good quality of the product hence effectively increasing firm performance. Hoberg & Phillips, (2016) noted that for a firm to market their products and position their products with competing products in the market so as to make their products more superior, they should employ updated and modern techniques to thrive in the competitive market. Vorhies, Morgan & Autry, (2009) noted that an organization with strong marketing ability not only communicates and promotes a new product in the sales, but can also influence creation of a profitable new product.

4.6.3 Influence of Dynamic Capability on Firm Performance

The study sought to establish the influence of dynamic capability on the performance of pharmaceutical companies in Kenya. The elements addressed under dynamic capability were environmental scanning, opportunity identification, response to customer and market changes, strategic adjustment, resource reallocation, process improvement, information sharing, adaptation to regulatory and market requirements, and resource and capability reconfiguration. These elements were assessed because dynamic capability explains how firms sense environmental changes, seize emerging opportunities and reconfigure resources to sustain performance in changing business environments (Teece, 2018; Schilke et al., 2018).

Table 4.21: Dynamic Capability

	No extent	Little extent	Moder ate extent	Great extent	Very great extent	Mea n	Std Dev
The organization regularly scans the business environment to identify changes that may affect its operations.	3.2%	9.7%	4.3%	25.8%	57.0 %	4.2	1.12
The organization has clear systems for identifying new market, technological and regulatory opportunities.	5.4%	1.1%	5.4%	24.7%	63.4 %	4.4	1.03
The organization responds quickly to changes in customer needs and market conditions.	6.5%	4.3%	8.6%	20.4%	60.2 %	4.2	1.18
The organization adjusts its strategies when there are changes in competition, regulation or industry trends.	3.2%	3.2%	8.6%	55.9%	29.0 %	4	0.9
The organization reallocates resources when new opportunities or threats emerge.	4.3%	7.5%	12.9%	46.2%	29.0 %	3.9	1.05
The organization regularly improves its internal processes to respond to changes in the pharmaceutical industry.	9.7%	8.6%	10.8%	37.6%	33.3 %	3.8	1.27
The organization encourages departments to share information that supports timely decision-making.	6.5%	5.4%	16.1%	39.8%	32.3 %	3.9	1.13
The organization adapts its products, services or operations to meet changing regulatory and market requirements.	2.2%	3.2%	8.6%	44.1%	41.9 %	4.2	0.89
The organization is able to reconfigure its structures, routines and capabilities to sustain performance in a changing environment.	4.3%	6.5%	8.6%	37.6%	43.0 %	4.1	1.08

From the findings in Table 4.21, 83% of the respondents indicated that their organizations regularly scanned the business environment to identify changes that may affect operations to a great extent, while 4.3% indicated a moderate extent and 13% indicated a low extent. The mean response was 4.2 with a standard deviation of 1.12, showing that most pharmaceutical companies demonstrated strong environmental scanning practices. This finding suggests that firms were attentive to external changes affecting operations, which is consistent with the sensing dimension of dynamic capability (Teece, 2018; Kump et al., 2019).

The results further showed that 88% of the respondents indicated that their organizations had clear systems for identifying new market, technological and regulatory opportunities to a great extent, while 5% indicated a moderate extent and 7% indicated a low extent. The mean response was 4.4 with a standard deviation of 1.03, making this the highest-rated item under dynamic capability. This implies that most firms had established mechanisms for recognizing opportunities in their operating environment, an important condition for strategic renewal and sustained performance (Schilke et al., 2018; Bitencourt et al., 2020).

The findings also revealed that 80% of the respondents indicated that their organizations responded quickly to changes in customer needs and market conditions to a great extent, while 9% indicated a moderate extent and 11% indicated a low extent. The mean response was 4.2 with a standard deviation of 1.18. This indicates that pharmaceutical companies were generally responsive to market changes, which is important because dynamic capability requires firms not only to identify change but also to translate environmental awareness into timely action (Teece, 2018; Kump et al., 2019).

The study findings showed that 85% of the respondents stated that their organizations adjusted strategies when there were changes in competition, regulation or industry trends to a great extent, while 9% indicated a moderate extent and 6% indicated a low extent. The mean response was 4.0 with a standard deviation of 0.90. This shows that strategic adjustment was practiced strongly across the sampled firms, suggesting that pharmaceutical companies were able to revise their strategic

direction in response to industry-level change (Schilke et al., 2018; Masinde et al., 2023).

The results further indicated that 75% of the respondents stated that their organizations reallocated resources when new opportunities or threats emerged to a great extent, while 13% indicated a moderate extent and 12% indicated a low extent. The mean response was 3.9 with a standard deviation of 1.05. This implies that most firms had some capacity to shift resources in response to environmental demands, although the slightly lower mean suggests that resource reallocation may not have been as strong as opportunity identification or environmental scanning (Bitencourt et al., 2020; Kump et al., 2019).

A total of 71% of the respondents indicated that their organizations regularly improved internal processes to respond to changes in the pharmaceutical industry to a great extent, while 11% indicated a moderate extent and 18% indicated a low extent. The mean response was 3.8 with a standard deviation of 1.27. This shows that while many firms were engaged in process renewal, there was greater variation in responses compared to other items. This may suggest that some pharmaceutical firms had stronger internal renewal systems than others, which is expected because dynamic capabilities may differ by organizational resources, leadership and routines (Schilke et al., 2018; Bitencourt et al., 2020).

The findings further illustrated that 72% of the respondents stated that departments shared information that supported timely decision-making to a great extent, while 16% indicated a moderate extent and 12% indicated a low extent. The mean response was 3.9 with a standard deviation of 1.13. This suggests that information sharing supported organizational responsiveness, which is important because dynamic capability depends on the flow of relevant information across departments for sensing, seizing and reconfiguration to occur effectively (Kump et al., 2019; Teece, 2018).

According to the results, 86% of the respondents indicated that their organizations adapted products, services or operations to meet changing regulatory and market requirements to a great extent, while 5% indicated a moderate extent and 9%

indicated a low extent. The mean response was 4.2 with a standard deviation of 0.89. This implies that the firms were relatively strong in adapting operations to external requirements, which is critical in the pharmaceutical industry where regulatory and market changes directly affect competitiveness and performance (Teece, 2018; Masinde et al., 2023).

The results also showed that 80% of the respondents indicated that their organizations were able to reconfigure structures, routines and capabilities to sustain performance in a changing environment to a great extent, while 9% indicated a moderate extent and 11% indicated a low extent. The mean response was 4.1 with a standard deviation of 1.08. This finding suggests that most pharmaceutical firms possessed reconfiguration ability, which is central to dynamic capability because firms must continuously renew resources and routines to maintain performance under changing conditions (Schilke et al., 2018; Bitencourt et al., 2020).

Overall, the descriptive results show that dynamic capability was practiced to a great extent among pharmaceutical companies in Kenya. The highest-rated item was the existence of systems for identifying market, technological and regulatory opportunities, while process improvement recorded the lowest mean. These findings suggest that pharmaceutical firms were stronger in sensing opportunities and adapting to external requirements than in continuously renewing internal processes. The results support the argument that dynamic capability contributes to performance by enabling firms to scan the environment, respond to change, reconfigure resources and sustain competitiveness in uncertain markets (Teece, 2018; Kump et al., 2019; Masinde et al., 2023).

4.6.4 Influence of Human Resource Capability on Firm Performance

The research study evaluated the resultant impact of human resource capability on firm performance. The elements addressed in the study were; competitive hiring process, employee turnover, competitive salaries, skilled employees, internal and external trainers, employee pool diverse expertise, rewarding of employees, replacing absent employees and information sharing among employees. The rates of the measures were assessed on the practice of the measures.

Table 4.22: Human resource Capability

	No extent	Little extent	Moderate extent	Great extent	Very great extent	Mean	Std Dev
The organization has a competitive hiring process of needed skills	4.3%	4.3%	3.2%	15.1%	73.1%	4.5	1.05
Our employee turnover is low	2.2%	4.3%	3.2%	20.4%	69.9%	4.5	0.92
The firm offers competitive salaries to our employees	7.5%	5.4%	5.4%	19.4%	62.4%	4.2	1.24
The organization has employees with all needed skills within the firm	4.3%	4.3%	10.8%	49.5%	31.2%	4	0.99
The firm relies on internal and external trainers	6.5%	10.8%	8.6%	37.6%	36.6%	3.9	1.21
The employee pool in the firm has a diverse expertise	0.0%	15.1%	7.5%	40.9%	36.6%	4	1.03
The organization rewards the most innovative employees as a strategy to stimulate more developments	2.2%	4.3%	10.8%	41.9%	40.9%	4.2	0.93
The firm is capable of replacing the absent employees to maintain its productivity	6.5%	3.2%	9.7%	28.0%	52.7%	4.2	1.15
Information sharing amongst the employees is encouraged through proper communication among the employees	4.3%	6.5%	11.8%	46.2%	31.2%	3.9	1.04

According to the results in Table 4.22, 88% of respondents said that the company has an intense hiring process for the necessary abilities, 3% said that it does so to a moderate degree, and 9% said that it does so to a low degree. The replies had a mean of 4.5 and a standard deviation of 1.05. 90% of those surveyed said that staff turnover is medium to a great extent, 3% said that this assertion related to their company to a moderate amount, and 7% said that it applied to their company to a low degree. The mean of the responses was 4.5 and the standard deviation was 0.92.

Results showed that 82% of the respondents stated that the firm offers competitive salaries to their employees to a high extent, 5% of the respondents stated that this statement moderately applied to their firm, and 13% of the respondents stated to a low extent. The mean of the responses was 4.2 and the standard deviation was 1.24. 81% of the respondents stated that their organization has employees with all needed skills within the firm to a great extent, 11% of the respondents stated that this statement applied moderately to their firm while 8% stated to a low extent. The mean of the responses was 4 and the standard deviation was 0.99. Findings show that 74%

of the respondents indicated that their firm relies on internal and external trainers to a higher extent, 9% of the respondents stated to a moderate extent, while 17% of the respondents stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.21. 77% of the respondents stated that the employee pool has a diverse expertise to a high extent in their firm, 8% of the respondents stated to a moderate extent while 15% of the respondents stated to a low extent. The mean of the responses was 4 and the standard deviation was 1.03. From results, it was shown that, 82% of the respondents stated that their organization rewards the most innovative employees as a strategy to stimulate more developments to a great extent, 11% of the respondents stated that the statement applied moderately to their firm while 7% of the respondents stated to a low extent. The mean of the responses was 4.2 and the standard deviation was 0.93. 80% of the respondents to a high extent stated that the firm is capable of replacing the absent employees to maintain its productivity, 10% of the respondents stated to a moderate extent while 10% of the respondents stated that the statement applies to a low extent in their firm. The mean of the responses was 4.2 and the standard deviation was 1.15.

The results showed that 77% of the respondents indicated that in their organization information sharing amongst the employees is encouraged through proper communication among the employees to a great extent, 12% of the respondents stated to a moderate extent while 11% of the respondents stated to a low extent. The mean of the response was 3.9 while the standard deviation was 1.04. On a similar note, Khan et al., (2010) noted that human resources capabilities vary from one organization to another but typically consist of recruitment and selection of employees with the required skills. Also, they noted that the human resource activities impact indirectly through corporate engagement on organizational results and productivity. On a similar note Porter (1980) suggested that competitive strategy creates competitive advantage, and this has also supported superior business performance. Fok-Yew, (2013) also noted that the quality of service depends on the performance of employees through the service capacity which means the necessary knowledge, skills and concepts to provide excellent service to employees

4.6.5 Firm Characteristics

The research sought to evaluate the resultant impact of firm characteristics on firm performance. The elements addressed in the study were; adequate resources, enough finances, extension branches, technology, objectives, and ethics, staff development programs, top-down approach, and dynamic top management structure. The rates of the measures were assessed on the practice of the measures.

Table 4.23: Firm Characteristics

	No extent	Little extent	Moderate extent	Great extent	Very great extent	Mean	Std Dev
The firm has adequate specialized resources for its operations	1.1%	6.5%	7.5%	34.4%	50.5%	4.3	0.93
The firm has enough finances to fund, maintain and expand its operations	2.2%	9.7%	9.7%	37.6%	40.9%	4.1	1.05
The number of extension branches of products have increased	6.5%	4.3%	12.9%	43.0%	33.3%	3.9	1.11
Technology in the firm has helped it to be competitively advantaged	8.6%	8.6%	10.8%	41.9%	30.1%	3.8	1.22
All the staff uphold the firm objectives, values and ethics as outlined	5.4%	9.7%	11.8%	46.2%	26.9%	3.8	1.11
Appropriate tasks have been well outlined for each employee through staff development programs	0.0%	16.1%	10.8%	40.9%	32.3%	3.9	1.04
The firm employs the top down approach in decision making and change management	4.3%	4.3%	10.8%	40.9%	39.8%	4.1	1.03
The top management structure is dynamic to promote and sustain profitability and growth of firms	6.5%	5.4%	21.5%	43.0%	23.7%	3.7	1.09
The firm structures the management department-wise.	2.2%	5.4%	7.5%	51.6%	33.3%	4.1	0.9

The results showed that, 85% of the respondents indicated that their firm had adequate specialized resources for its operations to a great extent, 7% of the respondents stated to a moderate extent while 8% of the respondents stated to a low extent. The mean of the response was 4.3 while the standard deviation was 0.93. Majority (78%) of the respondents stated that their firm has enough finances to fund, maintain and expand its operations to a high extent, 10% of the respondents stated to a moderate extent while 12% of the respondents stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 1.05. It was shown that, 76% of the respondents stated that the number of extension branches of products have increased to a great extent in their firm, 13% of the respondents stated that the statement applied moderately to their firm while 11% of the respondents stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.11.

The findings show that 72% of the respondents stated that technology in their firm has helped it to be competitively advantaged to a high extent, 11% of the respondents stated to a moderate extent while 17% of the respondents stated to a low extent. The mean of the responses was 3.8 and the standard deviation was 1.22. Findings show that 73% of the respondents indicated that all the staff uphold the firm objectives, values and ethics as outlined to a higher extent, 12% of the respondents stated to a moderate extent, and 15% of the respondents stated to a low extent. The mean of the responses was 3.8 and the standard deviation was 1.11. Majority, 73%, of the respondents stated that appropriate tasks have been well outlined for each employee through staff development programs to a great extent, 11% of the respondents stated that this statement applied moderately to their firm while 16% stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.04.

Most, 81%, of the respondents stated that the firm employs the top-down approach in decision making and change management to a high extent, 11% of the respondents stated that this statement moderately applied to their firm, and 8% stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 1.03. Majority, 67%, of the respondents stated that the top management structure is dynamic to a great extent to promote and sustain profitability and growth of firms,

21% of the respondents indicated to a moderate extent while 12% of the respondents stated to a low extent. The mean of the responses was 3.7 and the standard deviation was 1.09. Majority (85%) of the respondents stated to a great extent that their firm structures the management department-wise, 7% of the respondents stated to a moderate extent, while 8% stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 0.9. On a similar note, Zatezalo and Gray (2014) noted that in order for firms to implement innovations fast, they need to have enough resources which is necessary. They noted that small firms have slow innovations due to lack of enough resources. Muttakin, Khan & Subramanian, (2015) noted that, older firms tend to rely on internal funds to finance their corporate investments and small firms make use of free cash flow available to fund their operations in an aim to improve their financial performance. Gellynck et al., (2012) noted that with perfect knowledge and preparation of the fluctuations in the market, a firm is technologically advantaged to remain competitive despite the possible competition in the market. On a similar note Arthur, (1993) stated that in order to have a strategic impact, the staff should elicit specific staff attitudes like organizational commitment which involve employing values and ethics in the company.

4.6.6 Firm Performance

The research evaluated how firm performance in various firms was achieved. The factors addressed included; return on investment, annual sales, market extension, boosting performance, customer feedback prioritization, minimized negative feedback and internal customer satisfaction. The rates of the measures were assessed on the practice of the measures.

Table 4.24: Firm Performance

	No extent	Little extent	Moderate extent	Great extent	Very great extent	Mean	Std Dev
The return on investment in the firm have been increasing yearly	4.3%	6.5%	12.9%	46.2%	30.1%	3.9	1.04
The annual sales of the company have been increasing	9.7%	8.6%	11.8%	38.7%	31.2%	3.7	1.26
The company market extension has grown overtime	4.3%	9.7%	7.5%	33.3%	45.2%	4.1	1.15
The firm sets aside part of the budget to invest on boosting the performance such as advertising	2.2%	5.4%	7.5%	34.4%	50.5%	4.3	0.97
The company prioritizes the customer feedback and address them promptly	2.2%	5.4%	7.5%	50.5%	34.4%	4.1	0.91
The number of negative feedbacks to the firms have been minimized	3.2%	6.5%	10.8%	39.8%	39.8%	4.1	1.03
The company have focused on ensuring internal customer satisfaction	7.5%	8.6%	9.7%	36.6%	37.6%	3.9	1.22

Results from Table 4.24 illustrated that 76% of the respondents stated that return on investment in their firm have been increasing yearly to a great extent, 13% of the respondents stated to a moderate extent while 11% of the respondents stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.04. Most (70%) of the respondents stated that annual sales of their company have been increasing to a great extent, 12% of the respondents stated to a moderate extent while 18% of the respondents stated to a low extent. The mean of the responses was 3.7 and the standard deviation was 1.26.

Majority (78%) of the respondents stated that the company market extension has grown overtime to a great extent, 8% of the respondents stated to a moderate extent while 14% stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 1.15. Most (85%) of the respondents stated that the firm set

aside part of the budget to invest on boosting the performance such as advertising to a great extent, 7% of the respondents stated to a moderate extent while 8% stated to a low extent. The mean of the responses was 4.3 and the standard deviation was 0.97. Results illustrated that 85% of the respondents stated that their company prioritizes the customer feedback and addresses them promptly to a great extent, 7% stated to a moderate extent while 8% stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 0.91. It is shown that 79% of the respondents stated that the number of negative feedbacks to their firms have been minimized to a great extent, 11% of the respondents stated to a moderate extent while 10% stated to a low extent. The mean of the responses was 4.1 and the standard deviation was 1.03.

Results illustrated that 74% of the respondents stated that their company has focused on ensuring internal customer satisfaction to a great extent, 10% of the respondents stated to a moderate extent while 16% of the respondents stated to a low extent. The mean of the responses was 3.9 and the standard deviation was 1.22. Chow & Ong, (2015) noted that return on investment is mainly used by organizations to measure their ability to realize value of investments. It is mainly used to confirm the additional amount of profits produced from a given investment. On a similar note, Waldman & Jensen (2016) noted that companies seeking to improve their performance and realize high sales and returns must set aggressive marketing strategies that would popularize their brand. This is possible through participation in exhibitions, and advertisements. Teece (2007) noted that, in order to align business operations to the changing environment, organizations need to incorporate strategic assets which include communication and constant feedback from customers. Chuang, Liu and Chen (2015) noted that, internal customer satisfaction is highly regarded in corporate marketing and an internal customer satisfaction survey is often carried out to test how satisfied internal clients or staff within the organization or team are.

4.7 Inferential Statistics

4.7.1 Correlation Analysis

A correlation, which ranges from -1, which is known as perfect negative correlation, to +1, which is known as perfect positive correlation, can be utilized to measure the magnitude of the linear connection between two factors. It shows how closely two variables co-vary. Jan and associates (2015). The correlation coefficient, which gauges the degree of the alleged linear relationship between the variables in issue, is used to quantify correlation (Joseph & Alan, 2012).

Whereas a correlation value of -1 or +1 denotes a perfect linear association, a correlation value of zero implies that there is no linear connection at all between two continuous variables. According to Behm, Edmonds, Harmon, and Ives (2013), the correlation coefficient approaches ± 1 the more strongly the variables are correlated. The factors are directly associated if the coefficient is positive, which means that when one variable's value increases, the other variable's value tends to increase as well. Conversely, if the coefficient is negative, the factors are negatively connected, which means that as the value of one parameter increases, the other variable's value decreases (Joseph & Alan, 2012).

Table 4.25: Correlation Analysis

		Performance
Technological Capabilities	Pearson Correlation	.685**
	Sig. (2-tailed)	0.000
Marketing Capability	Pearson Correlation	.608**
	Sig. (2-tailed)	0.000
Dynamic Capability	Pearson Correlation	.653**
	Sig. (2-tailed)	0.000
Human Resource Capability	Pearson Correlation	.624**
	Sig. (2-tailed)	0.000
Firms Characteristic	Pearson Correlation	.673**
	Sig. (2-tailed)	0.000

From Table 4.25, the findings revealed that there was a positive and significant association between technological capability and firm performance ($r = 0.685$, $p = 0.000$). This implies that technological capability factors have contributed to the resultant firm performance. This correlation coefficient value was between 0.6 and 0.7 indicating a strong positive correlation as a factor of firm performance. A 2-tailed test at 95% level of confidence had a probability value of less than 0.05 which implied that there was a significant correlation between technological capability and firm performance in pharmaceutical companies. Similarly, Ida (2015) conducted a study to identify the bilateral effects of the same type of explorative capabilities research and development and export. The results show that explorative capabilities research and development and export have positive effect on company's performance.

From Table 4.25, the results revealed that there was a positive and significant association between marketing capability and firm performance ($r = 0.608$, $p = 0.000$). This implies that marketing capability factors have contributed to the resultant firm performance. This correlation coefficient value was between 0.6 and 0.7 indicating a strong positive correlation as a factor of firm performance. A 2-tailed test at 95% level of confidence had a probability value of less than 0.05 which implied that there was a significant correlation between marketing capability and firm performance in pharmaceutical companies. On a similar note, Njuki, Mwangi, Wanjiru and Mwirigi (2014) analyzed marketing communication tools and sales performance in business organizations in Kenya. The research study concluded that marketing communication tools had a significant relationship with sales performance.

The findings from Table 4.25 revealed that there was a positive and significant association between dynamic capability and firm performance among pharmaceutical companies in Kenya ($r = 0.653$, $p = 0.000$). This implies that improvement in dynamic capability was associated with improvement in firm performance. The positive relationship suggests that pharmaceutical companies that were better able to scan their environment, identify opportunities, respond to market and regulatory changes, share information, improve processes and reconfigure

resources were more likely to report better performance outcomes. This finding agrees with the dynamic capabilities view, which argues that firms operating in changing environments improve performance when they can sense opportunities and threats, seize opportunities and transform their resource base accordingly (Teece, 2018; Schilke et al., 2018; Kump et al., 2019).

From Table 4.25, the findings revealed that there was a positive and significant association between human resource capability and firm performance ($r = 0.624$, $p = 0.000$). This implies that human resource capability factors have contributed to the resultant firm performance. This correlation coefficient value was between 0.6 and 0.7 indicating a strong positive correlation as a factor of firm performance. The probability value of less than 0.05 for a 2-tailed test at the 95% level of confidence suggested that firm performance in pharmaceutical businesses was significantly correlated with human resource capabilities. Similarly, Ngari (2019) conducted research to determine the connection between Kenyan pharmaceutical companies' commercial success and human capital. The results showed a favorable and significant association between pharmaceutical companies' business performance and the three components of human capital—learning and education, experience and knowledge, and innovation and invention.

The results of Table 4.25 showed that firm characteristics and firm performance were positively and significantly correlated ($r = 0.673$, $p = 0.000$). This suggests that the resulting company performance has been influenced by firm characteristics. A high positive association as a determinant of company success was shown by this correlation coefficient value, which ranged from 0.6 to 0.7. A substantial link between firm characteristics and firm performance in pharmaceutical businesses was suggested by a 2-tailed test with a probability value of less than 0.05 at the 95% level of confidence. Similarly, Kaguri (2014) conducted a survey in Kenya about the relationship between the economic performance of life insurance companies and their corporate attributes. The positive and strong Pearson correlation coefficients indicate that the factors are statistically significant in affecting the financial performance of life insurance companies.

4.7.2 Regression Analysis

To ascertain the link between independent and dependent variables, regression analysis was used. In a pharmaceutical business in Kenya, the study examined the moderating role of firm characteristics in the link between strategic drivers and firm performance. The degree of correlation between the independent and dependent variables was ultimately measured. To ascertain the degree of correlation between the different independent variables (Dynamic, marketing, technology, human resources, and firm characteristics) and the dependent variable (firm performance), the T-test and R² test statistics were calculated.

Regression analysis was done to determine the influence of Technological capability on firm performance. Results were presented in Table 4.26.

Table 4.26: Regression Analysis- Technological Capability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.428 ^a	.183	.174	.549

a. Predictors: (Constant), Technological Capabilities

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.147	1	6.147	20.367	.000 ^b
	Residual	27.466	91	.302		
	Total	33.613	92			

a. Dependent Variable: Performance

a. Predictors: (Constant), Technological Capabilities

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.672	.533		3.135	.002
	Technological Capabilities	.603	.134	.428	4.513	.000

a. Dependent Variable: Performance

The fitness of the regression model employed to describe the research phenomena was shown in Table 4.26. The contribution of technological competence to firm performance was determined to be adequate. The coefficient of determination, or R², of 18.3%, corroborated this. This indicates that the performance of the company is impacted by 18.3% of the variance in technical capabilities. The findings indicated that the relationship was linked by the model. Additionally, this suggests that factors not included in the model account for 81.7% of the variance in the dependent variable.

The analysis of variance (ANOVA) findings were shown in Table 4.26. The model was of statistical significance according to the results. An F-statistic of 20.367 and a p-value of 0.000, which is below the 0.05 (p<0.05) significance level, provided support for this. The results suggested that company success may be accurately predicted by technical capabilities. Likewise, Ida (2015) carried out research to determine the reciprocal impacts of the same kind of experimental capabilities export and research and development. The findings demonstrate that exporting and research and development capabilities have a beneficial impact on a company's performance.

Technological capacity and company performance have a positive and substantial relationship ($\beta = 0.603$, $p = 0.000$), according to the regression of coefficients findings in Table 4.26. This suggests that a 0.603 rise in firm performance would result from a unit rise in technological capabilities.

The regression model for this coefficient would be;

$$Y = \beta_0 + \beta_1 X \dots\dots\dots \text{Equation 5}$$

Where **Y** = firm performance

$$\beta_0 = 1.672$$

$$\beta_1 = 0.603$$

X= technological capability

$$Y = 1.672 + 0.603X \dots\dots\dots \text{Equation 6}$$

H₀₁: Technological capability has no significant influence on the performance of pharmaceutical companies in Kenya

The simple regression results show that technological capability had a positive and significant influence on firm performance ($\beta = 0.603$, $p = 0.000$). Therefore, reject H₀₁ and conclude that technological capability significantly influences the performance of pharmaceutical companies in Kenya.

Regression analysis was done to determine the influence of marketing capability on firm performance. Results were presented in Table 4.27.

Table 4.27: Regression Analysis- Marketing Capability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.608 ^a	.370	.363	.483

a. Predictors: (Constant), Marketing Capability

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.425	1	12.425	53.363	.000 ^b
	Residual	21.188	91	.233		
	Total	33.613	92			

a. Dependent Variable: Performance

b. Predictors: (Constant), Marketing Capability

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.081	.412		2.626	.010
	Marketing Capability	.758	.104	.608	7.305	.000

a. Dependent Variable: Performance

The fitness of the regression model employed to describe the research phenomena was shown in Table 4.27. It was determined that the marketing capacity element contributed satisfactorily to the success of the company. The coefficient of determination, or R² of 37.0%, corroborated this. This indicates that business performance is impacted by 37.0% of the variance in marketing competence. The findings indicated that the connection was linked by the model. This suggests that factors not included in the model account for 63.0% of the variation in the dependent variable.

The analysis of variance (ANOVA) findings were shown in Table 4.27. The model was statistically significant, according to the results. An F-statistic of 53.363 and a p-value of 0.000, which is below the 0.05 (p<0.05) significance level, provided support for this. The results suggested that a firm's performance may be accurately predicted by its marketing competence. A study on the impact of marketing tactics on the sales results of pharmaceutical businesses in Nairobi was carried out by Lule (2011). The study came to the conclusion that marketing tactics were crucial to pharmaceutical businesses' increased sales success.

Marketing competence and business performance are positively and strongly connected ($\beta = 0.758$, $p=0.000$), according to the regression of coefficients results in Table 4.27. This suggests that a 0.758 rise in firm performance would result from a unit increase in marketing capabilities.

The regression model for this coefficient would be;

$$Y = \beta_0 + \beta_1 X \dots\dots\dots \text{Equation 3}$$

Where Y = firm performance

$$\beta_0 = 1.081$$

$$\beta_1 = 0.758$$

X= marketing capability

$$Y = 1.081 + 0.758X \dots\dots\dots \text{Equation 4}$$

H02: Marketing capability has no significant influence on the performance of Pharmaceutical companies in Kenya

The simple regression results show that marketing capability had a positive and significant influence on firm performance ($\beta = 0.758$, $p = 0.000$). Therefore, reject H02 and conclude that marketing capability significantly influences the performance of pharmaceutical companies in Kenya.

Regression analysis was conducted to determine the influence of dynamic capability on firm performance. The results were presented in Table 4.28. Dynamic capability was tested as an independent variable because it reflects the firm's ability to sense environmental change, seize emerging opportunities and reconfigure resources in response to market, technological and regulatory shifts (Teece, 2018; Kump et al., 2019).

Table 4.28 Regression Analysis- Dynamic Capability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.653 ^a	.426	.420	.460

b. Predictors: (Constant), dynamic Capability

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.318	1	14.318	67.530	.000 ^b
	Residual	19.295	91	.212		
	Total	33.613	92			

a. Dependent Variable: Performance

c. Predictors: (Constant), dynamic Capability

d.

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	1.353	.333		4.058	.000
	dynamic Capability	.680	.083	.653	8.218	.000

a. Dependent Variable: Performance

The model summary in Table 4.28 shows that dynamic capability had a satisfactory relationship with firm performance. The coefficient of determination, R^2 , was 0.426, indicating that dynamic capability explained 42.6% of the variation in the performance of pharmaceutical companies in Kenya. This means that the ability of firms to scan the environment, identify opportunities, respond strategically, reconfigure resources and adapt to regulatory and market changes accounted for a substantial proportion of differences in firm performance. The remaining 57.4% of the variation in performance was explained by other factors not included in the simple regression model (Teece, 2018; Bitencourt et al., 2020).

The ANOVA results in Table 4.28 show that the regression model was statistically significant, as indicated by $F = 67.530$ and $p = 0.000$. Since the p-value was below the 0.05 level of significance, the model was considered suitable for predicting firm performance using dynamic capability. This means that dynamic capability was a significant predictor of performance among pharmaceutical companies in Kenya. The finding supports the argument that firms in dynamic industries perform better when they are able to sense changes, seize opportunities and transform their resource base in response to environmental demands (Schilke et al., 2018; Kump et al., 2019).

The regression coefficient results further show that dynamic capability had a positive and significant influence on firm performance ($\beta = 0.680$, $p = 0.000$). This implies that a unit increase in dynamic capability would result in a 0.680 increase in firm performance, holding other factors constant. The positive coefficient means that pharmaceutical firms with stronger adaptive, responsive and resource-reconfiguration capabilities were more likely to report improved performance. This is consistent with studies showing that dynamic capability improves performance by

strengthening organizational adaptability, strategic renewal, innovation and resilience in changing environments (Teece, 2018; Masinde et al., 2023).

The regression model for this coefficient would be;

$$Y = \beta_0 + \beta_1 X \dots\dots\dots \text{Equation 1}$$

Where **Y** = firm performance

$$\beta_0 = 1.353$$

$$\beta_1 = 0.680$$

X= Dynamic capability

$$Y = 1.353 + 0.680X \dots\dots\dots \text{Equation 2}$$

H₀₃: Dynamic capability has no significant influence on the performance of pharmaceutical companies in Kenya

The simple regression results show that Dynamic capability had a positive and significant influence on firm performance ($\beta = 0.680$, $p = 0.000$). Therefore, reject H₀₃ and conclude that Dynamic capability significantly influences the performance of pharmaceutical companies in Kenya.

Regression analysis was done to determine the influence of human resource capability on firm performance. Results were presented in Table 4.29.

Table 4.29: Regression Analysis- Human Resource

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.624 ^a	.389	.382	.475

a. Predictors: (Constant), Human Resource Capability

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.071	1	13.071	57.903	.000 ^b
	Residual	20.542	91	.226		
	Total	33.613	92			

a. Dependent Variable: Performance

b. Predictors: (Constant), Human Resource Capability

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.579	.330		4.778	.000
	Human Resource Capability	.608	.080	.624	7.609	.000

a. Dependent Variable: Performance

The degree of fitness of the regression model employed to describe the research phenomena was shown in Table 4.29. It was determined that the human resource competency element contributed satisfactorily to the success of the company. The coefficient of determination, or R² of 38.9%, corroborated this. This indicates that the performance of the company is impacted by 38.9% of the variance in human resource capabilities. The findings indicated that the relationship was linked by the model. Additionally, this suggests that factors not included in the model account for 61.1% of the variance in the dependent variable.

The analysis of variance (ANOVA) findings were shown in Table 4.29. The model was statistically significant, according to the results. An F-statistic of 57.903 and a p-

value of 0.000, which is below the 0.05 ($p < 0.05$) significant level, provided support for this. The results suggested that a firm's success may be accurately predicted by its human resource capabilities. Ngari (2019) conducted a study to determine the connection between Kenyan pharmaceutical companies' commercial success and human capital. The results showed a favorable and significant association between pharmaceutical companies' commercial performance and the three components of human capital—learning and education, experience and knowledge, and innovation and invention. In a similar vein, Din et al. (2014) investigated how HRM practices affected the financial and non-financial performance of Pakistani SMEs. The results demonstrated that the financial and non-financial performance of small and medium-sized businesses is significantly impacted by incentive programs, collaboration, employee development, performance reviews, and employee involvement in decision-making.

The findings of the regression of the coefficients in Table 4.29 showed a positive and significant relationship between company performance and human resource competence ($\beta = 0.608$, $p = 0.000$). This suggests that a 0.608 rise in firm performance would result from a unit increase in human resource capabilities.

The regression model for this coefficient would be;

$$Y = \beta_0 + \beta_1 X \dots\dots\dots \text{Equation 7}$$

Where Y = firm performance

$$\beta_0 = 1.579$$

$$\beta_1 = 0.608$$

X = human resource capability

$$Y = 1.579 + 0.608X \dots\dots\dots \text{Equation 8}$$

H₀₄: Human resource capability has no significant influence on the performance of Pharmaceutical companies in Kenya.

The simple regression results show that human resource capability had a positive and significant influence on firm performance ($\beta = 0.608$, $p = 0.000$). Therefore, reject H04 and conclude that human resource capability significantly influences the performance of pharmaceutical companies in Kenya.

The objective of the study was to evaluate the moderating effect of firm characteristics on the relationship between strategic drivers and on performance of pharmaceutical Companies in Kenya.

Table 4.30: Regression Analysis- Firm Characteristics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.673 ^a	.453	.447	.450

a. Predictors: (Constant), Firms Characteristics

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.224	1	15.224	75.338	.000 ^b
	Residual	18.389	91	.202		
	Total	33.613	92			

a. Dependent Variable: Performance

b. Predictors: (Constant), Firms Characteristics

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.373	.314		4.379	.000
	Firms Characteristics	.682	.079	.673	8.680	.000

a. Dependent Variable: Performance

The fitness of the regression model employed to describe the research phenomena was shown in Table 4.30. It was discovered that company characteristics well explained firm performance. The coefficient of determination, or R², of 45.3%, corroborated this. This indicates that company performance is impacted by 45.3% of

the variance in firm characteristics. The findings indicated that the relationship was linked by the model. Additionally, it suggests that factors not included in the model account for 54.7% of the variation in the dependent variable.

The analysis of variance (ANOVA) findings were shown in Table 4.30. The model was statistically significant, according to the results. An F-statistic of 75.338 and a p-value of 0.000, which is below the 0.05 ($p < 0.05$) significant level, provided support for this. The results suggested that business performance may be accurately predicted by firm characteristics. In Nakuru, Kenya, Kisengo (2014) studied how corporate attributes affected the success of the microfinance sector. The results showed that firm qualities significantly improved MFI performance. In a similar vein, Beatrice and Amahalu (2017) carried out a successful investigation of the impact of business characteristics on the financial performance of Nigerian listed deposit money banks. The findings indicated that financial performance is positively and statistically significantly impacted by business characteristics.

The results of the regression of the coefficients in Table 4.30 showed a positive and significant relationship between firm performance and firm characteristics ($\beta = 0.682$, $p = 0.000$). This suggests that there would be a 0.682 rise in firm performance for every unit increase in firm feature.

The regression model for this coefficient would be;

$$Y = \beta_0 + \beta_1 X \dots\dots\dots \text{Equation 9}$$

Where Y = firm performance

$$\beta_0 = 1.373$$

$$\beta_1 = 0.682$$

X = firm characteristics

$$Y = 1.373 + 0.682X \dots\dots\dots \text{Equation 10}$$

Overall regression before moderation

The study of the impact of strategic drivers on the performance of pharmaceutical enterprises in Kenya is demonstrated by the models of linear regression analysis. A coefficient of determination indicates how much a change in one of the independent variables— Dynamic, advertising, technological innovation, human resources, and company characteristics—explains a change in the dependent variable, which is business performance.

Table 4.31: Regression Analysis before Moderation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.731 ^a	.534	.512	.422

a. Predictors: (Constant), Human Resource Capability, Technological Capabilities, Dynamic Capability, Marketing Capability

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.937	4	4.484	25.174	.000 ^b
	Residual	15.676	88	.178		
	Total	33.613	92			

a. Dependent Variable: Performance

c. Predictors: (Constant), Human Resource Capability, Technological Capabilities, Dynamic Capability, Marketing Capability

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.461	.437		1.055	.295
	Dynamic Capability	.248	.114	.238	2.176	.032
	Marketing Capability	.221	.133	.177	1.666	.099
	Technological Capabilities	-.035	.128	-.025	-.274	.784
	Human Resource Capability	.197	.102	.202	1.933	.056
	Firms Characteristics	.274	.120	.270	2.285	.025

a. Dependent Variable: Performance

The outcome for model fitness and R squared value is 0.534, as indicated by the model summary in Table 4.31. This indicates that, at a 95% confidence interval, the factors (Dynamic, marketing, technological, and human resource capabilities) that were assessed varied by 53.4% in relation to the firm's success. According to the corrected R², the four independent variables under investigation account for just 53.4% of the strategic determinants influencing pharmaceutical businesses' success. This suggests that 46.6% of the factors influencing company performance are contributed by other factors not examined in this study. Therefore, further study should be done to look into the other elements (46.6%) that have an impact on company success. The study's independent and dependent variables had a significant positive association, as indicated by the correlation coefficient R of 0.731.

The model's significance and the presence of variances among its variables were examined using the ANOVA test, which is displayed in Table 4.31. The ANOVA test yielded a p-value of 0.000, below the predetermined significance level of 0.05 for data with a normal distribution. The model obtained an F-statistic of 25.174, which is significant at the 5% level of significance, according to the data. This outcome shows that, at a 5% significance level, the regression model as a whole is of statistical significance and suitable for use in making predictions. Additionally, it shows that the independent variables— Dynamic, marketing, technology, human resources, and firm characteristics—are statistically significant as elements of strategic drivers in businesses.

The moderating influence of firm characteristics on the strategic drivers of firm performance is tested using moderated multiple regression (MMR) analysis since the study includes a moderating variable. The following are the study's regression models:

OLS Equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \dots\dots\dots (4.1)$

MMR Equation $Y = \beta_0 + [\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5] Z + \varepsilon \dots\dots\dots (4.2)$

Where **Y** represents the firm performance, while **β₁, β₂, β₃, β₄, and β₅** represents beta coefficients of independent variables: Dynamic capability, Marketing capability,

Technological capability, Human resource capability, and firm characteristics while β_0 is Y-intercept or constant term. X_1 , X_2 , X_3 , X_4 and X_5 represent the independent variables: Dynamic capability, Marketing capability, Technological capability, Human resource capability, and firm characteristics, ε is the error term which accounts for all other factors outside the regression equation which may affect the dependent variable. Z represents the moderator (firm characteristics). The variables of the study are firm performance, Dynamic capability, Marketing capability, Technological capability, Human resource capability, and firm characteristics.

The regression results presented in Table 4.31 indicates Dynamic capability, marketing capability, human resource capability and firm characteristics had positive coefficients. Technological capability had a negative but significant correlation. The coefficient addresses the regression model which relates the predictors (independent) and dependent variables as generated by the SPSS.

OLS Equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$ becomes;

$$\text{Firm performance} = 0.461 + 0.248 X_1 + 0.221 X_2 + -0.035 X_3 + 0.197 X_4 + 0.274 X_5 \dots\dots\dots \text{Equation (4.3)}$$

The optimal regression model of the study based on the significance is:

$$\text{Firm performance} = 0.461 + 0.248 X_1 + 0.274 X_5 \dots\dots\dots \text{Equation (4.4)}$$

Only the coefficients of Dynamic capability and firm characteristics were less than the 0.05 at a testing at 95% level of significance. Hence their coefficients explain significant influence of independent variables to the firm performance of pharmaceutical companies. The coefficient values of marketing capability, technological capability and human resource capability were insignificant because p value (Sig value) was greater than 0.05 testing at 95% level of significance. These coefficients express insignificant influence of marketing capability, technological capability and human resource capability to the firm performance in this model.

Overall regression after moderation

The study assessed the significance of the moderator factor on the relationship between strategic capabilities and the outcome Firm performance.

Table 4.32: Overall Moderator Test

Model : 1

Y : Perform

X : Strategy

W : Charact

Sample

Size: 93

OUTCOME VARIABLE:

Perform

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.7389	.5460	.1558	35.6743	3.0000	89.0000
.0000						

Model

	coeff	se	t	p	LLCI
ULCI					

constant 3.2840	-1.4325	2.3737	-.6035	.5477	-6.1490
Strategy 2.4718	1.2580	.6109	2.0595	.0424	.0443
Charact 1.7137	.3839	.6692	.5737	.5676	-.9458
Int_1 .2502	-.0727	.1625	-.4475	.6556	-.3956

Product terms key:

Int_1 : Strategy x Charact

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0010	.2002	1.0000	89.0000	.6556

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

----- END MATRIX -----

The results in the table above implies that the overall effect of moderation with firm characteristics is decreasing since the F statistic of 35.6743 after moderation.

$$Y = \beta_0 + \beta_1 X + \beta_2 X.M + e$$

$$Y = -1.4325 + 0.38X - 0.072X.M$$

Where;

Y= the dependent variable (Firm performance)

M = Moderating variable (firm characteristics)

X= variable composite $\{(X_1+X_2+X_3+X_4)/4\}$

X.M = Interaction term

β_1, β_2 , = Change in Y with respect to a unit change in M.

The table of regression of statistics above, shows that the moderator (firm characteristics) and Firm performance are positively and significantly related. Additionally, the composite variable is positively and significantly related.

Table 4.33: Regression Analysis after Moderation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748 ^a	.560	.535	.412

a. Predictors: (Constant), Firms Characteristics, Technological Capabilities, Human Resource Capability, Marketing Capability, Dynamic Capability

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.825	5	3.765	22.150	.000 ^b
	Residual	14.788	87	.170		
	Total	33.613	92			

a. Dependent Variable: Performance

b. Predictors: (Constant), Firms Characteristics, Technological Capabilities, Human Resource Capability, Marketing Capability, Dynamic Capability

The results revealed that R square increased from 53.4% to 56.0% after moderation with the firm characteristics. This implies that firm characteristics is a good moderator of relationship between strategic drivers and performance of pharmaceutical companies in Kenya.

The results in the table above implies that the overall effect of moderation with firm characteristics is decreasing since the F statistic decreases from 25.174 to 22.150 after moderation.

H₀₅: Firm characteristic has no significant moderating influence on the strategic capabilities and performance of pharmaceutical companies in Kenya.

Firm characteristics had a positive and significant moderation influence on firm performance ($\beta = 0.682$, $p = 0.000$). On that basis, reject H₀₅.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECCOMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, conclusions, recommendations, and areas for further research. The chapter is organized according to the study objectives in order to show clearly how the findings respond to the research problem and hypotheses. It summarizes the influence of technological capability, marketing capability, dynamic capability, and human resource capability on the performance of pharmaceutical companies in Kenya, and also addresses the moderating effect of firm characteristics. The chapter further draws conclusions from the empirical results and gives recommendations that are directly linked to the findings of the study. Dynamic capability is included as a core strategic capability because pharmaceutical companies operate in a changing environment that requires them to sense opportunities and threats, seize emerging opportunities, and reconfigure resources in response to regulatory, market and technological changes (Teece, 2018; Schilke et al., 2018)

5.2 Summary of Major Findings

The study sought to establish the influence of strategic capabilities on the performance of pharmaceutical companies in Kenya and to assess the moderating effect of firm characteristics on that relationship. Data were collected from 93 respondents out of 103 sampled firms, representing a response rate of 90%, which was adequate for analysis. The overall regression model showed that strategic capabilities explained a substantial proportion of variation in firm performance. The findings further showed that technological capability, marketing capability, dynamic capability, and human resource capability each had positive and significant bivariate relationships with firm performance. However, in the combined regression model, dynamic capability and firm characteristics remained the statistically significant predictors of firm performance. This distinction is important because it shows that although all strategic capabilities are useful, dynamic capability played a particularly

strong role when the capabilities were examined together. This supports the view that firms operating in changing environments improve performance when they can adapt, renew processes, and reconfigure resources effectively (Kump et al., 2019; Bitencourt et al., 2020).

5.2.1 Technological Capability and Firm Performance

The first objective of the study was to establish the influence of technological capability on the performance of pharmaceutical companies in Kenya. The findings showed that technological capability had a positive and significant association with firm performance at the bivariate level ($r = 0.685$, $p = 0.000$), while the individual regression results also showed a positive and significant relationship ($\beta = 0.603$, $p = 0.000$). The descriptive findings further showed that many firms had invested in research and development, product design improvement, process adjustment, and partnerships with research institutions. These results suggest that firms that strengthen their technological capability are more likely to improve efficiency, product development, and market responsiveness. This finding is in line with studies reviewed which showed that digital transformation and technological capability improve competitiveness and market performance in pharmaceutical and manufacturing settings. However, the combined regression model later showed that technological capability did not remain a significant predictor after controlling for the other capabilities and firm characteristics. This suggests that although technology is important, its effect on performance may partly operate together with other organizational capabilities rather than independently.

The findings from the research revealed that most of the firms have a well-informed workforce on the technological improvements in pharmaceutical industry. Also, most firms have a well-developed R&D team and budget allocation to the team has been increasing overtime. In the aim of developing new technologies, firms have been extending various partnerships and patents with research institutions. The new technology has enabled firms to undertake conscious products design upgrade and adjust to changes in production processes. Also, the firms have been able to implement innovative effective strategies and have improved the processing,

productivity and realization of the firms' vision and objectives through adjustment with the process changes. As a result, resources of the technology have given the expected output in productivity of the firms.

5.2.2 Marketing Capability and Firm Performance

The second objective of the study was to establish the influence of technological capability on the performance of pharmaceutical companies in Kenya. The findings showed that technological capability had a positive and significant association with firm performance at the bivariate level ($r = 0.685$, $p = 0.000$), while the individual regression results also showed a positive and significant relationship ($\beta = 0.603$, $p = 0.000$). The descriptive findings further showed that many firms had invested in research and development, product design improvement, process adjustment, and partnerships with research institutions. These results suggest that firms that strengthen their technological capability are more likely to improve efficiency, product development, and market responsiveness. This finding is in line with studies reviewed which showed that digital transformation and technological capability improve competitiveness and market performance in pharmaceutical and manufacturing settings. However, the combined regression model later showed that technological capability did not remain a significant predictor after controlling for the other capabilities and firm characteristics. This suggests that although technology is important, its effect on performance may partly operate together with other organizational capabilities rather than independently.

The findings revealed that most firms' quality effect is higher than price effect of their good. Good quality of products effectively increases firm performance. Modern techniques of marketing were employed in most firms enabling them to thrive in the competitive market by advertising their products. The marketing team was provided with enough budget to fund marketing the firm's products. Moreover, the customers orders were fulfilled adequately and the customers were recorded in a database so as to enhance regular updates of new products and benefits accrued to the products. Findings also indicated that most firms had popularized and capitalized the brands of the products assets and the firm's products are unique in branding and quality

arousing interest of customer in the market. Another marketing strategy employed was the firms extending the product sales nationally and internationally. This would necessitate extension of pharmaceutical market increasing performance.

5.2.3 Dynamic Capability and Firm Performance

The third objective of the study was to assess the influence of dynamic capability on the performance of pharmaceutical companies in Kenya. The descriptive findings showed that pharmaceutical companies demonstrated dynamic capability through environmental scanning, opportunity identification, responsiveness to customer and market changes, strategic adjustment, resource reallocation, internal process improvement, information sharing, adaptation to regulatory and market requirements, and resource reconfiguration. These results suggest that most firms had developed adaptive routines that enabled them to respond to changes in the pharmaceutical business environment. This is important because dynamic capability allows firms to move beyond routine operations and renew their resources and processes in line with changing external conditions (Teece, 2018; Kump et al., 2019).

The correlation results showed that dynamic capability had a positive and significant relationship with firm performance, $r = 0.653$, $p = 0.000$. This means that pharmaceutical companies with stronger dynamic capability were more likely to record better performance outcomes. The finding implies that firms that scan the environment, identify opportunities, adjust strategies, improve processes, and reconfigure resources are more likely to improve market share, return on investment, customer satisfaction, and overall competitiveness. This finding is consistent with the dynamic capabilities' perspective, which argues that firms operating in turbulent environments achieve superior outcomes when they can sense changes, seize opportunities, and transform their resource base (Schilke et al., 2018; Teece, 2018).

The individual regression results further showed that dynamic capability had a positive and statistically significant influence on firm performance, $\beta = 0.680$, $p = 0.000$. This implies that a unit increase in dynamic capability was associated with a 0.680 increase in firm performance. The results therefore confirmed that dynamic

capability was an important determinant of performance among pharmaceutical companies in Kenya. In the combined regression model, dynamic capability remained statistically significant, $\beta = 0.248$, $p = 0.032$, even after controlling for technological capability, marketing capability, human resource capability, and firm characteristics. This shows that dynamic capability had a distinct contribution to performance and was not merely overlapping with the other strategic capabilities.

The findings suggest that dynamic capability is particularly important in the pharmaceutical sector because the industry is affected by regulatory changes, technological shifts, competition, supply chain pressures, changing customer needs, and policy emphasis on local production and quality assurance. Pharmaceutical firms that are able to anticipate these changes and adjust their operations accordingly are better positioned to sustain performance. The results therefore indicate that dynamic capability strengthens firm performance by improving adaptability, strategic responsiveness, process renewal, and resource reconfiguration. This supports previous studies which found that dynamic capabilities enhance organizational performance by enabling firms to renew resources and respond effectively to environmental change (Bitencourt et al., 2020; Masinde et al., 2023).

5.2.4 Human Resource Capability and Firm Performance

The fourth objective of the study was to examine the influence of human resource capability on the performance of pharmaceutical companies in Kenya. The results showed that human resource capability had a positive and significant relationship with firm performance ($r = 0.624$, $p = 0.000$), and the individual regression results also indicated a positive and significant effect ($\beta = 0.608$, $p = 0.000$). The descriptive findings suggested that many firms emphasized competitive recruitment, staff motivation, reward for innovation, replacement of absent employees, and internal information sharing. These findings imply that firms that build employee skills, motivate staff, and support knowledge sharing are better positioned to execute strategy and improve performance. The results agree with the literature, where training, knowledge, staff development, and human capital were linked to stronger organizational performance. However, as with technological and marketing

capability, human resource capability did not remain statistically significant in the combined regression model. This suggests that although human resource capability has a meaningful positive relationship with performance, its contribution may overlap with the other strategic capabilities when all are analyzed together.

The research findings revealed that, most organizations have a competitive hiring process and employees hired have all the needed skills. Also, the firms motivate the employees by rewarding the most innovative employees to stimulate more developments. Absent employees are replaced to enable the firm maintain its productivity. The organizations encourage information sharing amongst employees through proper communication among them. Moreover, the firms offer competitive salaries to their employees to create a competitive advantage.

5.2.5 Firm Characteristics and Firm Performance

The fifth objective of the study aimed at finding out the moderating effect of firm characteristics on the relationship between strategic drivers and performance of pharmaceutical companies in Kenya. The regression analysis results revealed that firm characteristics was found to be satisfactory in explaining firm performance. This was supported by coefficient of determination or R^2 of 45.3%. This shows that 45.3% of the variation in firm characteristics affects firm performance. The results meant that the model applied to link the relationship. This also implies that 54.7% of the variation in the dependent variable is attributed to other variables not captured in the model. Regression of coefficients results revealed that firm characteristics and firm performance are positively and significantly related ($\beta = 0.682$, $p = 0.000$). This implies that a unit increase in firm characteristics would lead to increase in firm competitiveness by 0.682.

The results revealed that most firms have adequate specialized resources for its operations. Also, most firms have enough finances to fund, maintain and expand its operations thus have increased number of extension branches of products. The technology in the firms helps them to be competitively advantaged. The staff in most of the firms uphold the firm objectives, values and ethics as outlined thus perform the appropriately outlined tasks through staff development programs. The top-down

approach of decision making has been employed and the top management structure is dynamic to promote and sustain profitability and growth in the firms.

5.3 Conclusion

5.3.1 Technological Capability

Technological capability has been employed by pharmaceutical companies in Kenya by embracing the generation of knowledge and learning. With perfect knowledge and preparation of the fluctuations in the market, a firm is technologically advantaged to remain competitive in the market. The set of activities carried out by the firms which result in new knowledge development enables them to achieve positive economic results. It is concluded that technological capability has a positive and significant relationship to firm performance. Most pharmaceutical firms have employed the technological capabilities which include having a well-informed workforce, allocating budget to R&D team, upgrading their products design and creating partnerships and patents with research institutions. These strategies have enabled firms in Kenya improve their market performance in the modern world.

5.3.2 Marketing Capability

Marketing capability significantly and positively influences performance of pharmaceutical companies in Kenya. Marketing capability is the key factor in the firm which is responsible for enhancing popularization of brands of products and creating awareness to the market on the launching of new products. Through marketing strategies, a firm is able to arouse interest of a customer to their products. It is concluded that the pharmaceuticals in Kenya have employed various marketing strategies that necessitate extension of pharmaceutical market hence improving performance.

5.3.3 Dynamic Capability

The study concluded that dynamic capability significantly and positively influences the performance of pharmaceutical companies in Kenya. The findings showed that

firms with stronger ability to scan the environment, identify opportunities, respond to market changes, adjust strategies, improve internal processes, and reconfigure resources were more likely to achieve better performance. This conclusion is supported by the positive and significant correlation and regression results, which confirmed that dynamic capability was a significant predictor of firm performance. Therefore, dynamic capability is an important strategic capability for pharmaceutical companies operating in a competitive, regulated, and changing business environment.

The study further concluded that dynamic capability is important because pharmaceutical companies cannot rely only on existing products, resources, or routines. The sector is exposed to changes in regulation, technology, customer expectations, supply systems, competition, and health-sector priorities. Firms that are able to renew their processes and reconfigure resources are better positioned to maintain competitiveness and improve performance. Therefore, the study concludes that pharmaceutical companies in Kenya need dynamic capability to remain responsive, resilient, innovative, and strategically aligned with changing market and regulatory conditions

5.3.4 Human Resource Capability

The study concluded that human resource capability has a significant and positive influence on firm performance. Employees are the central drivers of every strategy that an organization adopts since they directly implement the strategies. Their skills are therefore, integral in steering the success of the organizations. The study concluded that the management of most pharmaceutical companies upheld the human resource capability by ensuring recruitment of properly trained staff and embraced staff development to enhance the employee skills. They also motivated employees by rewarding the most innovative employees to stimulate more developments. As a result, the strategies employed improved performance of pharmaceutical companies in Kenya.

5.3.5 Firm Characteristics

The study concluded that firm characteristics have a positive and significant influence on firm performance of pharmaceutical companies in Kenya. Most firms in Kenya had adequate resources and finances and the top management was dynamic in promoting and sustaining profitability and growth. The staff in the firms upheld the firm's objectives, values and ethics making it possible for the management to allocate appropriate tasks which are well outlined through staff development programs.

5.3.6 Firm Performance

The development and deployment of these capabilities directly impact the performance by aligning the company's core strengths with market opportunities and competitive dynamics. In the pharmaceutical industry, where rapid innovation and regulatory compliance are crucial, strategic capabilities serve as essential tools for navigating complexity, driving innovation, responding to competition, and thereby enhancing overall performance and market positioning.

5.4 Recommendations

5.4.1 Technological Capability

In the modern business world, technological capability of a firm stands to be one of the main determinants of how well the organization performs in terms of efficiency and effectiveness. It is therefore recommended that the management of pharmaceutical companies embrace information technology by bringing modern and automated means of production as well as information sharing platforms that create the uniqueness, efficiency and effectiveness of their firms.

5.4.2 Marketing Capability

The study recommended the pharmaceutical company's management should embrace modern techniques of marketing to ensure they promote the sale of their products. The firms should prioritize customers' feedback to adequately fulfil their

orders. Pharmaceutical companies should also embrace uniqueness in branding and quality to form a unique selling point for the company to arouse interest of the customer in the market.

5.4.3 Dynamic Capability

The study recommends that the management of pharmaceutical companies should strengthen dynamic capability as a way of improving firm performance. Managers should establish formal systems for environmental scanning in order to monitor changes in regulation, customer needs, market trends, competitor actions, procurement systems, technology, and supply chain conditions. Such systems would help firms identify opportunities and threats early and respond before environmental changes negatively affect performance. Pharmaceutical companies should therefore invest in market intelligence, regulatory monitoring, customer feedback systems, and internal reporting mechanisms that support timely decision-making.

The study also recommends that pharmaceutical companies should improve their strategic responsiveness. Firms should not only identify changes in the environment, but should also act on such changes through timely strategic decisions. This may include adjusting distribution systems, improving product availability, strengthening quality assurance, adopting digital tools, entering new market segments, forming partnerships, and revising internal processes. Management should therefore create flexible decision-making structures that allow the firm to seize opportunities and respond quickly to threats. This is important because dynamic capability improves performance when sensing is followed by timely action and resource mobilization.

The study further recommends that pharmaceutical companies should strengthen resource reconfiguration and process renewal. Firms should regularly review their internal routines, structures, technologies, staff deployment, and operational processes to ensure that they remain aligned with changing industry requirements. Management should encourage cross-departmental information sharing, continuous improvement, staff learning, and flexible allocation of resources. This would enable firms to respond effectively to regulatory requirements, market shifts, customer expectations, and operational disruptions. By strengthening resource reconfiguration,

pharmaceutical companies can improve adaptability, resilience, competitiveness, and long-term performance

5.4.4 Human Resource Capability

Human resource capability is the main unique organizational resource that can play an integral role in steering the performance and competitiveness of modern business. It is therefore recommended that the pharmaceutical companies through their management embrace human resource strategies through training, hiring trained and experienced staff through which their performance is enhanced.

5.4.5 Firm Characteristics

The pharmaceutical companies' management should ensure the firm has adequate resources, enough finances to fund operations and employ modern technology in production to enhance performance. The firm's management should be dynamic to promote and sustain profitability and growth of the firms.

5.5 Areas for Further Research

The purpose of the study was to evaluate the influence of strategic drivers on performance of pharmaceutical companies in Kenya whereby various factors have been discussed. The study has demonstrated why the pharmaceutical companies need to adopt the strategic drivers and the resultant positive effects in the firm performance in the market. The results revealed that R^2 was 0.560, which implies that 56% of firm competitiveness was explained by the strategic drivers of the firms. The study therefore recommends further study to be done on other possible factors, accounting for 44%, likely to influence the firm performance.

Moreover, other public entities may not have similar influential factors as pharmaceutical companies and therefore research should be done on other firms and institutions to examine the influential factors affecting the firm performance. This will help confirm whether the results of this study are applicable to other institutions as well or not. It is suggested that a more comprehensive study be done within both

public and private firms in production and distribution sector in Kenya to compare and analyze the strategic drivers affecting performance of pharmaceutical companies. Similar studies could also be extended to East African community firms to ascertain their firm performance factors.

Future researchers may also conduct comparative studies between pharmaceutical manufacturers and distributors to determine whether dynamic capability operates differently across the two categories of firms. In addition, future studies may examine other moderating or mediating variables such as organizational culture, regulatory capability, digital transformation, innovation capability, leadership style, or supply chain resilience. This would provide a broader understanding of how pharmaceutical companies can strengthen performance in changing business environments

5.6 Study Contribution to the Body of Literature

This study contributes to the body of strategic management literature by extending understanding of how strategic capabilities influence the performance of pharmaceutical companies in Kenya. Previous studies have often examined firm performance through isolated capabilities such as technology, marketing, human resource practices, or pricing decisions. However, this study advances the literature by examining technological capability, marketing capability, dynamic capability, and human resource capability within one integrated model. The inclusion of dynamic capability strengthens the study because it explains how pharmaceutical firms sense environmental changes, seize opportunities, and reconfigure resources in response to regulatory, technological, competitive, and market shifts (Teece, 2018; Schilke et al., 2018).

The study also contributes context-specific evidence from the Kenyan pharmaceutical sector, an industry characterized by regulation, competition, import dependence, market uncertainty, and pressure for improved access to medicines. By showing that dynamic capability significantly influences firm performance, the study supports the argument that adaptability and strategic renewal are important performance drivers in changing environments. In addition, the study contributes to

literature by incorporating firm characteristics as a moderating variable, thereby showing that organizational attributes such as size, capital base and management structure are relevant in explaining performance outcomes. This provides a useful foundation for future research on strategic capabilities, dynamic capability, and firm performance in pharmaceutical and other regulated sectors

REFERENCES

- Aitken, M. (2016). Understanding the pharmaceutical value chain: Pharmaceuticals Policy and Law, 18(1-4), 55-66.
- Ajibolade, S., & Oyewo, B. (2017). Firm Characteristics and Performance Disclosure in Annual Reports of Nigerian Banks using the Balanced Scorecard.
- Alin, A. (2010). Multicollinearity. *Wiley Interdisciplinary Reviews: Computational Statistics*, 2(3), 370-374.
- Alvesson, M., & Sveningsson, S. (2015). *Changing organizational culture: Cultural change work in progress*: Routledge
- Amue, G.N., Asiegbu, I.F. & Chukwu, I.I. (2012). Improving sales performances through sales force motivation strategies: a study of pharmaceutical firms in Nigeria. *Economic Business Management Economic Research Journal*, Vol 3(5), pp 620-626.
- Anusha, K., Priya, P. K., & Kumar, V. P. (2017). Pharmaceutical product management: *The Pharma Innovation*, 6(11, Part B), 112
- Arnold, E., & Thuriaux, B. (2013). Developing firms' technological capabilities. *Technopolis Group Report*.
- Arokiasamy, L., Fujikawa, T., Piaralal, S. K., & Arumugam, T. (2024). Role of HRM practices in organization performance: A literature review. *International Journal of Sociotechnology and Knowledge Development*, 16(1).
- Arukwe, J. C., & Akpomi, M. E. (2025). Technological capability and competitiveness of pharmaceutical manufacturing companies in South-South, Nigeria. *International Journal of Research and Scientific Innovation*, 12(4), 33–46.

- Azizi, S., KodadadHossini, H., & Roosta, A. (2014).Multi-Level Analysis of Salesperson Performance Determinants. *The International Journal of Humanities*, 19(4), 183-210.
- Babar, Z.-U.-D. (2024). A conceptual framework to build effective medicine pricing policies for low- and middle-income countries (LMICs). *Research in Social and Administrative Pharmacy*, 20(9), 934–939.
- Barney, J. B. (2009). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of management*, 27(6), 643-650.
- Barney, J. B. (2011). Types of competition and the theory of strategy: Toward an integrative framework. *Academy of management review*, 11(4), 791-800.
- Barwise, P., & Farley, J. U. (2014). Marketing metrics: Status of six metrics in five countries. *European Management Journal*, 22(3), 257-262.
- Beatrice, E., & Amahalu, N. (2017). Effect of Firm Characteristics on Financial Performance of Quoted Deposit Money Banks in Nigeria.
- Bekos, G. S., Jaakkola, M., & Chari, S. (2025). Organizational agility and firm performance: The role of architectural marketing capabilities. *Industrial Marketing Management*, 125, 239–253.
- Bell, E., Bryman, A., & Harley, B. (2022). *Business research methods* (6th ed.). Oxford University Press.
- Bitencourt, C. C., de Oliveira Santini, F., Zanandrea, G., Froehlich, C., & Ladeira, W. J. (2020). The extended dynamic capabilities model: A meta-analysis. *European Management Journal*, 38(1), 108–120.
- Brock, D. M., & Hitt, M. A. (2024). Making sense of dynamic capabilities in international firms: Review, analysis, integration, and extension. *International Business Review*, 33(1), 102260.

- Brown, S., Squire, B., & Lewis, M. (2010). The impact of inclusive and fragmented operations strategy processes on operational performance. *International Journal of Production Research*, 48(14), 4179-4198.
- Bryman, A., & Bell, E. (2015). *Business research methods*. Oxford University Press, USA.
- Chemutai, E. B., & Nzulwa, J. (2016). Marketing challenges influencing strategic performance of pharmaceutical companies in Nairobi Kenya. *International Academic Journal of Human Resource and Business Administration*, 2(2), 195-207.
- Chirchir, F. K., Kalui, F. M., & Tari, J. (2024). Firm characteristics and financial performance of non-financial firms listed at Nairobi Securities Exchange, Kenya. *International Journal of Academic Research in Business and Social Sciences*, 14(6), 1762–1772.
- Chow, Y. L., & Ong, S. E. (2015). *Personality and Sales Performance* (No. eres2015_108). European Real Estate Society (ERES)
- Chuang, H. M., Liu, M. J., & Chen, Y. S. (2015). The effects of human resource capability and internal customer satisfaction on organizational effectiveness. *International Journal of Distributed Sensor Networks*, 11(7), 835193.
- Cilingir, Z., & Basfirinci, C. (2014). The impact of consumer ethnocentrism, product involvement, and product knowledge on country of origin effects: An empirical analysis on Turkish consumers' product evaluation. *Journal of International Consumer Marketing*, 26(4), 284-310.
- Collings, D. G., & McMackin, J. (2025). Skills-first HR: A key enabler of future global strategy. *Organizational Dynamics*, 54(3), 101140.
- Cook, R. D., & Weisberg, S. (1983). Diagnostics for heteroscedasticity in regression. *Biometrika*, 70(1), 1-10.

- Cordeiro, J. J., & Tewari, M. (2015). Firm characteristics, industry context, and investor reactions to environmental CSR: A stakeholder theory approach. *Journal of Business Ethics*, 130(4), 833-849.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, 16(3), 297-334.
- Deng, D., Zhang, J., Wang, J., & Zong, X. (2025). Sustainable performance evaluation of pharmaceutical companies: Sustainable balanced scorecard and hybrid MCDM approach. *Frontiers in Public Health*, 12, 1495156.
- Dickson, P. R. (2012). Toward a general theory of competitive rationality. *Journal of marketing*, 56(1), 69-83.
- Din, S., Bibi, Z., Karim, J., & Bano, A. (2014). HRM Practices Can Do the Miracles: A Case Study of Pharmaceutical Companies. *Pakistan Journal of Social Sciences (PJSS)*, 34(2).
- Duah, F. A., Bamfo, B. A., & Marfo, J. S. (2024). Marketing capability and firm performance: The mediating role of resource orchestration capability. *Cogent Business & Management*, 11(1), 2318880.
- Dzisi, S., & Ofori, D. (2014). Marketing strategies and the performance of SMEs in Ghana. *Marketing*, 6(5)
- Eisenhardt, K. M., & Santos, F. M. (2010). Knowledge-based view: A new theory of strategy. *Handbook of strategy and management*, 1(139-164)
- Elijah, C. M., Bwana, F. O., & Magoyi, E. N. (2014). Effects of information communication technology on the procurement of pharmaceutical drugs in public hospitals in Kenya; *International Journal for Innovation Education and Research*, 2(8), 89-113

- Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and moderation effects. *Prevention Science*, 10(2), 87-99.
- Fitz-Oliveira, M., & Tello-Gamarra, J. (2024). Technological capability and firm performance: A literature review with meta-analysis of studies into manufacturing firms. *Journal of Manufacturing Technology Management*, 35(4), 744–765.
- Fok-Yew, O., Ahmad, H., & Baharin, S. (2013). Operational excellence and change management in Malaysia context. *Journal of Organizational Management Studies*, 2013, 1.
- Fu, Y., & Ran, Y. (2025). Impact of the price negotiation on U.S. pharmaceutical and biotechnology firms: Evidence from the 2022 Inflation Reduction Act. *Finance Research Letters*, 86, 108600.
- Gaw, S., & Brooks, B. W. (2016). Changing tides: Adaptive monitoring, assessment, and management of pharmaceutical hazards in the environment through time: *Environmental toxicology and chemistry*, 35(4), 1037-1042.
- Gereffi, G. (2017). *The pharmaceutical industry and dependency in the third world*; Princeton University Press
- Githua, M. N., & Muathe, S. M. (2024). Digital transformation: Is there any link with market performance of pharmaceutical micro, small and medium-sized enterprises in Kenya? *American International Journal of Social Science Research*, 15(2), 1–12.
- Gonzalez, G. R., Claro, D. P., & Palmatier, R. W. (2014). Synergistic effects of relationship managers' social networks on sales performance. American Marketing Association.
- Grant R.M (2013) Contemporary strategy analysis 8th edition United Kingdom

- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(Winter Special Issue), 109–122.
- Grant, R. M. (2010). Porter's 'competitive advantage of nations': an assessment. *Strategic management journal*, 12(7), 535-548.
- Grootendorst, P. (2009). *Patents, Public-Private Partnerships or Prizes—How should we support pharmaceutical innovation?* (No. 250). McMaster University.
- Guesh, B. (2010). *Assessment of Factors Affecting Sales Volume: A Case Study of Mesfin Industrial Engineering PLC* (Doctoral dissertation, Mekelle University).
- Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of production economics*, 133(2), 662-676.
- Hafeez, U., & Akbar, W. (2015). Impact of Training on Employees Performance (Evidence from Pharmaceutical Companies in Karachi, Pakistan). *Business Management and Strategy*, 6(1), 49-64.
- Hair, J. F., Babin, B. J., Anderson, R. E., & Black, W. C. (2022). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hair, J. F., Celsi, M., Ortinau, D. J., & Bush, R. P. (2008). *Essentials of marketing research*. New York, NY: McGraw-Hill/Higher Education.
- He, H., Zhan, Y., Huo, B., Zhang, Y., & Shi, X. (2025). The impact of national centralized drug procurement policy on firm performance: Evidence from Chinese pharmaceutical firms. *Transportation Research Part E: Logistics and Transportation Review*, 200, 104225.
- Hillier, F. S. (2012). *Introduction to operations research*. Tata McGraw-Hill Education.

- Hoberg, G., & Phillips, G. (2016). Text-based network industries and endogenous product differentiation. *Journal of Political Economy*, 124(5), 1423-1465.
- Hogan, S. J., & Coote, L. V. (2014). Organizational culture, innovation, and performance: A test of Schein's model. *Journal of Business Research*, 67(8), 1609-1621.
- Horner, R. (2013). Strategic decoupling, recoupling and global production networks: India's pharmaceutical industry. *Journal of Economic Geography*, 14(6), 1117-1140.
- Hosen, S., Hamzah, S. R., Ismail, I. A., Alias, S. N., Aziz, M. F. A., & Rahman, M. M. (2024). Training and development, career development, and organizational commitment as the predictor of work performance. *Heliyon*, 10(1), e23903.
- <http://www.aspenpharma.com/wp->
- Hu, J., & Xu, Y. (2023). *Impact of digital transformation on financial performance of pharmaceutical enterprises: A case study of Harbin Pharmaceutical Group*. [Case-study source used earlier in draft; full outlet details should be checked before final submission.]
- Jin, J., & Von Zedtwitz, M. (2008). Technological capability development in China's mobile phone industry. *Technovation*, 28(6), 327-334.
- Johlke, M. C., & Iyer, R. (2013). A model of retail job characteristics, employee role ambiguity, external customer mind-set, and sales performance. *Journal of Retailing and Consumer Services*, 20(1), 58-67.
- Johnston, M. W., & Marshall, G. W. (2016). *Sales force management: Leadership, innovation, technology*. Routledge.

- Kaguri, A. W. (2014). Relationship between firm characteristics and financial performance of life insurance companies in Kenya. *Research Project. University of Nairobi*.
- Kale, D. (2012). Innovative capability development in the Indian pharmaceutical industry. *International Journal of Innovation and Technology Management*, 9(02), 1250013.
- Kale, D., & Little, S. (2007). From imitation to innovation: The evolution of R&D capabilities and learning processes in the Indian pharmaceutical industry. *Technology Analysis & Strategic Management*, 19(5), 589-609.
- Kaplan, W., Boskovic, N., Flanagan, D., Lalany, S., & Lin, C. Y. (2017). Pharmaceutical policy in countries with developing healthcare systems: synthesis of country case studies. In *Pharmaceutical Policy in Countries with Developing Healthcare Systems* (pp. 405-430). Springer International Publishing.
- Karami, A. (2016). *Strategy formulation in entrepreneurial firms*. Routledge.
- Karimi, J. M. N. (2014). *Relationship between intellectual capital accounting and business performance in the pharmaceutical firms in Kenya* (Doctoral dissertation).
- Khalil, S., & Belitski, M. (2020). Dynamic capabilities for firm performance under the information technology governance framework. *European Business Review*, 32(2), 129–157.
- Khan B., Farooq A., & Hussain Z. (2010). Human resource management: an Islamic perspective. *Asia-Pacific Journal of Business Administration*, 2(1), 17-34.
- Khoso, I., Ahmed, R. R., & Ahmed, J. (2014). Pricing strategies in pharmaceutical marketing. *The Pharma Innovation*, 3(7, Part A), 13.

- Kisengo, Z. M. (2014). Effect of Firm characteristics on Performance of the Microfinance Sector in Nakuru, Kenya (*Doctoral dissertation*).
- Konje, J. A. (2016). *Effects of Print Media Coverage on the Performance of Pharmaceutical Industry in Kenya* (Doctoral dissertation, United States International University-Africa).
- Kump, B., Engelmann, A., Keßler, A., & Schweiger, C. (2019). Toward a dynamic capabilities scale: Measuring organizational sensing, seizing, and transforming capacities. *Industrial and Corporate Change*, 28(5), 1149–1172.
- Kung'a, A. B. (2016). The Influence of Relationship Marketing on Sales Performance in The Telecommunication Industry in Kenya.
- Lelenguiya P. (2016) *Effects of firm characteristics on financial performance of quoted commercial banks in Kenya*. Unpublished PhD Thesis, Nairobi: KU.
- Li, D. Y., & Liu, J. (2014). Dynamic capabilities, environmental dynamism, and competitive advantage: Evidence from China. *Journal of Business Research*, 67(1), 2793-2799.
- Liang, Z., Du, J., & Hua, Y. (2025). The impact of digital marketing capability on firm performance: Empirical evidence from Chinese listed manufacturing firms. *Journal of Theoretical and Applied Electronic Commerce Research*, 20(3), Article 236.
- Liozu, S. M., & Hinterhuber, A. (2013). Pricing orientation, pricing capabilities, and firm performance. *Management Decision*, 51(3), 593-614.
- Lule, E. N. (2011). *The effectiveness of marketing strategies on sales performance of pharmaceutical companies in Nairobi, Kenya*. Unpublished PhD Thesis, Nairobi: Kenya.

- Madani, H., Mahboudi, M., & Ahani, Z. (2014). Technological capabilities in the pharmaceutical industry. *Indian J. Sci. Res*, 4(6), 795-805.
- Madsen, D. Ø. (2025). Balanced scorecard: History, implementation, and impact. *Encyclopedia*, 5(1), Article 39.
- Magutu, P. O., Aduda, J., & Nyaoga, R. B. (2015). Does Supply Chain Technology Moderate the Relationship between Supply Chain Strategies and Firm Performance? Evidence from Large-Scale Manufacturing Firms in Kenya: *International Strategic Management Review*, 3(1), 43-65.
- Maigetter, K., Pollock, A. M., Kadam, A., Ward, K., & Weiss, M. G. (2015). Pharmacovigilance in India, Uganda and South Africa with reference to WHO's minimum requirements. *International journal of health policy and management*, 4(5), 295.
- Malik, A., Nguyen, M., Budhwar, P., Chowdhury, S., & Gugnani, R. (2024). Leveraging high-performance HRM practices and knowledge sharing for managing technological and social change in emerging market healthcare providers. *Technological Forecasting and Social Change*, 205, 123463.
- Marshall, G. W., Baker, J., & Finn, D. W. (2008). Exploring internal customer service quality. *Journal of Business & Industrial Marketing*, 13(4/5), 381-392.
- Martínez Sánchez, A., & Pérez Pérez, M. (2015). Supply chain flexibility and firm performance: a conceptual model and empirical study in the automotive industry. *International Journal of Operations & Production Management*, 25(7), 681-700.
- Masinde, M. N., Otinga, H. N., & Miroga, J. (2023). Dynamic capabilities and performance of pharmaceutical firms in Nairobi County, Kenya. *The Strategic Journal of Business & Change Management*, 10(3), 499–522.

- Masinde, M. N., Otinga, H., & Miroga, J. (2023). Dynamic capabilities and performance of pharmaceutical firms in Nairobi County. *The Strategic Journal of Business & Change Management*, 10(3), 499–522.
- Mas-Tur, A., & Soriano, D. R. (2014). The level of innovation among young innovative companies: The impacts of knowledge-intensive services use, firm characteristics and the entrepreneur attributes. *Service Business*, 8(1), 51-63.
- Matei, A. I., & Savulescu, C. (2014). Enhancing the capacity for innovation of public administration. An exploratory study on e-Governance, ICT, knowledge management in Romania. *Theoretical and Applied Economics*, 21(11), 592-600.
- Mbugua, D. M. (2014). *Personal selling strategies and performance of pharmaceutical firms in Nairobi, Kenya*: Unpublished journal, Nairobi: Kenyatta University
- Mbugua, D.M. (2014). *Personal selling strategies and performance of pharmaceutical firms in Nairobi, Kenya*. University of Nairobi.
- Mikalef, P., & Pateli, A. (2017). Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: Findings from PLS-SEM and fsQCA. *Journal of Business Research*, 70, 1-16.
- Ministry of Health. (2024, January 31). *Health CS urges investment in local pharmaceutical manufacturing*.
- Ministry of Health. (2024, May 16). *Kenya hosts AFCFTA-anchored pharma initiative conference*.
- Ministry of Health. (2025, December 21). *Kenya, WHO strengthen strategic health partnership at global summit in India*.

- Ministry of Health. (2025, June 26). *Kenya targets 50% local production of essential medicines*.
- Mintz, O., & Currim, I. S. (2013). What drives managerial use of marketing and financial metrics and does metric use affect performance of marketing-mix activities? *Journal of Marketing*, 77(2), 17-40.
- Mintzes, B., Lexchin, J., Sutherland, J. M., Beaulieu, M. D., Wilkes, M. S., Durrieu, G., & Reynolds, E. (2013). Pharmaceutical sales representatives and patient safety: a comparative prospective study of information quality in Canada, France and the United States. *Journal of general internal medicine*, 28(10), 1368-1375.
- Miozza, M., Brunetta, F., & Appio, F. P. (2024). Digital transformation of the pharmaceutical industry: A future research agenda for management studies. *Technological Forecasting and Social Change*, 207, 123580.
- Miriti, B. D., & Mutinda, J. (2024). Effect of pricing strategy on the performance of pharmaceutical distributors in Nairobi County, Kenya. *International Journal of Social Science and Humanities Research*, 12(2), 111–118.
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of cardiac anaesthesia*, 22(1), 67.
- Morash, E. A. (2012). Supply chain strategies, capabilities, and performance. *Transportation journal*, 37-54.
- Moreno, S. G., & Epstein, D. (2019). The price of innovation-the role of drug pricing in financing pharmaceutical innovation. A conceptual framework. *Journal of market access & health policy*, 7(1), 1583536.
- Moturi, C., & Kahonge, V. W. (2015). Association Analysis of Pharmaceutical Imports in Kenya. *International Journal of Computer Applications Technology and Research*, 4(6).

- Mugenda, O., & Mugenda, A. (2003). *Research Methods: Qualitative and Quantitative Approaches*. Nairobi: Africa Centre for Technology Studies.
- Mulei, S. (2015) *Influence of information communication technology adoption in marketing of pharmaceutical products by pharmaceutical manufacturing companies in Nairobi*. Unpublished Journal.
- Munene, W. (2016). *An exploration of strategies adopted by pharmaceutical companies in Kenya to achieve sustainable competitive advantage* (Doctoral dissertation, Strathmore University).
- Muttakin, M. B., Khan, A., & Subramaniam, N. (2015). Firm characteristics, board diversity and corporate social responsibility: evidence from Bangladesh. *Pacific Accounting Review*, 27(3), 353-372.
- Mutunga, A. W., Munga, J., & Mbebe, J. (2024). Influence of organizational structure on the performance of pharmaceutical manufacturing companies in Nairobi County. *International Journal of Research and Innovation in Social Science*, 8(6), 1742–1750.
- Nafuna, E., Ayub Kutosi Masaba, D., Tumwine, S., Watundu, S., Bonareri, T. C., & Nakola, N. (2019). Pricing Strategies and Financial Performance: The Mediating effect of Competitive Advantage. Empirical Evidence from Uganda, A study of Private Primary Schools. *Global Journal of Management And Business Research*.
- Namada, J. M. (2018). Organizational learning and competitive advantage. In *Handbook of Research on Knowledge Management for Contemporary Business Environments* (pp. 86-104). IGI Global.
- Ndiege, J. R., Herselman, M. E., & Flowerday, S. V. (2014). Absorptive Capacity and ICT Adoption Strategies for SMEs: a Case Study in Kenya. *The African Journal of Information Systems*, 6(4), 2.

- Ng'ang'a, K. N. U. (2018). *Strategic agility and competitiveness of pharmaceutical companies in Kenya*. Unpublished PhD Thesis, Nairobi: UoN.
- Ngamau, E. (2016). *Challenges Facing Marketing of Pharmaceutical Products in Kenya*. Unpublished PhD Thesis, Nairobi: United States International University-Africa.
- Ngari, J. M. (2016). Intellectual Capital and Business Performance of Pharmaceutical Firms in Kenya: *Corporate Espionage, Geopolitics, and Diplomacy Issues in International Business*, 188.
- Ngari, J. M. (2019). Intellectual Capital and Business Performance of Pharmaceutical Firms in Kenya. In *Human Performance Technology: Concepts, Methodologies, Tools, and Applications* (pp. 851-873). IGI Global.
- Ngatuni, D. M. (2010). *Analysis of the Effects of Promotion Tools and Strategies on the Pharmaceutical Firms' Sales Performance in Nairobi*. Unpublished PhD Thesis. Nairobi: KU.
- Ngugi, S. W. (2025). *Marketing strategies and performance of selected pharmaceutical manufacturing firms in Nairobi City Count Kenya*. Unpublished MSc Thesis, Nairobi: KU.
- NINGALA, K. M. (2014). *Strategies Adopted by Multinational Pharmaceutical Firms in Kenya to Respond to Competitive Rivalry in The Pharmaceutical Industry*. Unpublished PhD Thesis, Nairobi: UoN.
- Ningala, K. M. (2014). *Strategies adopted by multinational pharmaceutical firms in Nairobi Kenya to respond to competitive rivalry in the pharmaceutical industry*. Unpublished PhD Thesis, Nairobi: UoN.
- Njaaga, A. W., Odari, S. A., Kamunge, J. W., Mokaya, M. A., Mburu, S. W., Mogaka, C. K., ... & Wamala, N. J. (2017). *Generic Competitive Strategies*

and the Performance of Pharmaceutical Manufacturing Companies in Nairobi City County, Kenya.

Njambi J. and Kihara K. (2016). Factors affecting performance of manufacturing firms in Kenya: a case of pharmaceutical firms In Nairobi County. *Journal of small business and enterprise development*, 21(1), 100-116.

Njeri, I. M. (2013). *Strategic management practices and performance of large pharmaceutical firms in Kenya*. Unpublished PhD Thesis, Nairobi: UoN.

Njuki, E., Mwangi, O., Wanjiru, S., Mwirigi, K., & Campus, K. (2014). Analysis of marketing communication tools and sales performance in business organizations in Kenya. A case of public service bus companies in Mombasa. *Analysis*, 6(26).

Nkasi, E. E., & Philemon, M. (2025). Firm attributes and financial performance of listed manufacturing companies in Nigeria. *African Journal of Business Development and Management Research*, 7(7).

Nolega, K. S., Oloko, M., William, S., & Oteki, E. B. (2015). Effects of product differentiation strategies on firm product performance a case of Kenya seed company (KSC), Kitale. *International Journal of Novel Research in Marketing Management and Economics Novelty Journals*, 2(3), 100-110.

Noonari, S., Irfana, N. M., Raiz, A. B., Muhammad, I. K., & Ali, S. (2015). Price Flexibility and Seasonal Variations of Major Vegetables in Sindh Pakistan. *J Food Process Technol*, 6(524), 2.

O'Meara, W. P., Obala, A., Thirumurthy, H., & Khwa-Otsyula, B. (2013). The association between price, competition, and demand factors on private sector anti-malarial stocking and sales in western Kenya: considerations for the AMFm subsidy. *Malaria journal*, 12(1), 186.

- Odhiambo, M. (2013). The effect of pricing as a competitive strategy on sales performance of selected pharmaceutical companies in Nairobi County (Doctoral dissertation, School of business, University of Nairobi).
- Odhon'g, E. A., & Omolo, J. (2015). Effect of human capital investment on organizational performance of pharmaceutical companies in Kenya.
- Odhon'g, E. A., & Omolo, J. (2015). Effect of human capital investment on organizational performance of pharmaceutical companies in Kenya. *Global Journal of Human Resource Management*, 3(6), 1-29.
- Odhong', E. A., & Omolo, J. (2015). Effect of human capital investment on organizational performance of pharmaceutical companies in Kenya. *Global Journal of Human Resource Management*, 3(6), 1-29.
- Odipo, B. A., & Njeru, A. W. (2016). To Examine the Influence of Market Place as a Factor of Corporate Social Responsibility on Competitive Advantage within Pharmaceutical Companies in Kenya: *International Journal of Academic Research in Business and Social Sciences*, 6(7), 130-141.
- Olubunmi Aderemi, H., Ayodele Ojediran, I., Akinade Adegbite, S., & Olufunke Olasanmi, O. (2015). Effects of the use of ICT on pharmaceutical product marketing in Nigeria. *International Journal of Management and Business Research*, 5(4), 315-327.
- Onyango, J. A. (2014). *Strategies employed by pharmaceutical Manufacturing companies in addressing Marketing challenges in Nairobi Kenya*. Unpublished MBA Thesis, Nairobi: UoN.
- Onyango, J. A. (2017). *Motivational Strategies and Sales Force Performance in the Insurance Industry in Kenya*. Unpublished. Unpublished PhD Thesis, UPublished PhD Thesis, Nairobi: United States International University-Africa)

- O'sullivan, D., & Abela, A. V. (2008). Marketing performance measurement ability and firm performance. *Journal of marketing*, 71(2), 79-93.
- Ouma, A. M. (2018). *Influence of value disciplines strategy on the management of efficiency levels in the pharmaceutical industry in Kenya*. Unpublished PhD Thesis, Juja: JKUAT.
- Oyegbami, O. G., Oladejo, M. O., & Onigbinde, I. O. (2025). Impact of pricing strategy on sales performance of pharmaceutical firms in Nigeria. *International Journal of Economics, Finance and Management Research*, 9(7).
- Oyoolo, J. D., & Bett, S. (2017). Competitive strategies and performance of organizations in the pharmaceutical industry: Case of Pharma Specialities Limited Nairobi, Kenya. *International Academic Journal of Human Resource and Business Administration*, 2(4), 156-173.
- Padilla-Díaz, M. (2015). Phenomenology in educational qualitative research: Philosophy as science or philosophical science. *International Journal of Educational Excellence*, 1(2), 101-110.
- Parida, V., Oghazi, P., & Cedergren, S. (2016). A study of how ICT capabilities can influence dynamic capabilities. *Journal of Enterprise Information Management*, 29(2), 179-201.
- Pendharkar, A., & Pandey, V. K. (2011) Personality and Sales Performance.
- Pharmacy and Poisons Board. (2024, August 20). *PPB hosts strategic partners meeting on mandatory bioequivalence requirements for locally manufactured pharmaceuticals*.
- Pharmacy and Poisons Board. (2024, March 15). *List of registered and licensed pharmaceutical outlets in Kenya*.

- Pharmacy and Poisons Board. (2024, September 26). *Consensus reached on bioequivalence requirements in Kenya*.
- Pharmacy and Poisons Board. (2025, April 7). *Guidelines on reliance mechanisms for marketing authorization of health products and technologies in Kenya*.
- Pollock, A. (2014). Places of pharmaceutical knowledge-making: Global health, postcolonial science, and hope in South African drug discovery. *Social studies of science*, 44(6), 848-873.
- Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. Free Press.
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.
- Qiu, M., & La, B. (2016). Firm characteristics as determinants of capital structures in Australia. *International journal of the Economics of Business*, 17(3), 277-287.
- Reichert, F. M., & Zawislak, P. A. (2014). Technological capability and firm performance. *Journal of technology management & innovation*, 9(4), 20-35.
- Rice, J. F. (2010). *Adaptation of Porter's five forces model to risk management*. Defense Acquisition Univ Ft Belvoir Va.
- Rod, M., & Ashill, N. J. (2010). Management commitment to service quality and service recovery performance: A study of frontline employees in public and private hospitals. *International Journal of Pharmaceutical and Healthcare Marketing*, 4(1), 84-103.
- Rodriguez, M., Peterson, R. M., & Ajjan, H. (2015). CRM/social media technology: impact on customer orientation process and organizational sales performance. In *Ideas in Marketing: Finding the New and Polishing the Old* (636-638).

- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Rogers, E. M. (2004). A prospective and retrospective look at the diffusion model. *Journal of health communication*, 9(S1), 13-19
- Ryan, V. (2011). Why information communication technology is a vital marketing tool with reference to the DVD/CD industry. *Retrieved, October, 12, 2015*.
- Samuel, T. M. (2016). *Market development strategies and performance of multinational pharmaceutical companies in Kenya* (Doctoral dissertation, School of Business, University of Nairobi).
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson.
- Schechner, R. (2017). *Performance studies: An introduction*. Routledge.
- Schilke, O., Hu, S., & Helfat, C. E. (2018). Quo vadis, dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research. *Academy of Management Annals*, 12(1), 390–439.
- Schilke, O., Hu, S., & Helfat, C. E. (2018). Quo vadis, dynamic capabilities? A content-analytic review of the current state of knowledge and recommendations for future research. *Academy of Management Annals*, 12(1), 390–439.
- Schwepker, C. H., & Schultz, R. J. (2015). Influence of the ethical servant leader and ethical climate on customer value enhancing sales performance. *Journal of Personal Selling & Sales Management*, 35(2), 93-107.
- Sekaran, U., & Bougie, R. (2013). *Elements of research design*.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

- Shannahan, K. L., Bush, A. J., & Shannahan, R. J. (2013). Are your salespeople coachable? How salesperson coachability, trait competitiveness, and transformational leadership enhance sales performance. *Journal of the Academy of Marketing Science*, 41(1), 40-54.
- Silva, A. A., & Ferreira, F. C. (2017). Uncertainty, flexibility and operational performance of companies: modelling from the perspective of managers. *RAM.Revista de Administração Mackenzie*, 18(4), 11-38.
- Singh, V. L., Manrai, A. K., & Manrai, L. A. (2015). Sales training: A state of the art and contemporary review. *Journal of Economics, Finance and Administrative Science*, 20(38), 54-71.
- Spanos, Y. E., & Lioukas, S. (2001). An examination into the causal logic of rent generation: contrasting Porter's competitive strategy framework and the resource-based perspective. *Strategic management journal*, 22(10), 907-934.
- Stoian, M.-C., Tardios, J. A., & Samdanis, M. (2024). The knowledge-based view in international business: A systematic review of the literature and future research directions. *International Business Review*, 33(2), 102239.
- Stonier, P. D., & Jones, S. A. (2025). Professional competencies and capabilities in the development of medicines. *Pharmaceutical Medicine*, 39(6), 225–234.
- Sveiby, K. E. (2009). A knowledge-based theory of the firm to guide in strategy formulation. *Journal of intellectual capital*, 2(4), 344-358.
- 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. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49.

- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Terjesen, S., Patel, P. C., & Covin, J. G. (2011). Alliance diversity, environmental context and the value of manufacturing capabilities among new high technology ventures. *Journal of Operations Management*, 29(1), 105–115.
- Tj, H. W., Wibowo, J. M., & Widjaja, B. T. (2025). Human capital, competitive advantage, and business performance: A study of Indonesian hospitals. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(2), 100515.
- Torres, R., Sidorova, A., & Jones, M. C. (2018). Enabling firm performance through business intelligence and analytics: A dynamic capabilities perspective. *Information & Management*, 55(7), 822–839.
- UNIDO. 2011. *Nigeria Pharmaceutical Sector Profile*. Vienna: United Nations Industrial Development Organization.
- United Nations Conference on Trade and Development. (2025). *Building the case for investment in local pharmaceutical production in Africa: A comprehensive framework for investment policymakers*. United Nations.
- Verbeke, W., Dietz, B., & Verwaal, E. (2011). Drivers of sales performance: a contemporary meta-analysis. Have salespeople become knowledge brokers? *Journal of the Academy of Marketing Science*, 39(3), 407–428.
- Vishnu, S., & Kumar Gupta, V. (2014). Intellectual capital and performance of pharmaceutical firms in India. *Journal of Intellectual Capital*, 15(1), 83–99.

- Vorhies, D. W., Morgan, R. E., & Autry, C. W. (2009). Product-market strategy and the marketing capabilities of the firm: impact on market effectiveness and cash flow performance. *Strategic Management Journal*, 30(12), 1310-1334.
- Vugigi, S. K. (2017). *Assessment of the pharmaceutical manufacturing industry in Kenya to forecast local production sufficiency* (Doctoral dissertation).
- Waldman, D., & Jensen, E. (2016). *Industrial organization: theory and practice*. Routledge
- Wamae, W., & Kungu, J. K. (2014). Pharmaceutical Manufacturing in Kenya: Key trends and Developments.
- Wamae, W., Kariuki, J. K., Clark, N., & Mackintosh, M. (2014). Spotlight on Pharmaceutical Pricing Regulation in Kenya: How Much does it Really Contribute to Access.
- Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356-365.
- Wambua, J. M., & Nzulwa, J. (2016). Factors Affecting Sales Team Motivation in Multi-National Pharmaceuticals in Kenya: A Case Study of AstraZeneca, East Africa.
- Wambugu, P. W. (2015). An analysis of the effects of competitive intelligence practices on the performance of pharmaceutical companies in Nairobi. *International Academic Journal of Human Resource and Business Administration*, 1(4), 1-13.
- Wang, Y., & Hazen, B. T. (2016). Consumer product knowledge and intention to purchase remanufactured products. *International Journal of Production Economics*, 181, 460-469.

- Wanjiku, J. N., & Maina, S. (2025). Nexus between integrated marketing communication strategies and market performance of registered pharmaceutical companies in Nairobi City County, Kenya. *The Strategic Journal of Business & Change Management*, 12(2), 1471–1487.
- Wickens, C. D., Hollands, J. G., Banbury, S., & Parasuraman, R. (2015). *Engineering psychology & human performance*. Psychology Press.
- World Health Organization Regional Office for Africa. (2024). *Framework for strengthening local production of medicines, vaccines and other health technologies in the WHO African Region 2025–2035: Report of the Secretariat*. WHO Regional Office for Africa.
- World Health Organization. (2024). *A case study on the ecosystem for local production of pharmaceuticals, vaccines and biologicals: The Kenya context*. World Health Organization.
- Yan, R. (2010). Cooperative advertising, pricing strategy and firm performance in the e-marketing age. *Journal of the Academy of Marketing Science*, 38(4), 510-519.
- Yin, R. K. (2013). Validity and generalization in future case study evaluations. *Evaluation*, 19(3), 321-332.

APPENDICES

APPENDIX I: QUESTIONNAIRE

STRATEGIC CAPABILITIES AND PERFORMANCE OF PHARMACEUTICAL COMPANIES IN KENYA

Below is a set of several questions on the effect of strategic capabilities on the performance of pharmaceutical companies in Kenya. You're required to provide accurate responses to the best of your knowledge to facilitate competition of an academic study. The information you provide will be treated with strict confidentiality and used only for academic purposes. The answers you provide together with that of other respondents will help the researcher complete the academic paper. Please do not indicate your identity (Name or any other initial anywhere on the questionnaire).

PART A: BACKGROUND INFORMATION

1. Name of organization

.....

2. Organization type

Manufacturing [☐]

Distribution [☐]

3. Gender Male [☐] Female [☐]

4. How long have you worked with the organization?

Less than one year [☐] 1-3 years [☐]

4-7 years [☐] 8-10 years [☐]

Above 10 years [☐]

5. What is your job title?

CEO [☐] General Manager [☐]

6. For how long have you worked in that position in the organization?

Less than one year [] 1-3 years []

4-7 years [] Above 7 years []

7. Years in operation

Less than one year [] 1-3 years []

4-6 years [] 6-9 years []

Above 10 years []

8. Market supplies network

One country [] 2-3 countries []

4-6 countries [] 6-9 countries []

More than 10 countries []

PART B: DYNAMIC CAPABILITY

9. Below are several statements on dynamic capability as a determinant of performance. Dynamic capability refers to the organization's ability to sense changes in the operating environment, seize emerging opportunities, and reconfigure resources and processes in response to changing market, technological, regulatory and competitive conditions. Kindly indicate with a tick (✓) the extent to which each of the following dynamic capability statement influence the market performance in your pharmaceutical company. Use a scale of 1-5

Where

1= no extent, 2= Little extent, 3= Moderate extent, 4= Great extent and 5= Very great extent.

STATEMENT

1 2 3 4 5

The organization regularly scans the business environment to identify changes that may affect its operations.

The organization has clear systems for identifying new market, technological and regulatory opportunities.

The organization responds quickly to changes in customer needs and market conditions.

The organization adjusts its strategies when there are changes in competition, regulation or industry trends.

The organization reallocates resources when new opportunities or threats emerge.

The organization regularly improves its internal processes to respond to changes in the pharmaceutical industry.

The organization encourages departments to share information that supports timely decision-making.

The organization adapts its products, services or operations to meet changing regulatory and market requirements.

The organization is able to reconfigure its structures, routines and capabilities to sustain performance in a changing environment.

10. In your opinion, kindly explain how dynamic capability has influenced performance in your organization

PART C: MARKETING CAPABILITY

11. These are statements on marketing capability as a determinant of performance.

Kindly indicate with a tick (✓) the extent to which each of these statements applies in your pharmaceutical company. Use a scale of 1-5

Where 1= no extent, 2= little extent, 3= moderate extent, 4= great extent and 5= Very great extent.

STATEMENT	1	2	3	4	5
The quality effect is higher than the price effect of our goods					
The firm has employed modern techniques of marketing					
The organization has set apart enough budget and a marketing team to specialize in marketing the firms' product					
The orders from the customers are fulfilled adequately					
The firm has popularized and capitalized the brands of the products assets					
The marketing personnel are in a position to do sales integration, that is, creating awareness to the potential customers and converting them to real customers					
The firm customers are recorded in a database for regular updates of new products and benefits accrued to the products					
The firm products are unique in branding and quality and therefore the firm has a competitive advantage					
The sales team shares the product benefits with the market to increase sales					
The firm has extended the product sales nationally and internationally					

PART D: TECHNOLOGICAL CAPABILITIES

12. Below are several statements on determining factor of technological capability on performance. Kindly indicate with a tick (✓) the extent to which each of these statements applies in your pharmaceutical company. Use a scale of 1-5

Where 1= no extent, 2= little extent, 3= moderate extent, 4= great extent and 5= Very great extent.

STATEMENT**1 2 3 4 5**

The organization workforce is well informed of the technological improvements in pharmaceutical industry.

The organization has a well-developed R&D team as department in the organization

Our budget allocation to the R&D development has been increasing overtime

We have been extending various partnerships and patents with research institutions to develop new technologies

The organization undertakes conscious products design upgrade

The organization is able to adjust to changes in production processes

The organization has implemented innovation effective strategies

Technology available in the organization enhancement has improved the processing, productivity and realization of the firms' vision and objectives through adjustment with the process changes.

Resources of technology available have given the expected output in productivity of the firm

The firm is able to bring up product performance feature upgrade

PART D: HUMAN RESOURCE CAPABILITY

13. Below are several statements on determining factor of human resource capability on performance. Kindly indicate with a tick (✓) the extent to which each of these statements applies in your pharmaceutical company. Use a scale of 1-5

Where 1= no extent, 2= little extent, 3= moderate extent, 4= great extent and 5= Very great extent.

STATEMENT	1	2	3	4	5
The organization has a competitive hiring process of needed skills					
Our employee turnover is low					
The firm offers competitive salaries to our employees					
The organization has employees with all needed skills within the firm					
The firm relies on internal and external trainers					
The employee pool in the firm has a diverse expertise					
The organization rewards the most innovative employees as a strategy to stimulate more developments					
The firm is capable of replacing the absent employees to maintain its productivity					
Information sharing amongst the employees is encouraged through proper communication among the employees					

PART F: FIRMS CHARACTERISTICS

14. These are statements on firms' characteristics as a determinant of performance, rate how applicable these statements are to your pharmaceutical company. Kindly indicate with a tick (✓) the extent to which each of these statements applies in your pharmaceutical company. Use a scale of 1-5
- Where** 1= no extent, 2= little extent, 3= moderate extent, 4= great extent and 5= Very great extent.

STATEMENT	1	2	3	4	5
The firm has adequate specialized resources for its operations					
The firm has enough finances to fund, maintain and expand its operations					
The number of extension branches of products have increased					

Technology in the firm has helped it to be competitively advantaged

All the staff uphold the firm objectives, values and ethics as outlined

Appropriate tasks have been well outlined for each employee through staff development programs

The firm employs the top down approach in decision making and change management

The top management structure is dynamic to promote and sustain profitability and growth of firms

The firm structures the management department-wise.

PART G: PERFORMANCE OF PHARMACEUTICAL COMPANIES

15. These are statements on firms' characteristics as a determinant of performance, rate how applicable these statements are to your pharmaceutical company. Kindly indicate with a tick (✓) the extent to which each of these statements applies in your pharmaceutical company. Use a scale of 1-5

Where 1= no extent, 2= little extent, 3= moderate extent, 4= great extent and 5= Very great extent

Statement	1	2	3	4	5
The return on investment in the firm have been increasing yearly					
The annual sales of the company have been increasing					
The company market extension has grown overtime					
The firm sets aside part of the budget to invest on boosting the performance such as advertising					
The company prioritizes the customer feedback and address					

them promptly

The number of negative feedbacks to the firms have been minimized

The company have focused on ensuring internal customer satisfaction

Year	2015	2016	2017	2018	2019
Return on investments					
Market share					
Total sales					
Number of complaints					

APPENDIX II: LIST OF PHARMACEUTICAL COMPANIES IN KENYA

1. AB pharmaceuticals
2. Abacus pharma
3. Accord Healthcare
4. Ace pharmaceuticals
5. Acoton Limited
6. Adakim 2010 Limited
7. Addis Pharma limited
8. Alfajiri Pharmaceuticals limited
9. Allied corporation pharmacy limited
10. Alicton limited
11. Alpha Medical Supplies
12. Alterati Limited
13. Amex Healthcare limited
14. Ansell Pharmaceuticals limited
15. Apollo Pharmaceuticals limited
16. Arabella pharmacy limited
17. Arachis pharmaceuticals limited
18. Arap Tosha pharmacy
19. Arlanda Pharmacy
20. Atom pharmaceuticals
21. Aum Pharmaceuticals
22. Aushn life Kenya limited
23. Avena pharma limited
24. Axxcess beyond
25. Axmed east Africa limited
26. B-Braun medical Kenya
27. Bakpharm limited
28. Barichem pharmaceuticals
29. Belea Pharmacy limited

30. Belmont Pharmaceuticals ltd
31. Biogen pharmaplex limited
32. Biogex pharma limited
33. Bioniche Limited
34. Biophase Limited
35. Biotech Pharma limited
36. Biovail health limited
37. Brighton pharmaceuticals limited
38. Bungoma chemists limited
39. Bwosi investments
40. Caav care pharmaceuticals
41. Calvary Hope pharmaceuticals limited
42. Capsiken pharmaceutical limited
43. care Chemists limited
44. Catalyst pharmaceuticals limited
45. CDPL africa healthcare
46. Cellpharm healthcare
47. Centrale humanitare pharmaceutique
48. Cepa pharmaceuticals limited
49. Chebu pharmaceuticals
50. Citi link Pharma limited
51. Claxomedica limited
52. Clinica limited
53. Cloriti pharmaceuticals
54. Cold solutions limited
55. Coxi Africa limited
56. Curespan pharma limited
57. Daima chemists limited
58. Danmed pharmaceuticals
59. Dannes Pharmacy limited
60. Dawaflo pharma limited
61. Dawasafe limited

62. Deepak Kumar tyagi Healthcare
63. Dentmed ltd
64. Dhow health limited
65. Diadems pharmacy limited
66. Diamond life sciences limited
67. Diarim Enterprises limited
68. Disnil Biotech afrocare limited
69. Dolopharma limited
70. Dovey pharma
71. Dua Healthcare limited
72. Duolife pharmaceuticals limited
73. Eastleigh pharmaceuticals
74. Eden biotech healthcare limited
75. Egypro Pharma (k) limited
76. Eldobase limited
77. Eldohosp Pharmaceuticals
78. Elmart Pharma limited
79. Energia Pharma limited
80. Epicare Pharmaceuticals
81. Essaar (K) Ltd
82. Europa Healthcare
83. Eurox Pharmaceuticals limited
84. Eva Biopharma limited
85. Field Technology limited
86. Forleys Limited
87. Forza life Sciences
88. Fourmeds pharmaceutical limited
89. Frebs Pharmaceuticals
90. Galaxy Pharmaceuticals
91. GDM health solutions
92. Genedrift kenya limited
93. Generics Africa limited

- 94. Geokim Supplies
- 95. Get well Health Limited
- 96. Glad Healthcare limited
- 97. Gladhill Pharmaceuticals limited
- 98. Global Net medical limited
- 99. Globe Pharmacy
- 100. GMC pharmaceuticals limited
- 101. Godlive healthcare limited
- 102. Gold tree Pharmaceuticals limited
- 103. Goldwin Pharmaceuticals
- 104. Goodlife pharmacy limited
- 105. Goodman Agencies
- 106. Goodmed Healthcare limited
- 107. Greenlife Pharma limited
- 108. Guardian Chemists
- 109. Guardian Healthcare limited
- 110. Haripharm pharmarmacy limited
- 111. Harleys Limited
- 112. Hazella limited
- 113. Healplus pharma limited
- 114. Health classique limited
- 115. Healthcourt limited
- 116. Healthpower pharmaceuticals limited
- 117. Health nature limited
- 118. Helios Pharmaceuticals
- 119. Helwan Pharmaceuticals limited
- 120. Hemlok Pharmacy
- 121. Highchem marketing limited
- 122. Highridge Pharmaceuticals Ltd
- 123. Ibrahims Pharmaceuticals limited
- 124. Imperial Managed solutions limited
- 125. Inkamed Health services

126. Inspire Pharmaceuticals limited
127. Integral Health limited
128. ION kenya limited
129. Isopharm Limited
130. Jambo Specialities limited
131. Jaychem Chemists limited
132. JFD pharma limited
133. Jocare pharmacy limited
134. Joymed Kenya limited
135. Kam Pharmacy limited
136. Kasama Limited
137. Kendor enterprises limited
138. Kenpharma Healthcare limited
139. Kensel Pharmaceuticals limited
140. Kent Pharmaceutical limited
141. Kentons limited
142. Kericon East Africa limited
143. Kinsen Pharmaceuticals limited
144. Kisao Pharmacy limited
145. KNVM medicare Africa limited
146. Korylns Therapuetics limited
147. Krishna Chemists limited
148. Kulal International
149. Laz Biotech
150. Laborex Kenya
151. Lamco Pharma limited
152. Lazor Pharmaceuticals limited
153. Legit Mediq 2007
154. Lenana Pharmaceuticals
155. Lido Pharmaceuticals limited
156. Life stream Limited
157. Lifon Pharma limited

158. Limelight Chemists limited
159. Liyana Healthcare limited
160. Lords Healthcare limited
161. Luqman Medical company limited
162. Macnaughton limited
163. Madawa pharmaceuticals limited
164. Maesio pharemaceuticals limited
165. Makadara Chemists limited
166. Makongeni Pharmacy limited
167. Makupa chemists
168. Manche Pharma limited
169. Markaz Pharmacy
170. Masaku Chemists
171. Marlin chemist limited
172. Matfid pharma limited
173. Matibabu Foundation pharmacy
174. Maua Hilltop pharmacy
175. Maxim Pharmaceuticals limited
176. Med Companion Limited
177. Medasil Surgical limited
178. Medicure Healthcare limited
179. Medfo kenya limited
180. Medforte Pharmaceuticals limited
181. Medhut Limited
182. Mediexpert distributors limited
183. Medina Pharmacy limited
184. Medina remedies Limited
185. Medinique Healthcare limited
186. Mediocaire Pharmaceuticals
187. Medionics Healthcare limited
188. Medox Pharmaceuticals limited
189. Meds and Allied services limited

190. Medscribe limited
191. Medtrack Ethicals limited
192. Mega Health sciences
193. Meta Meta Pharmaceuticals
194. Metro Pharmaceuticals limited
195. Micro labs
196. Mission for Essential drug supplies
197. Mitra pharmaceuticals
198. Modest Healthcare limited
199. Moran pharmacy limited
200. Multi choice Pharma limite
201. Mumbi house pharmaceuticals limited
202. Nagele drug mart
203. Naipharm kenya limited
204. Nairobi Enterprise
205. Nairobi Pharmaceuticals
206. National Pharmacy limited
207. Neem Pharmacy limited
208. Neer Healthcare limited
209. Nesher pharma limited
210. Netel enterprises limited
211. New vipingo pharmacy limied
212. Nextgen pharmaceuticals
213. Nickpharm limited
214. Nila Pharmaceuticals
215. Nilson pharmaceuticals
216. Njimia pharmaceuticals
217. Noor Dynamic limited
218. Northern pharmacy
219. North gate pharmaceuticals
220. Novogen supplies limited
221. NVS kenya limited

- 222. Nyobunga pharmaceuticals
- 223. Oceanic lifecare
- 224. Omaera pharmaceuticals
- 225. Omilife limited
- 226. Oncera Pharmaceuticals
- 227. Oncopharm limited
- 228. Opera Pharma limited
- 229. Origens Limited
- 230. Oshwal Health Sciences
- 231. Oximio limited
- 232. Pain past limited
- 233. Pan pharmaceuticals
- 234. Panamed Pharmaceutical company limited
- 235. Parthvinco limited
- 236. Patras pharmacy limited
- 237. Pefric E.A limited
- 238. Perspective Healthcare limited
- 239. Pharma Access africa limited
- 240. Pharma Branding limited
- 241. Pharma Pill Limited
- 242. Pharma parlour
- 243. Pharma share supplies
- 244. Pharma specialities
- 245. Pharmachoice Pharmaceuticals limited
- 246. Pharmacity Pharmaceuticals
- 247. Pharmaco Healthcare limited
- 248. Pharmadox Pharmaceuticals limited
- 249. Pharmaken limited
- 250. Pharma plus pharmaceuticals
- 251. Pharmasell limited
- 252. Pharmazon Healthcare limited
- 253. Pharmastore Healthcare limited

- 254. Pharmweb Chemists limited
- 255. Philips Healthcare services
- 256. Philips Healthcare Technologies
- 257. Philips Therapeutics limited
- 258. Philmed limited
- 259. Philton Pharmaceuticals
- 260. Pill pack Healthcare
- 261. Pilot Pharmaceuticals limited
- 262. Population services Kenya
- 263. Portal Pharmacy limited
- 264. Pradesh Pharma limited
- 265. Prayosha Healthcare limited
- 266. Promed Pharmaceuticals limited
- 267. Prodigy Healthcare Limited
- 268. Prospectus Therapeutics limited
- 269. Prunus Pharma limited
- 270. Psalms Pharmaceuticals limited
- 271. PSM pharmaceuticals limited
- 272. Pyramid Pharma limited
- 273. Qmed pharmaceuticals limited
- 274. Querencia pharma limited
- 275. Quest Pharmaceuticals limited
- 276. Raa Limited
- 277. Radbone-clark
- 278. Radiance Pharmaceuticals limited
- 279. Rangechem Pharmaceuticals limited
- 280. Reckit Benkiser
- 281. Reddy's Pharma limited
- 282. Redefine Healthcare limited
- 283. Regenera Pharma limited
- 284. Resourcethica Kenya limited
- 285. Richland Royal Pharmacy

286. Ripples Pharmaceuticals limited
287. Roche Kenya limited
288. Rohto Mentholatum kenya limited
289. S& M pharmaceuticals limited
290. Sai care Enterprise limited
291. Sai pharmaceuticals limited
292. Salama Pharnmaceuticals limited
293. Salix Pharma limited
294. Salman Pharmaceuticals limited
295. Sano Pharmaceuticals limited
296. Scorp Meditechltd
297. Senten Healthcare limited
298. Shaj Pharma limited
299. Shalina Healthcare limited
300. Shell Pharmaceuticals
301. Shibli Pharmaceuticals limited
302. Shifachem Ltd
303. Shivling Pharmaceuticals
304. Shree Ram Overseas limited
305. Signature Healthcare limited
306. Signature Pharmaceuticals limited
307. Sileto Pharmaceuticals
308. Simba Pharmaceuticals ltd
309. Sinopharm East Africa limited
310. Sisi Pharmaceuticals limited
311. Sizwe Pharmaceuticals limited
312. Skintech Pharma limited
313. Sky Healthcare Ltd
314. Sofben Pharmaceuticals limited
315. Stamed Healthcare Limited
316. Star Biotech limited
317. Statim Pharmaceuticals

- 318. Stockpoint Pharma Wholesalers
- 319. Suluhu Pharmaceuticals
- 320. Sunpar Pharmaceuticals
- 321. Surgik Pharmaceuticals
- 322. Surgilinks limited
- 323. Surgipharm limited
- 324. Swisscan pharma limited
- 325. Symbio Healthcare limited
- 326. Syner-med Pharmaceuticals limited
- 327. Tahacare perk limited
- 328. Tanad Healthcare limited
- 329. Theralife Pharma limited
- 330. Tiba Healthcare limited
- 331. Tokuyoshi Pharmaceuticals limited
- 332. Towa Pharma limited
- 333. Toybah Healthcare limited
- 334. Transchem Pharmaceuticals limited
- 335. Transcurie Ltd
- 336. Transwide Pharmaceuticals limited
- 337. Tridem Pharma
- 338. Trimurti Healthcare limited
- 339. Twokay Chemicals
- 340. Tytana pharmaceuticals
- 341. Umoja Pharmaceuticals
- 342. United Pharma
- 343. Upesi Pharmacy
- 344. Uzuri Exporter limited
- 345. Veteran Pharmaceuticals limited
- 346. Victoria Healthcare limited
- 347. Viemark Kirijo Pharmacy
- 348. Vihiga Drug mart
- 349. Vincare limited

- 350. W&S pharmaceutical limited
- 351. Waliz Pharmacy Limited
- 352. Warehouse Pharmaceuticals limited
- 353. Wega Healthcare
- 354. Wessex Pharmaceuticals
- 355. West point Pharmacy limited
- 356. Wilkitson Pharmaceuticals
- 357. Win Pharma limited
- 358. Wynberg pharmaceuticals
- 359. Xenopia investment limited
- 360. Xtramed limited
- 361. Yaniv limited
- 362. Yassir Pharmaceuticals
- 363. Z.E.D Pharmaceuticals
- 364. Zadchem healthcare limited
- 365. Zawadi healthcare
- 366. Zemela chemists limited
- 367. Zengenta pharmaceuticals limited
- 368. Zike Corporation limited
- 369. Zinaya pharmaceuticals
- 370. Zuvan limited
- 371. Cosmos Limited
- 372. Laboratory & Allied Ltd
- 373. Dawa Limited
- 374. Glaxo smithkilne Kenya Limited
- 375. Biodcal Laboratorics Ltd
- 376. Sanofi-Aventis Kenya Ltd
- 377. Universal Corporation Limited
- 378. Regal Pharmaceuticals Limited
- 379. Novartis Pharma Ag
- 380. Pfizer Laboratories Limited、
- 381. Macleods Pharmaceuticals Limited

- 382. Auro bindo Pharma Limited
- 383. Denk Pharma Gmbh & Co Kg
- 384. Glenmark Pharmaceutical Limited
- 385. Indoco Remedies Limited
- 386. Bayer Pharma Ag
- 387. Msn Laboratories Private Limited
- 388. Sandoz Gmbh, Kundl
- 389. Sphinx Pharmaceuticals Ltd
- 390. Astrazeneca Uk Limited
- 391. Psm Pharmaceuticals Ltd
- 392. Fresenius Kabi
- 393. Innocia Lifesciences Pvt. Ltd
- 394. Ipca Laboratories Limited
- 395. Acino Pharma Ag
- 396. Julphar Pharmaceutical Industries
- 397. Boehringer Ingelheim International Gmbh
- 398. Ind-Swift Limited
- 399. Dinlas Pharma Epz Limited
- 400. Alkem Laboratories
- 401. Theon Pharmaceuticals Ltd
- 402. Umedica Laboratories Pvt Ltd
- 403. Modi-Mundipharma Pvt. Ltd.
- 404. Mankind Pharma Ltd
- 405. Centaur Pharmaceuticals Pvt. Ltd
- 406. Swiss Parenterals (Pvt.) Ltd
- 407. Adcock Ingram Ltd
- 408. Abbott Laboratories S.A (Pty) Ltd
- 409. Pharma Life Science Limited
- 410. Abacus Pharma (A) Limited
- 411. Comed Chemicals Limited
- 412. Comet Healthcare Limited
- 413. Globela Pharma Pvt. Ltd

- 414. Benmed Pharmaceuticals Limited
- 415. Oaknet Healthcare Pvt

APPENDIX III: NACOSTI permit

 REPUBLIC OF KENYA Ref No: 273431	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION Date of Issue: 14/October/2022
RESEARCH LICENSE	
	
This is to Certify that Mr., Meshack Owira Okok of Jomo Kenyatta University of Agriculture and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Baringo, Bomet, Bungoma, Busia, Elgeyo-Marakwet, Embu, Garissa, Homa Bay, Isiolo, Kajiado, Kakamega, Kericho, Kilimanjaro, Kisumu, Kitui, Kwale, Laikipia, Lamu, Machakos, Makueni, Mandera, Marsabit, Meru, Migori, Mombasa, Muranga, Nairobi, Nakuru, Nandi, Narok, Nyamira, Nyandarua, Nyeri, Samburu, Siaya, Taita-Taveta, Trans Nzoia, Turkana, Uasin Gishu, Vihiga, Wajir, Westpoko on the topic: STRATEGIC CAPABILITIES AND PERFORMANCE OF PHARMACEUTICAL COMPANIES IN KENYA for the period ending : 14/October/2023.	
License No: NACOSTI/P/22/20837	
273431	
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	