

**STRATEGIC MANAGEMENT PRACTICES ON PERFORMANCE OF WATER
SERVICE PROVIDERS IN THE LOWER-EASTERN KENYA**

MIRITI ERASTUS MWONGERA

**A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of PhD
Degree in Business Administration and Management of Kenya Methodist University**

OCTOBER , 2025

DECLARATION

I declare that this thesis is my original work and has not been presented for a degree or any other award in any other University.

Miriti Erastus Mwongera

REG. No. BUS-4-2250-1/2012

Signature: _____ Date_____

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

Signature: _____ Date_____

Prof. Peter Kihara

Department of Business Administration

Kenya Methodist University

Signature: _____ Date_____

Dr. Joshua Miluwi

Department of International Relations

Kenya Methodist University

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DEDICATION

I dedicate this thesis first and foremost to my wife Charity for her steadfast support and endurance at all stages of the study. Secondly, this work is dedicated to my two unforgettable mentors, the late Mr. Cassian Juma Nyanjwa a former colleague and immediate boss at the Central Bank of Kenya and Mr. Justus Kiruja M'Ichirai my primary school English teacher both of who spotted intellectual capabilities in me at different stages in my life. It is their honest encouragement that stimulated my resolve to pursue academic excellence.

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ABSTRACT

This study focused on performance of water service providers in the Lower Eastern Kenya. Performance is gauged on the organisation's ability to efficient supply adequate, quality, reliable and affordable water while the organisation maintains positive financial and market growth. Water service providers in Kenya face significant performance challenges characterized by Non-Revenue Water exceeding 45% as recorded by The World Bank Group (2021) and Water Services Regulatory Board (2022). Further, water coverage at 60% is significantly below international benchmarks. Lower-Eastern Kenya suffers up to 92% domestic water scarcity despite reasonable availability of water sources. This suggests that factors beyond water resource availability contribute to the dismal organizational performance. The study therefore examined the four dimensions of strategic management practices - environmental scanning, strategy formulation, strategy implementation and strategy control - and tested the moderating role of water demand. Resource-Based View of the firm was the underpinning theory supported by the Dynamic Capabilities Theory, Agency Theory and the Stakeholder Theory. The study was a correlational survey anchored on positivist philosophy employing mixed methods. The computed sample size using Yamane's formula was 263 from a target population of ten organisations with a sampling frame of 758 employees. Data was collected using self-administered questionnaires and analysis resulted in all four Null Hypotheses being rejected. Thus, the four independent variables acting singly or collectively had positive and significant influence on organizational performance. This confirmed that strategic management practices significantly influences organisational performance. Specifically, environmental scanning followed by strategy control had the highest impact on organizational performance. However, in the combined model, water demand acted significantly as an independent variable but not as a moderator. The study recommends that water organisations should embrace strategic management practices, invest on their capabilities, improve efficiency and empower their employees for better performance.

TABLE OF CONTENTS

DECLARATION.....	ii
COPYRIGHT.....	iii
DEDICATION.....	iv
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vi
LIST OF TABLES	x
LIST OF FIGURES	xii
ACRONYMS AND ABBREVIATIONS.....	xiii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.2 Statement of the Problem.....	16
1.3 Research Objectives.....	18
1.4 Hypotheses of the Study	18
1.5 Significance of the Study	19
1.6 Scope of the Study.....	21
1.7 Limitations of the Study	22
1.8 Delimitations of the Study	24
1.9 Assumptions of the Study	25
1.10 Operational Definitions of Terms.....	27
CHAPTER TWO	30
LITERATURE REVIEW	30
2.1 Introduction.....	30
2.2 Theoretical Review.....	30
2.2 Theoretical Framework.....	48
2.3 Empirical Review	61
2.4 Conceptualization	71
CHAPTER THREE.....	76
RESEARCH METHODOLOGY	76
3.1 Introduction.....	76
3.2 Research Philosophy	76
3.3 Research Design	77
3.4 Target Population	79
3.5 Sampling Size and Sampling Procedure	81

3.6 Instrumentation.....	87
3.7 Data Collection Procedures.....	87
3.8 Methods of Data Analysis.....	92
3.9 Diagnostic Tests.....	94
3.10 Hypotheses Testing	98
3.11 Ethical Consideration	100
CHAPTER FOUR.....	102
DATA ANALYSIS AND PRESENTATION OF RESULTS	102
4.1 Introduction.....	102
4.2 Response Rate.....	102
4.3 Demographic Characteristics.....	104
4.4 Reliability Analysis	112
4.5 Descriptive Analysis.....	115
4.6 Diagnostic Tests.....	140
4.7 Bivariate Correlation Analysis	160
4.8 Hypotheses Testing	162
4.9: Multiple Regression Analysis - All Variables.....	169
4.9 Moderation Analysis	172
4.11 Discussions	177
CHAPTER FIVE	185
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	185
5.1 Introduction.....	185
5.2 Summary of Findings	185
5.2 Conclusions.....	192
5.4 Recommendations	199
5.5 Suggestions for Further Research	202
REFERENCES.....	204
APPENDICES	210
Appendix A : Questionnaire.....	210
Appendix B: Introduction letter to respondents	216
Appendix C: Introduction letter to Embu Water & Sanitation Company Ltd	217
Appendix D: Introduction Letter to Kitui Water & Sanitation Company Ltd	218
Appendix E: Introduction Letter to Mbooni Water & Sanitation Company Ltd	219
Appendix F: Introduction Letter to The County Secretary, Head of County Public Service, Makueni.	220

Appendix G: KeMU Letter of Clearance to Undertake Research.....	221
Appendix H: NACOSTI Research Permit.....	222
Appendix I: The World’s Water Supply.....	223
Appendix J : Breakdown of global freshwater.....	224
Appendix K : Comparative Usage of Water.....	225
Appendix L : Summary of Published Annual Financial Reports for Water Service Providers in the Lower-Eastern Counties of Kenya.....	226

LIST OF TABLES

Table 3.1	The Sampling Frame	81
Table 3.2	Proportionate Sample Size from each Water Service Provider ...	84
Table 3.3	Five Null Hypotheses Tested.....	98
Table 3.4	Operational Measurement of Variables.....,,.....	99
Table 4.1	Response Rate.....	102
Table 4.2	Gender of the Respondents.....	104
Table 4.3	Current Position Held by Staff at their Organisation.....	108
Table 4.4	Awareness that the Organization Collects Data to Make New Strategies.....	110
Table 4.5	Managers Consulted Stakeholders when Reviewing and Making New Strategies.....	111
Table 4.6	Employee Involvement in Data Gathering and Strategy Formulation.....	112
Table 4.7	Results of Reliability Analysis of all Variables	113
Table 4.8	Descriptive Statistics on Environmental Scanning.....	117
Table 4.9	Descriptive Statistics on Strategy Formulation.....	121
Table 4.10	Descriptive Statistics on Strategy Implementation.....	124
Table 4.11	Descriptive Statistics on Strategy Control.....	128
Table 4.12	Descriptive Statistics on Water Demand (Moderator).....	132
Table 4.13	Descriptive Statistics on Performance.....	136
Table 4.14	Results of Normality Tests.....	142
Table 4.15	Variance Inflation Factor (VIF) – All Variables.....	155
Table 4.16	Durbin-Watson test-Autocorrelation	157
Table 4.17	Bivariate Linear Correlation - All Variables.....	161
Table 4.18	Bivariate Analysis - Environmental Scanning	163
Table 4.19	Bivariate Analysis – Strategy Formulation	165
Table 4.20	Bivariate Analysis – Strategy Implementation	166
Table 4.21	Bivariate Analysis – Strategy Control.....	168

Table 4.22	Multiple Regression- Model Summary.....	169
Table 4.23	Multiple Regression – Model Validity	170
Table 4.24	Multiple Regression Weights	171
Table 4.25	Moderated Multiple Regression – Model Summary.....	173
Table 4.26	Moderated Multiple Regression- Model Validity.....	175
Table 4.27	Moderated Multiple Linear Regression – All Models	176

LIST OF FIGURES

Figure 2.1:	Theoretical Framework	48
Figure 2.2	The Conceptual Framework	72
Figure 2.3:	Operational Framework.....	75
Figure 4.1	Proportionate Contribution of each Organisation to the Overall Response Rate.....	103
Figure 4.2	Age Brackets of the Respondents.....	105
Figure 4.3	Highest Level of Education of the Respondents.....	106
Figure 4.4	Years of Service.....	107
Figure 4.5	Duration the Respondents had worked in their Current Position..	109
Figure 4.6	The Q-Q Plot for Performance	145
Figure 4.7	Box Plot for Performance	146
Figure 4.8	Q-Q Plot for Environmental Scanning	146
Figure 4.9	The Box Plot for Environmental Scanning.....	147
Figure 4.10	The Q-Q Plot for Strategy Formulation.....	148
Figure 4.11	The Box Plot for Strategy Formulation	149
Figure 4.12	The Q-Q Plot for Strategy Implementation.....	150
Figure 4.13	Box Plot for Strategy Implementation.....	150
Figure 4.14	The Q-Q Plot for Strategy Control.....	151
Figure 4.15	The Box Plot for Strategy Control.....	152
Figure 4.16	Q-Q Plot for Water Demand	153
Figure 4.17	Box Plot for Water Demand	153
Figure 4.18	Results of Homoscedasticity Test	158
Figure 4.19	Test for Homoscedasticity: Scatterplot Predicted Linear Line.....	159

ACRONYMS AND ABBREVIATIONS

IT:	Information Technology
KPI:	Key Performance Indicators
NACOSTI:	National Commission for Science, Technology & Innovation
NRW:	Non-Revenue Water
OECD:	Organisation for Economic Co-operation and Development
PSP:	Private Sector Participation
ROA:	Return on Assets
ROE:	Return on Equity
SMSE:	Small and Medium Size Enterprise
UNECA:	United Nations Economic Commission for Africa
UNEP:	United Nations Environmental Programme
WASREB:	Water Services Regulatory Board established by Water Act of Kenya 2016
WBG:	World Bank Group
WHO:	World Health Organization
WSP:	Water Service Provider

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Water service providers are organisations that play the major role of facilitating effective distribution of water from its sources to the points of ultimate usage. Reliable supply of adequate, quality and affordable water for human use is therefore a key performance indicator of the effectiveness of water service providers. In Kenya particularly, the right for adequate, clean and safe water supply to every person living in the country is provided under Article 43 of the Constitution of Kenya 2010.

Adequate water provision is also cardinal because it responds directly to the sixth Sustainable Development Goal (SDG) prescribed by the United Nations. That goal is to ascertain sustainable availability of clean water and sanitation to the populace of the world. Furthermore, without adequate supply of water, the first three United Nations SDGs - eradication of poverty; achieving zero hunger and; ascertained good health and wellbeing - cannot be achieved. Accordingly, water service providers that focus on strategic activities that result in reliable provision of adequate and quality water to users are considered more effective. Effectiveness translates to excellent customer service and financial sustainability which are normally underpinned by innovativeness, creativity and productivity. These attributes are key propositions of both the Resource Based View and the Dynamic Capabilities Theory with regard to organisational performance.

Whereas water is a natural resource extremely essential for sustenance of life and the environment, when it is abundantly available, its importance is taken for granted but because its uses are not substitutable, its scarcity sparks spontaneous conflicts not only between people

but also among other living organisms. It is therefore much easier for people to notice water scarcity than to recognize its abundance. On that note, many scientists and geographers including Dalman et al. (2018) Christopherson (2009) and Christopherson and Birkeland (2018) acknowledge that, to people, water is the most immediate vital resource after air. This phenomenon is common virtually to all living organisms most of which people thrive on in diverse ways for survival and prosperity. Reliable provision of adequate and quality water is therefore critical towards fulfilment of human needs particularly for domestic and economic functions especially those driving productivity in agriculture and manufacturing. Most importantly therefore, guaranteed availability of water plays a major role in ascertaining peace and harmony among people and nature in general as envisaged in the United Nations SDGs (García Ávila et al., 2023).

Fulfilling people's demand for water is usually a major challenge noting that geographers have established that freshwater which people require is available on earth in meagre quantity constituting about 2.6% of the earth's existing water by volume and it is not evenly distributed (Miller, 2002 and Miller & Spoolman, 2020). Further, this little available water is reduced considerably through quality degradation by natural environment compounded by modern agricultural and industrial activities. This phenomenon arises because water is a super-solvent that attracts all kinds of impurities in solid and liquid forms thereby compromising potable water quality. These are some of the environmental challenges confronting water service providers in their quest to satisfy people's demand for water.

Wastage of water during distribution can further compromise performance of water service providers due to reduced quantity of water available for human use. In Kenya particularly, Non-Revenue Water (NRW) that measures operational efficiency by comparing wasted water

against water harnessed stands above 45% compared to the World Bank recommended at 20% and below (Water Services Regulatory Board [WASREB], 2022). This points at poor water resource management by water service providers in the country and there lies an opportunity for water service providers to enhance their effectiveness by minimising water wastage resulting in higher quantities of water supplied to users.

Kenya's economy is agro-based but productivity in agriculture in the country is confronted by high water supply limitations. This problem adversely impacts the Lower-Eastern Kenya resulting in a huge unexploited potential for high productivity in agriculture in both crop and animal husbandry. Low productivity in agriculture can indirectly affect other dependent sectors of the economy such manufacturing, service, health and education contributing to overall poor economic development of the country. Water service providers in Kenya can contribute immensely to the economic development country if they enhanced water provision to boost agricultural productivity.

Water demand in Kenya is not stagnant. Instead, it is rising day by day because, in addition to agriculture, Kenya is striving to become a “newly-industrialising-middle-income country” as per Kenya's Vision 2030. This economic goal together with the growing population has resulted in increased water demand in the country. In this regard, water service providers ought to align their strategies towards achieving high levels of performance in water supply in order to meet the rising water demands. This study therefore considered reliability as well as both quantitative and qualitative water supply as some of the main criteria for measuring the effectiveness or performance of water services providers in the Lower-Eastern, Kenya.

1.1.1 Global outlook of performance of water service provision

Availability of reliable, adequate and safe water for use by the population is a growing challenge globally since in most cases water demand outstrips supply. For example, twenty years ago, Sivanappan (2006) noted that water had become a scarce commodity in Tamil Nadu district of India to the extent of being seen as liquid gold. Furthermore, water demand was increasing daily for household, agricultural and industrial purposes to support the ever escalating population of India. Despite the global water scarcity being a force outside the control of water service providers, wastage due to imprudent management and poor utilisation of water resource aggravated the problem even further in most parts of the world. As such, the average water loss globally was estimated at 35% of the water harnessed and processed while the average in developing countries was around 60% (Ngueyim Nono et al., 2024). The World Bank (2022) records defined that loss in monetary terms. Accordingly, it was noted that water utilities in developing countries incurred costs of about USD 6 billion annually arising from water losses through physical means such as leakages combined with losses emanating from inefficiencies such as metering inaccuracies, and unethical conduct including pure theft and corruption by the utility employees.

Compared to many countries of the world, Israel has faced a high level of water stress (Organisation for Economic Co-operation and Development [OECD], 2023). Nevertheless, owing to prudent water management and effective distribution system, most Israeli citizens have direct water connection to the national water system despite the shrinking natural water sources and the demand pressure arising from the population growth. Furthermore, in Israel there is widespread use of irrigation systems and about half of water used for agricultural activities is freshwater which exacerbates the country's water stress level. Consequently, water

usage is highly controlled in Israel hence water provision per capita in the country is among the lowest in OECD member countries at 138 m³ per person per annum compared to 691 m³ per person in the OECD region as per year 2020 data. To confront water scarcity problem, Israel supplements its water sources by use of recycled effluent water for agriculture and therefore more than 87% of wastewater is recycled for use in agriculture.

Like Israel, Saudi Arabia is ranked among the top five countries in the world faced with severe water scarcity. It lies on the desert and does not have a single permanent river. The country is fully dependent on its seawater desalination systems, water reservoirs and groundwater sources for water supply to its population. Despite these challenges, it is recorded that 86% of the population of Saudi Arabia was effectively provided with water in 2021. This level of innovation and prudent management of water resources is uncommon in the developing countries and it leads to poor performance of water service providers in those regions.

Water sector is highly regulated globally which inhibits private sector participation in the sector. Gasson et al. (2009) observed that since the 1990s, the expansion of private entity participation in the water sector in the United States (US) had been hindered by strong political resistance. Consequently, only 8.8% of the population was served by regulated private water companies; a further 6.5% served by private water operators engaged by municipal utility owners while the rest (over 84%) was provided directly by the aging municipal workforce. The performance of water service providers in the US was therefore impacted by their operating environment as they operated in a highly regulated sector.

It was further noted that water sector in the US had focused more on addressing technological challenges associated with demand for adequate and safe drinking water to the nation's

communities and ignored other important areas including the need for an educated workforce to operate water supply systems more effectively; the need for financing the installation and maintenance of the systems; and ultimately the need to engage the customers who pay for water provision to assure them that water delivered to their homes and businesses was trusted as safe and reliable. Thus, stakeholder participation in water service sector was apparently low in the US which contributed to poor performance of water service providers in that region.

In addition to stakeholder power and regulations impacting performance of water utilities globally, other factors that affected performance of these utilities have been noted. In Italy for example, Guerrini et al. (2011) established that ownership set-up, size, the level of diversification and geographical area influenced the performance of water utilities, although at different levels of significance.

1.1.2 Regional Perspective

There has been great need for strategic management of water resources in Africa considering that most African regions suffer water stress. This observation was emphasised by Omalanga et al. (2025) who noted that most African nations experienced water scarcity and the projection by the United Nations Economic Commission for Africa (UNECA) was that the situation would be worse by 2025. Thus, meeting water demand was becoming a greater challenge in Africa. In South Africa for example, water supply was below the water scarcity threshold of 1000m³ per capita per year. Under this metrics, Kenya was comparatively at a worse position and ranked below Uganda and Tanzania. Consistent with global water statistics, South Africa on average used 52% of water for agriculture and irrigation and only 10% for domestic purposes but this varied slightly in accordance with varying demographics of the society and their activities for livelihood (Omalanga et al., 2025).

A major challenge surrounding water services in developing countries especially in Africa was lack of credible data regarding water availability and performance of water utilities (Ngueyim Nono et al., 2024). In Cameroon for example, information regarding water loss in the water distribution networks in the country was found to be scanty and disjointed. Nevertheless, based on latest estimates, the non-revenue water (NRW) in Cameroon was observed to be about 40% of the volume charged to the water system thus costing water utilities in the country about USD 61.2 million annually (Ngueyim Nono et al., 2024).

Another area of concern with regard to water management was the level of autonomy of water utilities and the influence of regulations in the water sector not only in Africa but globally. Most water service providers (water utilities) particularly in Africa were found to have little control over their operational scopes except through purchases that have to be permitted by a governmental institution (Mbuvi, 2012). In general, therefore water utilities operate within predefined licenses and jurisdictions, hence their operational scope is predetermined. In Cameroon for example, the policy on water tariff is made on considerations of geographic equalization and standard of living so as to make access of potable water to the poor much easier (Ngueyim Nono et al., 2024). Consequently, some of the inefficiencies of water service providers can be traced to the influence of policy on the operational scope which is not a fault of the water service providers.

A further observation was that from the late 1980's, there was limited opportunity for improvement of performance of water service provision in Africa due to the pertaining operational limitations, political interference and complex regulations (Ngueyim Nono et al., 2024). Consequently, urgent remedy was needed and this could only be achieved through broad

institutional reforms for increased financial autonomy and greater institutional transparency. In that endeavour, water sector reforms in Zambia in particular were spearheaded by major global funding agencies and thus policies promoting Private Sector Participation (PSP) were developed in the 1990s (Mbuvi, 2012). Whereas these policies supported the creation of private companies to offer water services, the replacement of public-owned water utilities with privately-owned providers faced strong resistance. Consequently, full implementation of privatization of water services was subsequently suspended completely due to the lack of policy support at the national level. This was another good example that there is strong resistance to participation by private sector in water services provision globally.

1.1.3 Local perspective

At the time this study was conducted and before, the economic activities in the Lower-Eastern Kenya were mainly in small scale agriculture as well as small retail services establishments at local marketplaces dealing in groceries and hardware to support domestic and institutional construction requirements. There was comparatively little manufacturing or industrial activities in the region other than for value addition of agricultural products such as milk, rice, tea coffee and, to a limited extent, cotton. Consequently, in addition to domestic use, most of the water demand in this region was for agricultural use. Qualitative and quantitative water requirements for agriculture and domestic use are fairly easy to establish by any water service provider. With regard to domestic water usage, the concern globally is on both water availability and more critically, water quality which is impacted by chemical and microbial pollutants (Botkin & Keller, 2011). Most of these pollutants affect water quality in the Lower-Eastern region of Kenya where plant agriculture requires chemical fertilisers and spays to thrive. Furthermore, sewer and waste management systems were not well developed in the region to deal with waste materials that can contaminate water. Under such an environment, rainwater would be a more

suitable source of quality water for domestic use compared to other alternative sources (Gakungu, 2013; Patil, 2006). Qualitative analysis of rainwater harvested directly from rooftop catchments made of iron sheets, clay tiles or concrete tiles in Kenya and most parts of the world was found through research to be generally within the World Health Organization established standards for sanitation including laundry, toilet flushing, bathing and other general cleaning (World Health Organization [WHO], 2020). These activities are, in any case, the main uses of water in the domestic front. In contrast, ground or surface water sources such as rivers, lakes and ponds are usually polluted due to urbanization, agricultural and industrial activities that discharge waste into the environment thereby degrading those water catchments. Nevertheless, rainwater harvesting in the Lower-Eastern part of Kenya was not popular and was in quantities worth low recognition. Rainwater was however a latent but salient strategic resource that water service providers in the region could consider in their business expansion or growth strategies to boost their performance.

The main sources of water for distribution to consumers in Lower-Eastern Kenya are rivers and water springs flowing from Mt. Kenya and Aberdare mountain forests. The natural drainage system is good in one half of the region including Embu, Tharaka-Nithi and Meru counties. There are therefore several permanent and seasonal rivers draining uninterrupted through these counties to Tana River since no large capacity dams were constructed in the tributaries of Tana River in those counties. On the other hand, Kitui, Machakos and Makueni which lie on the other side of Tana River are not well drained hence there are fewer rivers in the area and most of them are semi-permanent. All factors considered therefore, it is arguable that lack of availability of natural sources of water might not be the main contributor to low performance of water service providers in all parts of the Lower-Eastern region of Kenya. Other factors, probably inadequate

management capabilities or limited strategic management practices applied by the water utilities in the area could be the greater contributors to the performance gap.

Water service providers varied in size and structure depending on the existing legal framework in each county of the region, their geographical zones of water coverage and the type of consumers they served. For example, the Makueni County Water Act of 2020 provided for two boards to manage water services in the County - the Urban, and the Rural Water Boards. Further, the water service providers established under the Act were expected to provide water and sewerages services efficiently and economically and also undertake the related development of the infrastructure for those services using their own resources. Additionally, those service providers were permitted to contract whole or part of their functions under the Act to another private water service provider. More importantly, the County Water Service Provider was required to sign a performance agreement with the Country Government for undertaking all its functions in that area. Community Water Projects also referred to as community water service providers in Makueni County were registered by Makueni Rural Water Board as independent entities. This is consistent with the Water Act of 2016 that provides for clustering of areas of service provision to more than one water service provider to boost water supply. This web of regulations appears fairly intricate and its impact on performance of the licensed water service provider could require an in-depth assessment.

The Tharaka-Nithi County Water Services Act of 2021 also required county water services providers that are established by the County Government and licensed by the Regulating Board and lack capacity to enter into some kind of partnership agreement and work with the existing community water services providers in their respective regions of water service coverage. As at 2024, only two licensed water service providers operated in the County while all other 46 entities were community water providers working as cooperative societies or community water

projects. Further, in Tharaka-Nithi, some geographical zones were served by more than one community water services provider leading to some level of operational overlap and competition amongst those entities. Despite this competition among the entities, organisational performance with respect to water service provision to consumers remained generally below customer expectation (WASREB, 2022).

The World Bank Group (2022) undertook an evaluation of the performance of sixteen (16) selected water utilities in Africa based on a ten (10) point criteria among them, water accessibility, affordability and responsiveness. Three (3) water providers in Kenya were among those evaluated by the World Bank with regard to performance. Those were, Nairobi Water and Sewerage Company, Nyeri Water Company, and Mombasa Water and Sewerage Company. From the World Bank analysis, Nyeri Water Company performance was within the top quartile and it outperformed the other two water service providers in Kenya more so on the criteria on labour productivity (Number of personnel per 1000 water connections). The other two Kenyan water providers (Nairobi Water and Sewerage Company and Mombasa Water and Sewerage Company) were found as generally below average on most of the measurement criteria. More specifically, The World Bank Group (2022) observed that Nyeri Water Company had NRW of 24% compared to Nairobi Water and Sewerage Company with a figure of 47%.

The performance of Kenya's water sector was further evaluated by Water Services Regulatory Board (WASREB, 2022) covering the period 2020/2021. From the analysis, it was noted that the status of water coverage in Kenya during that period was at 60% of the population which was considered to be below acceptable level. Comparatively, 60% water coverage in Kenya was too low considering that The World Bank Group (2022) review indicated high coverage of

over 90% in most cities in Latin America such as Lima (91%), Panama (92%), Quito (97%) and San José (100%) among others.

Another weak area in Kenya's water sector as pointed out by WASREB was Non-Revenue Water (NRW). This is a measure of wasted water against water harnessed and it was estimated to be above 45% compared to the World Bank recommended at 20% and below. The finding was consistent with that of Mawia (2021) who reiterated that in Kenya, the average NRW was around 43% per year resulting in an annual revenue loss of Kshs 15.8 Billion or USD 120 million. This financial loss was twice that encountered in Cameroon in the same sector.

High staff cost combined with maintenance and operational cost was also considered by WASREB to be very high. Furthermore, staff cost was generally found to be very high compared to maintenance and operations cost. Nevertheless, Nyeri Water Company emerged as top performer overall garnering 179 out of 200 points based on the WASREB's evaluation criteria. Comparatively, Meru Water and Sewerage Services Company (MEWASS) which was one of the water service providers considered within the delimitation of this study was the best performer being position 7 with a score of 139 out of 200 while Mbooni in Makueni County which was another service provider covered in this study was ranked 84 out of 87 with a score of 23 out of 200 points.

Secondary data based on audited accounts that are available for public consumption and scrutiny indicate poor financial performance of water service providers in the lower Eastern Kenya. Most of these organisations did not make any profit in the last three years (2022-2024).

The reviews discussed above have documented weak areas of performance of some of the water service providers covered in this study but missed to identify the underlying reasons for the poor performance. Furthermore, this gap was also not bridged by any other subsequent research, hence a good justification emerged for a study to be undertaken on factors that influenced performance of water service providers. This study therefore endeavoured to evaluate the influence of strategic management practices on the performance of water service providers in Lower-Eastern Kenya.

1.1.4 Strategic Management Practices

Strategic management practices entail all processes that organisations undertake in their operations for sustainable effectiveness and to gain competitive advantage. These process start with environmental scanning, followed by strategy formulation, then strategy implementation and finally strategic review or strategy control. Organisations that undertake the four processes fervently are better positioned for high levels of performance. Various empirical studies including that of Nyagaki et al. (2021) have demonstrated a correlation between strategic management practices and organisational performance in various sectors. This study therefore examined the influence of strategic management practices on performance of organisations in water sector more specifically with regard to water service provision. This was considered to be a fertile area for the study considering that, organisations that dealt in godsend natural commodities such as water or minerals as their core products of trade tended to be complacent, less creative, less innovative and less strategic in the use of those resources hence their performance was usually less impressive. This view is supported by a study on value creation in the mining sector where Laiboni et al. (2022) established that most locally owned enterprises in Kenyan do not have mineral prospecting equipment hence their employees use rudimentary

tools and tacit knowledge to locate mineral deposits resulting in slow value creation for the mining enterprises.

1.1.5 Performance and its Measurement

Various writers including Ogolla (2020) observe that the definition of performance has remained fluid in many studies with few writers settling for a common definition. Nevertheless, in business, performance can be considered as a comparative (both positive and negative) measure of an organisation's financial or non-financial success. Financial success is usually measured in terms of profit realised, Return On Assets (ROA), Return On Equity (ROE) and with regard to investment, the measurement could be Pay-Back-Period (PBP), Internal Rate of Return (IRR) and so on. Measurement of non-financial success of a business enterprise are mainly in the area of growth such as that of market share, customer base, and the level of customer satisfaction or customer loyalty.

Notably, most of non-financial measurements are qualitative and yield subjective results. This view was also held by Kairu (2022) who observed that financial indicators yield objective measurements while non-financial indicators give rise to subjective data. Additionally, most financial measurements are inward-looking whereby the parameters of comparison are from within the firm taken at different time periods. Thus, most financial measurements are based on uni-dimensional quantitative longitudinal data that quickly provides a clear picture of the standing of the enterprise relative to its earlier positions in time.

There are of course other performance measurements that are based on cross-sectional data leading to comparisons of the status of an enterprise relative to that of its competitors in the industry at any one point in time. This is ultimately a measure of a firm's competitiveness. Competition among firms is inspired by limitation of resources and opportunities (Kairu, 2022).

The elements of measurement applicable in that case include the level of innovativeness, productivity and superiority of internal capabilities of the firm. These are the firm's intangible assets that, if well utilised, would give the firm a competitive advantage. Measurements of such attributes are undertaken mainly through the process of benchmarking between the enterprise and its competitors.

Balanced scorecard is a performance measurement tool that was developed by Robert Kaplan and David Norton in the early 1990's. The tool has been used extensively for measuring performance in various business sectors on the basis of both financial and non-financial aspects or attributes since it was first introduced in 1992. It is a multidimensional measuring tool grounded on four viewpoints which are - the financial; customer; internal business processes and; learning and growth perspectives. That measurement tool was considered as most suitable for this study because of its practicability in that the pertinent performance measurements provide an organisation a comprehensive and holistic picture of its performance at any given point in time. This view was echoed by Senaji and Ogolla (2017) and Njeru (2015).

1.1.6 Water Demand

People globally need affordable, reliable, adequate and quality water. However, the demand for water to satisfy these needs varies according to the economic activities and level of economic development of each region (Omalanga et al., (2025). Thus, the demand for water in urban centres is different from that of rural areas mainly in terms of convenience of supply and quantity of supply per capita. Another factor determining the level of water demand is climatic changes. Demand for irrigation water is normally higher in a dry season compared to a wet season. Demand for water is therefore a dynamic variable that is fairly difficult to predict accurately.

The main uses of water are in proportions of around 50% for agriculture, 40% for industrial and 10% for domestic purposes. The level of development of these functions determines the actual demand for water for each region. Nevertheless, water demand is seldom met due challenges of uneven distribution of global sources of water and the level of degradation that water is exposed to while in transit from source to the final point of use. Water demand therefore varies according to regions of the globe and the extent that demand is met is a good indicator of the performance of the water supply organisation in the specific region. It is in light that water demand appears to moderate strategic actions taken by water organisations and the level of performance of these organisations.

1.2 Statement of the Problem

The economy of Kenya is buttressed by agriculture and availability of adequate water contributes greatly in facilitating the exploitation of the country's agricultural potentials. The Lower-Eastern region of Kenya is endowed with high and diverse potential for agriculture in both crop and animal husbandry but this potential is sparingly exploited due to inability of water service providers to provide water for agricultural function. Agriculture in the region therefore thrives mainly on seasonal rainfall and poor water distribution since water requirements for agriculture is not the core focus of the region's water service providers.

Even though a major part of Lower-Eastern Kenya is endowed with fairly reliable fresh water sources, all areas in the region suffer indiscriminate water shortage with respect to both quantity and quality. This arises from low water coverage or distribution to the population which is a clear indicator that performance of water service providers in the region is below expectation. Information available from public sources also indicate water service providers in the region

are struggling in terms of financial performance considering that none of them declared any profit in the last two or so years

Various studies have identified high water wastage as a major challenge confronting water service provider globally but in Kenya wastage in form of Non-Revenue Water exceeds 45% which is far above the global recommended at 20% and below. Recorded wastage is worse and a major concern by most of the water service providers of this region. Further, due to limited creativity that is a common phenomenon associated with monopolistic ventures, water service providers have paid little attention to rainwater harvesting in the region although it could be a more viable and dependable water source. Lastly, existing legal frameworks that provide for many players to actively participate in water distribution and management as clusters in one area might also have impacted performance of the licensed water organisations since they are mandated to superintend those activities in the region.

From the foregoing, it is observed that, despite the Lower Eastern Kenya being endowed with potential water sources, water demand continues to exceed supply due to inefficiencies in water harnessing and distribution and limited innovation by water service providers.

While global and local reports highlight weaknesses such as high Non-Revenue Water, limited creativity, and poor strategic focus, little is known about the extent to which strategic management practices influence performance of water service providers in this region. More importantly, no empirical study has examined whether water demand moderates this relationship. This research gap necessitates the present study.

This study therefore focuses on the evaluation of the influence of strategic management practices on the performance of water service providers of Lower-Eastern Kenya and further seeks to establish whether water demand moderates that relationship.

1.3 Research Objectives

1.3.1 General Objective

The general objective of the study was to establish the influence of strategic management practices on performance of water service organisations in Lower-Eastern counties of Kenya.

1.3.2 Specific Objectives

The following were the specific objectives of the study:

- i. To determine the influence of environmental scanning on performance of water service providers in Lower Eastern Counties, Kenya.
- ii. To establish the influence of strategy formulation on performance of water service providers in Lower Eastern Counties, Kenya.
- iii. To determine the influence of strategy implementation on performance of water service providers in Lower Eastern Counties, Kenya.
- iv. To determine the influence of strategy control on performance of water service providers in Lower Eastern Counties, Kenya.
- v. To examine the moderating effect of water demand on the relationship between strategic management practices and the performance of water service providers in the Lower Eastern Counties of Kenya.

1.4 Hypotheses of the Study

The following Null Hypotheses were tested in this study:

- i. **H01:** Environmental scanning has no significant influence on the performance of water service providers in Lower Eastern Counties, Kenya.
- ii. **H02:** Strategy formulation does not significantly influence performance of water service providers in Lower Eastern Counties, Kenya.
- iii. **H03:** Strategy implementation has no significant influence on performance of water service providers in Lower Eastern Counties, Kenya.
- iv. **H04:** Strategy control has no significant influence on performance of water service providers in Lower Eastern Counties, Kenya.
- v. **H05:** Demand for water does not moderate the relationship between strategic management practices and performance of water service providers in Lower Eastern Counties, Kenya.

1.5 Significance of the Study

This study examined the influence of strategic management practices on the performance of water service providers in the Lower-Eastern, Kenya. The outcome of the study is expected to help water service providers recognise the importance of adopting strategic management practices in their processes so as to improve water delivery and ultimately contribute to the economic development of the region through enhanced agricultural productivity. This would in turn contribute towards the pursuit of the sixth Sustainable Development Goal (SDG) prescribed by the United Nations which is to ascertain sustainable availability of clean water and sanitation to the populace of the world. Furthermore, without adequate supply of water, the first three United Nations SDGs - eradication of poverty, achieving zero hunger; ascertained good health and wellbeing - cannot be achieved.

The study also aimed at addressing a research gap and expanding knowledge in research in the area of strategic management practices specifically in water services sector in Kenya. Available literature has demonstrated the value of performance evaluation on many sectors and industries in Kenya including performance of water utilities (Otieno , 2022), and performance in the education sector Mohammed and Rugami (2019) but no information on the reviewed literature appeared to address the significant relationship between application of strategic management practices and performance of water service providers in Kenya.

In terms of performance measurement tools, Ogolla (2020) identified a research gap on lack of utilisation of multidimensional organisation performance metrics. This study therefore sought to use multidimensional metrics such as those provided in the balanced scorecard (BSC) combined with most of the Key Performance Indicators (KPI) applied in performance reviews undertaken by The World Bank Group (2022) and by WASREB (2022) in water sector.

The conclusions made in the study are expected to shed light on the value of application of strategic management practices in organisations that majorly perform water service provision functions in Kenya. The findings of the study are therefore expected to stimulate water service providers in the country and beyond to institute actions that lead to higher performance. This will facilitate effective supply and utilisation of water resources for domestic and agricultural functions while at the same time spurring sustainable environmental conservation during this uncertain era of global climate change.

Available information from Kenya's county and national statutes including the Water Act 2016 indicated that water services sector is highly regulated. The national government particularly, not only in Kenya but globally, is the key stakeholder in the water sector and it is the main

driver of most regulations. In Kenya, water resources are vested in and held by the National Government and thus regulations stem from the national level while county governments manage these resources in trust for the public (The Mukueni County Water Act, 2020). The strong control of water sector by the government through the regulations was highlighted by the respondents as partly being a moderating factor on the performance of water utilities in country. It is proposed in this study that the effect of stakeholders' power and control on the performance of water service providers particularly by the prevailing legal frameworks established at both the national and county governments be evaluated. In this regard, statutes and policy makers are expected to draw from the findings and recommendations made in this research to reshape the existing legal frameworks and policies attendant to water resource management so as to facilitate improvement of performance of water service providers at domestic, institutional and national levels.

The most important stakeholders in this study are the water users or customers. The study considered the extent of water demands by water users and most importantly whether water demand moderated the influence of strategic management practices on the performance of water service providers. The findings of the study are expected to drive the interests of water service providers towards effective water resource management in order to address rising water demands in the Lower Eastern counties of Kenya.

Finally, scholars and researchers are expected to use the findings and recommendations of this research as appropriate and dependable reference material.

1.6 Scope of the Study

The scope of the study indicates the purpose, geographical coverage as well as population and sample size considered in the study together with the variables and the period within which the study was undertaken (Mbithi, 2024). This study focused specifically on the evaluation of the influence of strategic management practices moderated by demand on performance of water service providers in the Lower-Eastern Kenya. Accordingly, the study was conducted in six (6) out of the 47 counties in Kenya comprising 12.8% of national coverage by counties and 10 out of 87 (11.5%) licensed water service providers countrywide. The target population was all the ten water service provider yielding a sampling frame of 758 subjects of observation out of which 263 was scientifically computed as the sample size. Cross-sectional data was collected from the sample population in the months of February and March 2025.

The four theories that underpinned the study were - The Resource Based View (RBV) of the Firm; the Dynamic Capabilities Theory; Agency Theory (as backed up by The Stewardship Theory); and The Stakeholder Theory. Whereas, The Collective Action Theory was reviewed and considered to have some value to this study, it was dropped because resource mobilisation processes applied by community water service providers did apply to the current study's target population.

1.7 Limitations of the Study

Limitations of the study are issues that arose during the undertaking of the study that could adversely influence the findings of the study and limit the extent of generalisation of those findings to the entire population. In this study, certain limitations were anticipated and some encountered during the research process. Accordingly, the researcher instigated measures to minimise the impact of those limitations to enable the study achieve its objectives.

One of the limitations encountered in the study was at data collection stage mainly concerning validity and reliability of disclosures by the respondents. Water service sector in Kenya is highly regulated and in addition water service providers in the counties worked as agents for both counties and the national government through the water regulatory body (WASREB). On this consideration, the level of disclosures on matters that were not published for public consumption were somewhat limited. Further, during data clean-up, some measurement errors were noted as manifested by both extreme positive or negative responses. Those outliers could have arisen due to social desirability of a few respondents. Thus, as explained further in chapter three, respondents driven by social desirability might have given biased responses based on whether they considered it more socially appropriate to answer in favour of or against their organisations as opposed to responding based on their true opinions on the matter. A similar view was held by Mrongo (2024) who observed that, respondents might tend to overstate their efficiency or downplay difficulties based on their fears about how others will perceive their responses, especially in situations involving professionals.

This problem was not insignificantly serious in this study because the researcher's letter to the respondents had contained a passionate appeal for honest answers and assured the respondents of ultimate confidentiality. Additionally, during formal introduction of the researcher to the water organisations, the researcher noted that water service providers were very supportive as they were familiar with and valued research activities as it was not the first time data had been collected from most of those organisations.

Water sources and availability in most parts of Kenya changes seasonally and therefore the perception of respondents could be influenced by seasonal cycles of water availability. Cross-sectional data for this study was collected during the dry spell across all areas of the Lower-

Eastern Kenya which ensured uniformity and high level of objectivity and reliability of responses during that period. There was probable limitation as to what data would have arisen if it was collected during the wet season in one or all areas of the region. In this regard, this survey faced little reliability issues on data collected since it was a cross-sectional survey and data was collected during a short dry spell of late February to early March.

Another limitation was the extent of geographical coverage for data collection as it was constrained within the researcher's available financial and time resources. Sampling was carefully undertaken to establish optimum and reliable representation of the population under the study instead of dealing with the entire population in the region. During data collection, effort was intensified at the headquarters of the water organisations since that was where most accessible subjects of observation were concentrated. Nevertheless, there was a challenge of accessibility of all the constituents of the sample population but the proportion of the sample that was finally accessed and responded (154 out of 263) was fairly above the 50% threshold recommended by Mugenda and Mugenda (2003) as adequate for reporting purposes.

Finally, this being a cross-sectional survey meant that the outcome of the analysis would only apply more meaningfully around the period of the study or thereabouts. Thus, generalisation of the outcome might not be time impervious. Nevertheless, all the above limitations could have some impact on the degree of generalization of the findings obtained through the study on the entire population of water service providers in Kenya.

1.8 Delimitations of the Study

The study was conducted in six counties located in Lower-Eastern Kenya comprising Meru, Embu, Tharaka-Nithi, Machakos, Makueni and Kitui counties. Only ten water service providers in the region qualified to constitute the target population of the study. Six theories were

considered for the study but only four were found to be relevant. The four theories that underpinned the study were - The Resource Based View (RBV) of the Firm; the Dynamic Capabilities Theory; Agency Theory (as backed up by The Stewardship Theory); and The Stakeholder Theory. Stewardship Theory and Collective Action Theory were reviewed and considered to have some value to the study but were found not to fully support any variable in the study. Sampling was mainly non-probabilistic targeting only subjects that had relevant information for the study.

1.9 Assumptions of the Study

Assumptions are beliefs or ideas that a researcher might consider to be real without any evidence. Mugenda (2008) guides that, assumptions are events or conditions that if ignored by a researcher can adversely affect the outcome of the study. In cross-sectional surveys, data is collected at a particular point in time. Consequently, the outcome of such data analysis only confirms the prevailing situation at that point in time; an assumption that the process is not time dependent could be wrong.

The main assumption of this study was with regard to the responses to the questionnaire. The first assumption was that, since all the respondents were sampled from people working for the respective water service providers, it was expected that they were all literate and capable of understanding the questionnaire as framed without the intervention of the researcher. This assumption was accurate as the questionnaire was self-administered by all respondents themselves without the need for intervention by the researcher.

Secondly, it was assumed that the type of responses received would not be influenced by the seasonality of weather pattern at the time of data collection since weather patterns affect water

availability. Under such circumstances, the same question asked during the dry season could elicit a different answer during severe wet season such as El-Niño. Additionally, it was assumed that the prevailing social-economic status of the communities covered by this study would not change suddenly during the study. A case in mind was where un-metered piped water charged on unlimited water use per month would suddenly be metered thereby changing the tariffs. Such a sudden change would result to either a positive or negative customers' perception about the performance of a water service provider with respect to the tariffs and the level of service provided by water service provider. The factors considered in that assumption did not materialise since data was collected in the entire region within a short period during a dry spell of February and March 2025. Further there was no indication of tariff changes during that period. Thus, all respondents were in fairly stable climatic and economic environmental condition within their respective areas during data collection period.

The third assumption was that, cultural perceptions and community attitudes on water resource management would not have a bearing on the findings of the study. This was on consideration that cultural variances among communities living closely in Kenya were quite erratic. Thus, there was a possibility that a question not carefully crafted about water resource management and water usage could have varying connotations to respondents across ethnic groupings, thus eliciting an invalid or no response at all. This situation could also apply to organisational cultures within the region. The reservations contemplated in this assumption did not materialises during data collection as all the institutions demonstrated positive attitude towards data collection and research.

The final assumption was that, sampling method applied would yield a normal distribution with minimum sampling error and that all sampled individuals and institutions would be accessible,

objective, and be cooperative during data collection exercise resulting in high response rate. The concerns expressed in this assumption materialised to some extent since a number of respondents were located in remote areas far from their headquarters and they were not easily accessible to deliver their completed questionnaires. This reduced the response rate of the questionnaires and contributed to sampling error. However, the proportion of the sample that responded to the questionnaire was 69.6% as 183 questionnaires from 263 issued were returned out of which 154 were fully completed being 58.6% of the total. The effective response rate of 58.6% was significantly above the 50% threshold recommended by Mugenda and Mugenda (2003) as adequate for reporting purposes in social sciences research. Another source of error was that a few respondents appeared to have satisficing or social desirability attitudes. Thus, they appeared to have overstated or understated facts when reacting to the questionnaire thus marginally reducing the normality of data collected.

1.10 Operational Definitions of Terms

The terms expressed in this study shall have the following meaning:

Balanced Scorecard: An organizational performance measuring tool based on four perspectives which are - financial, customer, internal business processes and, learning and growth. BSC is the set of performance visual tools used to measure targets and results relating to four dimensions of the organization performance - financial; customer satisfaction; business processes; and learning and growth (Ogolla, 2020).

Community water service: Water services provided by a community association on a self-help basis (The Makueni County Water Act, 2020).

Environmental scanning: The process of gathering, analysing and interpreting information from the organisation's operating environment on factors that can impact its operations.

Performance: A comparative measure (positive or negative) of both financial and non-financial success that an organization attains through effective undertaking of tasks as measured against predetermined standards of precision, completeness, cost and timeliness (Ogolla, 2020). In the context of organisational performance, performance is simply the comparison of actual results against planned results or outputs (Gagai, 2022; Ndege et al., 2022).

Shareholder: A person, or body that owns a share in a company's stock.

Small and Medium-sized Enterprises (SMEs): By the definition of Kenya Institute for Public Policy Research and Analysis (KIPPRA), SMEs are enterprises that have less than 100 employees.

Stakeholder: A person or body that is bound to benefit, be impacted or affected by an activity or an action especially in business.

Strategy control: The process of monitoring and evaluation of the strategic plan to ensure the set organisational goals are realised.

Strategy formulation: The process of developing a plan that enables an organisation to achieve its desired long-term goal.

Strategy implementation: The process of converting a strategic plan into processes and systems that enable an organisation to achieve its long-term goal.

Strategic management practices: This is a process of steps taken in a holistic way so as to facilitate creation and realization of competitive advantage (Coulter, 2005).

Water services: The provision of water and or sewerage services for domestic, commercial, industrial, agricultural, livestock or other purpose and includes the supply of water for multiple uses (The Makueni County Water Act, 2020).

Water services provider: A company, public benefits organization or other person providing water services under and in accordance with a license issued by the Regulatory Board (Water Services Regulatory Board) for the service areas defined by the licence (The Water Act, 2016).

Water coverage: The percentage of the population conveniently receiving water from a water utility organisation .

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains the literature review linked with the study starting with the theoretical review that explores various theories which form the theoretical framework underpinning the study. Empirical review was then undertaken to support the objectives of the study and explain the variables in the study as well as identifying knowledge gaps that could be filled by this study.

2.2 Theoretical Review

A theory implanted in a research structure helps the researcher to paint a picture or provide a model of how the situation looks in its present state (Hennink et al., 2011). Theories are therefore constructions of world reality. Further, a theory is a reasoned statement backed by evidence that aids in explaining existing phenomena (Karanja, 2019). Accordingly, the four theories that are considered relevant to the current study on performance of water service organisation are - The Resource Based View (RBV) of the Firm; the Dynamic Capabilities Theory; Agency Theory (that is backed up by The Stewardship Theory); and The Stakeholder Theory. The Collective Action Theory was reviewed and found to have some value to this study but it did not strongly fit in the theoretical framework of the study. This was because resource mobilisation was not one of the objectives or a variable of the study.

2.1.1 Resource Based View (RBV) of the Firm

Resource Based View (RBV) of the firm has been discussed widely by scholars and researchers building on the work of Penrose (1959). Although there appears to be no consensus as to who

propounded this theory, Nyagaki et al. (2021) recognise that RBV is the brainchild of Penrose and so does Mbithi (2024). Many other researchers including Kamau (2020) and Njeru (2015) argue that Resource-based View of the firm is more linked to the work of Wernerfelt (1984) who postulated that a firm constitutes of accumulation of unique resources of a diverse nature that enable it to achieve competitive advantage. RBV framework was further developed by Barney (1991) as noted by Kinyua (2023) and Keroti (2022). It is noteworthy that, firms are internally heterogeneous in that they individually possess unique and diverse clusters of resources such as natural resources, physical capital, human capital, niche markets, advanced technological capability or even copy rights. It is the employment of these resources using varied strategies that makes the individual firms achieve different levels of performance (McGee et al., 2010). Nevertheless, the resources can only enable the firm to realise competitive advantage if they are valuable to the firm, they are rare and difficult to imitate and they are also non-substitutable.

A valuable resource is one that greatly enables an organisation formulate and implement its strategies most effectively so as to remain competitive (Kairu, 2022). A rare resource guarantees a firm competitiveness and success only if that resource is scarce and inimitable (Mbithi, 2024). Resources remain inimitable as long as competitors find it difficult or uneconomical to replicate them. Accordingly, the pool of unique internal utilities that the institution directs enables it to gain competitive advantage for the time being until competitors are able to counter the advantages available to the firm from those utilities. Further, competences are the resources that can enable an institution maintain the competitive advantage over a long period as long as those resources remain unique, rare and non-substitutable (Nyagaki et al. (2021). Broadly therefore, there are six characteristics that make resources become valuable. These are - competitive superiority, scarcity, inimitable, appropriability (ability for somebody to get the profit created

by the resource), durability, and substitutability (Pearce & Robinson, 2000). However, most scholars summarise these characteristics into four - valuable, rare, inimitable and non-substitutable and assign characteristics an acronym, VRIN.

A firm's resources should therefore be evaluated in terms of how valuable, scarce and difficult they are for competitors to reproduce or substitute because resources with these characteristics can earn an organisation competitive advantage (Dess et al., 2008). However, sustainable competitive advantage is elusive because competitors are bound to deliver imitations or substitutes over a time.

RBV is a very insightful framework for understanding why some competitors operating in the same environment are more profitable than others. Nevertheless, Resource-based View (RBV) of the Firm has received contradicting reactions from many researchers. One critic of RBV is Kraaijenbrink (2010) (as cited by Mbithi, 2024) who challenges RBV as a simplistic linear model that correlates firm's internal resources and its performance or competitiveness without regard to the operating environment. Other writers strongly opine that the notion of Resource-based View (RBV) of the Firm intended to make core competency concept for an organization more focused and measurable based on three types of resources (Pearce & Robinson, 2000). The first set comprises the tangible resources such as physical production facilities, raw materials, financial resources and other physical assets. The second set of resources is the intangible resources including patents, copyrights, brand name, company reputation and organizational morale and technical knowledge. The third bundle of resources comprises of organizational capabilities and special skills. Dess et al. (2008) equally categorise resources of a firm in three ways - tangible, intangible and, organisational capabilities. More specifically, tangible resources are those that can be easily identified such as physical assets, finances and

technology. Intangible resources are the tacit knowledge of employees such as experience, management skills, innovative capabilities as well as company reputation and brand name. Finally, organisational capabilities are the abilities of the firm to integrate tangible and intangible resources using organisational processes to produce superior products and/or services such as outstanding customer service. Thus the firm uses its organisational capabilities to transform inputs to superior outputs compared to its competitors. Dynamic Capabilities Theory (DCT) that emanated from RBV was considered as separate theory anchoring this study and it is discussed in more detail later in this text.

In conclusion therefore, Resource-based View (RBV) of the firm is based on the premise that firms differ fundamentally because each possess a distinctive bundle of resources such as assets, skills, capabilities, and intangible assets. Each firm then endeavours to develop its own competencies from these resources and depending on how well it develops these competencies the firm determines its level of competitive advantage in that industry (Pearce et al., 2013). This in essence is the meaning and value of Resource-based View (RBV) of the firm.

Water as a tangible resource has almost all of the VRIN characteristics – it is valuable, rare, inimitable and non-substitutable. This resource is available to all water service providers although not in equal measure. However, it is how individual firms use their capabilities in exploiting the VRIN characteristics of water that can gain them competitive advantage. Consequently, water service providers need to fully apply their strategic management capabilities in order to identify the means of exploiting the unique characteristics of water to enable them gain competitive advantage.

The first and most important characteristic of water is that, it is a unique compound in that it exists simultaneously in three dynamic states - solid, liquid and vapour. Its solid form is lighter than liquid form, hence the reason why ice floats (Botkin & Keller, 2007). It is this uniqueness that permits existence of life beneath ice and the opposite would have been catastrophic to life and would have vastly altered the biosphere. Further, water has another unique characteristic that distinguishes it from other resources in that there are no substitutes for most of its uses Miller (2002). Christopherson (2009) therefore concludes that, clean, freshwater is the most vital natural resource for human survival and thus according to Atheru et al. (2021) water is life. Water service providers can greatly benefit from this unique characteristic of water by ensuring that water is readily available to avoid a possible substitute such as soda, juices, milk or any other taking preference over water in fulfilment of human need for a drink.

Globally, availability of quality water for human use is limited as explained by many renowned geographers. Particularly, Miller (2002) and Miller and Spoolman (2020) have assessed that only a meagre 2.6% of the earth's water by volume is fresh and most of it is in ice caps, glaciers or underground making its accessibility difficult for people. Consequently, only a paltry 0.014% (14 in 100,000) of this volume of water is available for human use out of which more than a third is ground water, a half in the lakes, a substantial amount (about 7% of it) in the atmosphere only available as precipitation and the rest in rivers. Furthermore, lakes and rivers come from surface runoff water arising from precipitation that does not evaporate into the atmosphere or that does not infiltrate into the ground. Additionally, only one third of the runoff can be considered reliable runoff or a stable source of water available for use throughout the year (Miller, 2002). There are therefore many escape routes of water from sources that human beings can easily access making potable water a rare commodity. This is a major challenge facing most

water service providers. For clarity of the severity of the situation globally, Botkin and Keller (2007) have tabulated the Earth's water supply as shown in Appendix I.

Poor water resource management has negatively impacted availability of potable water that water service providers can deliver for human use. First of all, most people individually and collectively as organisations consider water as a free good and therefore, they accord little importance upon its prudent conservation and management. This observation is supported by World Resource Institute, that indicates that almost 70% of the global water used is wasted through various ways such as evaporation and leakages albeit it is technically possible to reduce this loss to as low as 15% (Miller, 2002). World Bank Group and WASREB classify this wasted water as Non-Revenue Water (NRW). Although NRW is high globally, the situation is worse in developing countries including Kenya and this has been confirmed through an empirical review by WASREB (2022).

Water is essential and valuable for several distinct human needs including drinking, domestic cleaning, agriculture, and industrial activities. However, the determinants of its demand are different for each use as well as the region of use (Sternier, 2003). Regardless of the region on the globe, the value of drinking water cannot be underestimated and it is for this reason the market price of clean quality drinking water in most urban centres in Kenya is usually higher than that of other substitutes such as soda or milk of similar quantity.

Other uses of waters are also important particularly for economic reasons. In the US just like most developed countries, agriculture is the main water consumer taking about 50% of the water supply while domestic water use is considered the least at about 10% of the total national withdraws (Botkin & Keller, 2007). This argument is consistent with the view of Miller (2002)

who documented the US Geological Survey data regarding the amount of water needed to produce a unit of some common agricultural and manufactured products as shown in Appendix K. Agricultural products comparatively consumed more water per unit of the product. As indicated before, global water demand for common human functions vary from region to region depending on the predominant physical, environmental and social circumstances. However, in most cases, the demand outstrips supply (Sternier, 2003). Locally, Kenya is categorised as a water scarce country since its annual water supplies are below the recommended 1000 m³/person. It is for this reason that internal conflict over water in Kenya are occasionally experienced among a number of neighbouring communities in every dry season. Water is therefore one key valuable, rare, inimitable and non-substitutable (VRIN) tangible resources that is available to water service providers to manage effectively and exploit the available benefits so as gain competitive advantage (Cunningham & Cunningham, 2019).

RBV of the firm is relevant to this study because, in addition to internal tangible and intangible resources that water service providers might possess, water is their main resource. Water is an essential natural resource that is valuable, qualitatively rare, inimitable, and in most cases non-substitutable (VRIN). Water service providers and administrative organizations such as the county governments in Kenya should recognise water as a key resource and endeavour to manage and utilise water effectively by employing strategic management practices. This will enable them to gain competitive advantage or experience higher level of performance over their peers. Dess et al. (2008) emphasise that resources by themselves alone do not yield competitive advantage but as themed by RBV theory, competitive advantage can only be achieved and sustained by bundling of several resources in unique combinations. This is what strategic management practices aim at achieving.

2.1.2 Dynamic Capabilities Theory (DCP)

Although it is strongly arguable that Dynamic Capabilities Theory (DCT) emanated from RBV, this theory was considered as an independent strong anchor for this study particularly with respect to the aspects of strategy formulation and strategy implementation. DCT developed by Teece and Pisano in 1997 as an offshoot of the work of Wernerfelt and Barney (1991) holds that, firms that are more endowed with capacities that are dynamic are more likely to outpace organizations with less dynamic capacity (Keroti, 2022). This view is embraced and discussed further by Mbithi (2024) emphasising that, a firm's potential for success lies in its capability to implement dynamic changes in its processes and operations consistent with DCT in response to its operating environment.

Most importantly, organisations should consciously recognise the differentiation between resources that are emphasised in RBV and capabilities that are emphasised in DCT. Firstly, organizational capabilities are knowledge-based or tacit knowledge that resides in people together with the firm's intellectual assets, or in its specialised processes and systems, and this is what represents tacit knowledge of the organisation. Capabilities are therefore purely intangible assets of an organisation. On the other hand, resources broadly mean both tangible and intangible assets whereby tangible resources are those resources that can be easily identified as they can be touched and quantified. However, intangible resources are hard to distinguish as they cannot be touched or quantified (Thomson et al., 2022). Further, intangible assets include human assets and intellectual capital such as education, experience and knowledge and intellectual property such as brands, trademarks, goodwill etc. It is noteworthy therefore that, although capabilities and resources are intertwined, capabilities are developed through resources and then the bundle of capabilities created utilise resources to help the organisation realise its objectives. Thus, a set of firm's resources is a good indicator of the capabilities that

the firm is likely to build Thompson et al. (2022) but it is not a testament of availability of capabilities in the organisation.

In practical terms, capabilities are built first then they are applied in a dynamic manner in response to the ever-changing operating environment to yield competitive advantage. Thus, holding capabilities alone does not guarantee success unless those capabilities which are intangible assets are applied consistently in response to the demands of the prevailing environment. It is therefore observed by Kihara (2016) that the weakness of RBV theory is that it only recognised the power of resource endowment and not the dynamic force of the operating environment that can impact utilisation of those resources.

In the application of strategic management practices in their processes, organisations should first identify strong and unique capabilities that they have built and currently possess and control. This entails conducting the analysis of their strengths, weaknesses, opportunities and threats (SWOT) during environment scanning phase of the strategic management processes. Once these capabilities are identified, the firm should formulate strategies that will enable engagement or application of those capabilities on their processes utilising other resources such as human, physical and financial capital to make the organisation achieve its objectives more efficiently and effectively. Further, during strategy implementation, the organisation should align its organisational structure with the unique capabilities within the organisation so as to attain high levels efficiency during execution of its processes. These capabilities and structure should be made dynamic by visionary leadership. This kind of leadership would be able to quickly detect changes in the environment through environmental scanning as well as evaluation of goals met versus targets missed. Based on these assessments, the organisation can make calculated and controlled adjustments to its operating systems. In order to be effective,

any necessary changes have to be made in a controlled and systematic manner to avoid introducing shocks in the systems that could stir the stability of people and systems affected by those changes. Successful organisations therefore ascertain that whenever changes in organisational structures are being implemented, proper communication is effected so that personnel who are the knowledge carriers are fully involved and their contribution towards the change is valued so as to ascertain that no latent potential is withheld.

Dynamic capabilities are strategic, non-ordinary capabilities that are applied by top management to earn critical success (Mbithi et al.,2024). Thus, it is a major task for an organisation to build a sustainable bundle of capabilities. First of all, dynamic capabilities take time to develop and they are also difficult to convert to actual results (Kihara, 2016). Consequently, dynamic capabilities are not easy to imitate and when it is possible to imitate, it takes time to do so. For example, creating useful knowledge through specialised training, research or work experience takes time. Furthermore, converting this knowledge into sustainable organization processes and culture requires commitment and effective high-level leadership. Good leadership and managerial capability enable organisations to create and nurture superior capabilities and institutionalise these capabilities as best practices in their organisational policies so as to deploy them as situations demand. Managerial capabilities have been fully described by Mbithi et al. (2024) as the ability of the management to harness all other resources and this reveals the capacity of that management in the running, coordinating operating the organizational activities based on a platform of coherent decision making process. Accordingly, good managerial functions are key ingredients for successful application of dynamic capabilities in an organisation.

Organisations that possess strong dynamic capabilities are strong in two key areas of performance as measured through the balanced scorecard. These areas are the learning and growth perspective as well as internal processes perspective of the balanced scorecard. Such organisations exhibit high levels of technological development and agile market responsiveness which enable them to respond quickly to customer demands and create more revenue and profitability. Since it takes time to imitate dynamic capabilities, organisations that create, possess and preserve these intangible assets enjoy fairly uninterrupted competitive advantage over their peers. This is unlike possession of other tangible resources considered in RBV such as physical capital including money, land, equipment and even qualified personnel that competitors can quickly acquire to match those of their peers whenever such a need arises.

In conclusion therefore, possessing sustainable dynamic capabilities assures organisations superior performance compared to owning superior tangible assets. This study therefore embraced dynamic capabilities theory as a reliable anchor because in addition to others physical assets that water service providers possess, dynamic capabilities play a major role in addressing challenges of water supply and demand that are influenced by both physical and economic environments that are also dynamic.

2.1.3 Agency Theory

The concepts of Agency Theory can be traced back to 1960's but more profoundly through the 1970's work of Jensen and Meckling (1976). The theory is contextualized on the divergent objectives pertinent to the relationship between owners of properties and managers in organizations. In most cases, resources are placed in the hands of agents to manage them on behalf of the owners or principals particularly because agents possess certain skills and capabilities in key areas where the principal might be limited. By statutes and common laws,

Agents are expected to apply these skills and capabilities diligently in order to manage the resources of the principal prudently, in honesty and with the best interest of the principal. Consequently, agents are expected to suppress their personal interests and avoid benefiting directly from the assigned resources of the principal. Agency Theory therefore posits that there is an inherent conflict between the principal and agent which causes the two to spend much of their time agreeing on contracts so as to minimise the conflict (Weetman, 2006). This is because both the agent and the principal apparently have competing or opportunist interests on the same organisation yet the success of the organisation would be the common goal that would benefit the two. This argument is supported by the view of Mrongo (2024) that Agency Theory focuses on the relationship between principals and agents within an organization highlighting the potential conflicts of interest arising from the divergent objectives between these agents and the principals. As a result of these competing interests between the two parties, organisations may end up in positions where full disclosure of their financial performance is not realised (Mbithi, et al., 2024).

Advocacy of Agency Theory has a number of assumptions, among them that, contracts are made at no cost and are readily enforceable by courts while in real life, this is not the case (Nyagaki, et al., 2021). A second assumption is that an agent possesses certain valuable and private information which the principal can only gain access at a cost. Thirdly, the agent is presumed to fear both work and risk hence, the agent has to be subjected to constant surveillance and rigorous monitoring in order to be productive. Accordingly, Armstrong (2009) observed that Agency Theory is a clear indicator that principals (owners and managers) have to institute methods of monitoring and controlling the activities of their agents (staff). Consequently, it becomes necessary to eliminate any operational ambiguities by setting of clear objectives and monitoring performance in order to ascertain that those objectives are realised.

Agency Theory therefore describes two bodies in any activity – the body that is dependent called the principal and the other body called the agent that is appointed by the principal to undertake and drive the tasks that the principal cannot perform effectively (Robson, 1997). To formalise the contractual arrangement between the two parties results in additional cost associated with undertaking the given tasks. First, the principal suffers various costs of monitoring and controlling the agent's assignments in accordance with the agreement. On the other hand, the agent incurs additional cost in putting extra effort to demonstrate and reassure the principal of its commitment to comply with the agreement. Cumulatively, these costs may result in decreased economy or efficiency of undertaking the given task.

Agency Theory aims at clearly expounding two problems in management of businesses that affect performance. The first one is the conflict that can arise if the goals of the principal and those of the agent are divergent (Dess et al., 2008). This is a common phenomenon as observed by Ntongai, et al. (2019) who suggested that certain organisational cultures specifically the incubator culture (that prioritises individual growth before anything else) have a negative impact on the Return On Assets (ROA). This is because, under such cultures, employees focus on their own individual interests such as high perks as opposed to the interest of the organization resulting in the decline of the profitability of the firm which negatively affects the principal's desire for growth. The second problem is that the principal may be completely helpless and greatly dependent on the agent since he or she is unable to verify what the agent is doing. This again can result in additional cost and poor performance on the side of the principal's investment and expected outcomes.

The agency concept applies not only between two independent bodies such as two corporations, but also internally within corporations where the principal is the board of directors and the

managers or employees are the agents. Thus agency problem can arise within a corporation thereby resulting in poor performance. Consequently, with regard to the second problem, differing attitudes towards risk by the principal and the agent can be costly to the principal albeit, no one among the two parties is immune to the impact of a common risk. This is exemplified in situations where for some selfish reasons, certain employees accorded higher authority such as top executives take higher investment risks than the principals or shareholders of their organisations would not be willing to absorb. This occurs mainly in an environment that is technically challenging to the principal. However, in the end, the outcome of such a risky venture would affect both parties whether positive or negatively, yet the principal did not consent to the undertaking based on the strength and clarity of information that was available to him or her.

Stewardship Theory initiated by Donaldson and Davis (1991) is considered to stem from agency theory but it takes a more positive view of agents. Thus, the theory holds the view that, managers are actually not self-seeking and on the contrary left on their own, they usually behave responsibly and dependably as they possess the essential characteristics that enhance the value and interest of the firm (Mbithi, 2024). The theory therefore, postulates that managers (who are agents) unsupervised will act as responsible stewards of the assets placed under their control by their principals. The theory further observes that there is existence of a strong relationship between satisfaction and organizational performance. The focus of this theory is about responsible management of resources by managers who are well motivated. It emphasises that good stewardship can unreservedly be attained through motivated managers although they act as agents of their organisations.

In considering the value of this theory in the current study, the question was whether water service providers have well-motivated managers who manage water resources responsibly and achieve high levels of organisational performance. As these managers worked within water organisations which were themselves the agents of the county governments with respect to water service provision, this theory was not taken as one of the main anchors of the study and instead Agency Theory took preference. However, the intrinsic value of this theory was not completely discounted noting that overall, the employees in an organisation acting as both stakeholders and agents of their organisations are important drivers of organisational performance.

The major consideration for espousing Agency Theory as one of the anchoring theories of this study is that water resources in Kenya are by statutes, state-owned, but managed in trust by various agencies around the country. For example, in Tharaka-Nithi County, water resources are managed by two licensed water providers who are in turn expected to collaborate with community water providers in their respective areas of jurisdiction in accordance with Tharaka-Nithi-County Water Services Act, (2021). This arrangement introduces three layers of agency. The first is between national and the county government; the second is between county government and the respective water service providers; and finally the third is between the water service providers and their employees who directly execute the strategies on behalf of their organisations. Similar structures are in place in Makueni County and the other four counties in the Lower-Eastern Kenya. This study was expected to reveal whether the existing legal and regulatory frameworks that guide water agencies had any potential impacts on performance of water utilities in these counties.

2.1.4 The Stakeholder Theory

Stakeholder theory was first propounded by Dr. F. Edward Freeman in 1984 and it looks at the relationships between the organisation and others within its internal and external environment (Ogolla, 2020). The theory postulates that in addition to shareholders of a firm, other parties are involved in determining the success of a firm; these are the stakeholders. The concept of stakeholders is clarified by Kinyua (2023) who notes that stakeholders are groups or individuals who would be interested in the success of the organisation or would be impacted in any way by the objectives of the organisation. According to Dess et al. (2021) stakeholders are entities that can gain from the accomplishments of an organization. They include shareholders of listed companies, employees, customers, suppliers, and the public at large.

The major difference between Shareholder Theory and Stakeholder Theory is that, Shareholder Theory is about shareholders who are those who may resolve that all objectives of a firm shall be strongly aligned to the Return on Assets (ROA) of the firm as they own the firm. This is about the growth of the firm. On the other hand, Stakeholder Theory posits that the beneficiaries of the organization include in addition to the shareholders, suppliers, customers, employees and the general public. This is about personal and collective interests. In this regard, the strategic objectives of the organization are set for the good of both the organisation and the stakeholders (Cole, 2004)

Stakeholder theory is relevant to this study because water is a natural resource and there are many stakeholders who influence availability, distribution and utilisation of this resource. In this regard, the performance of water service providers not only depends on the strategies that the organisation puts in place but also on the intervening influence or demands of stakeholders.

Stakeholders of water service organisations exist in many forms and at all levels. First is the general public that might appear passive about internal matters of the water utility and then the other stakeholders especially the government, customers, suppliers, shareholders and employees who are the very active stakeholders of the firm. Customers who benefit directly from the services offered by the organisation are key stakeholders. Most importantly, customers play a major role as they are the main financial lifeline of the organisation through payment for water supply. In return, the organisation has to provide high level of service and value to the customers to address their water demand. These are two of the four parameters that are measured using the Balanced Scorecard - financial perspective and customer perspective- to evaluate performance of the water supply organisation. Senaji and Ogolla (2017) use the term customer and stakeholder interchangeably when using Balanced Scorecard as a tool for measuring organization performance.

The relationships and collaboration between the organisation and various stakeholders contribute heavily towards the survival and success of the organisation that is exposed to aggressive business environment full of uncertainties (Ogolla, 2020). This study focused on customers who are the key stakeholders in water supply and it considered water demand by customers as the moderator of the relationship between the independent variables and the dependent variable. Stakeholder theory was therefore relevant to this study because it linked stakeholders' water demand as the moderating variable of the study and performance of water service providers.

2.1.5 The Collective Action Theory

The Collective Action Theory concerns how individuals in a group format are able to cooperate to overcome social predicaments. Over time, human beings have embraced the spirit of

cooperation created through learning to appreciate the benefit of adopting social norms and self-regulation that bring communities together for a common course. This survival tactic is not only practiced by humans but also most effectively by animals in the wilderness when hunting for food or defending one of their kind from enemy attack.

In Kenya, Collective Action Theory is applicable mostly in the rural development projects where success has been realized through the Kenya's spirit of cooperation popularly known as "*Harambee*". The cooperative movement and Chamas (table banking groups) are popular in Kenya. Muthuma (2011) has looked at this subject in great detail in the area of utilisation of social capital in Credit Cooperatives in Kenyan and concluded that, shared values and solidarity bonds are important in Credit Cooperatives economic resources.

Community water projects or community water service providers in Kenya are created through the spirit of cooperation in order for the rural populace to harness their collective action in an endeavour to get water provision in their homesteads. These community water service providers are in one way or the other recognised in water regulations and statutes such as that of Tharaka-Nithi County Water Act (2021) and those of the other county government within the delimitation of this study. For that reason, concessions are created within the regulations for community water service providers to work symbiotically with licenced county water service providers in the Lower-Eastern region of Kenya. Undoubtedly, the provisions for community water projects to working cooperatively with licensed water service providers in counties impact organisational performance of the licensed water services providers considered in the study. In spite of this observation having reasonable basis, this theory was considered to have minimum strength in anchoring organisational performance of water service providers compared to the RBV, Dynamic capabilities, Agency or Stakeholders theories. The theory also

did not appear to have enough measurable attributes that support any of the independent or the moderating variable of the study. For those reasons, the theory was dropped from further consideration in the study.

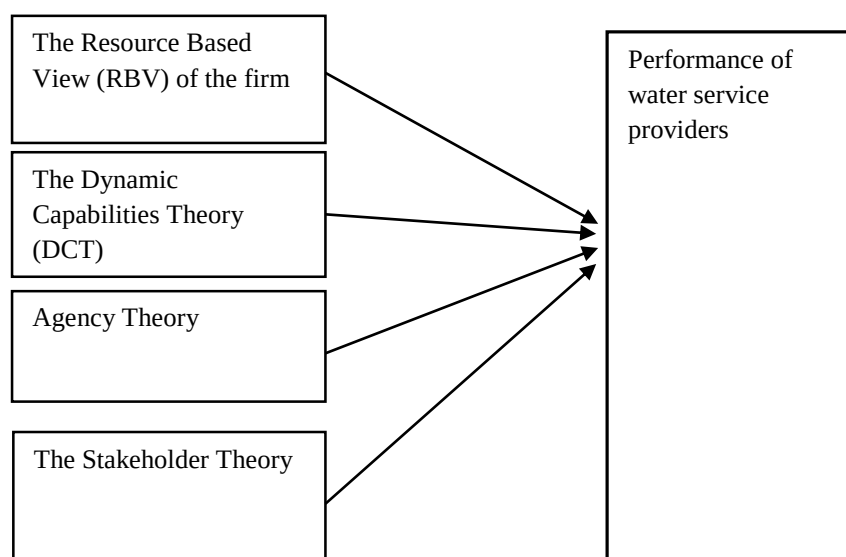
In conclusion therefore, the theories that underpinned this study were, the RBV, the DCT, the Agency and the Stakeholder theories.

2.2 Theoretical Framework

Theoretical framework guides the researcher in determining the variables that are to be measured in the study and establishing the interrelationships among those variables so as to explain existence of a phenomenon or a problem (Karanja, 2019). Based on the foregoing theories, the theoretical framework shown in Figure 2.1 shows theoretical relationship between strategic management practices and performance of water service providers.

Figure 2.1

Theoretical Framework



Source: Author 2025

The theoretical framework in Figure 2.1 is a diagrammatical proposition that resource endowment, application of dynamic capabilities, agency roles and the extent of stakeholder influence or contributions to the organisation have a bearing on organisational performance.

2.2.1 Scope of Strategic Management Practices

Broadly speaking, strategic management encompasses the analyses, decisions, and actions that an organization takes in an effort to create and sustain competitive advantage. In other words, strategic management aims at achieving sustainable performance (Dess et al., 2008). This is consistent with the definition advanced by Johnson and Scholes (1993) as quoted by Robson (1997) declaring that, strategic management is all about the decision on strategy and the organisation of how that strategy is to be actualised through strategic analyses, strategic choice and strategic implementation. Strategic management in the view of Johnson, et al. (2009) includes three elements: the first one is understanding the present strategic position of an organisation - which means environmental scanning; the second one is making strategic choices for the future - meaning strategy formulation; and finally, the third one is turning strategy into action – meaning strategy implementation.

Other scholars and experts including David and David (2017) consider strategic management as both the art and science of formulating, implementing, and evaluating cross-functional decisions that accord an organization the ability to achieve its objectives. On this consideration, David and David (2017) emphasise that in some occasions, use of pure science alone might not ascertain effective decisions are made. Consequently, in some cases especially under conditions of uncertainty or situations of limited precedent, use of intuition particularly by a few highly talented individuals can lead to decisions that deliver brilliant results. Some of these occasions are where a strategic choice has to be made from among several plausible alternatives. Use of

intuition is therefore the ‘art’ element of strategic management. David and David (2017) further observe that, strategic analysis and choice usually results in making subjective decisions based on objective or unbiased and reliable scientific information. This posits that despite objective scientific analysis being undertaken resulting in various viable strategic decisions, the selection from those strategic decisions are ostensibly subjective and the most viable strategic choice depends on the ability of the decision maker to apply intuition in arriving at the final choice. However, because only a limited number of individuals have special ability to reliably apply intuition, David and David (2017) warn organisations against over-relying on intuition alone or giving little regard to strategic analysis because doing so could lead to the organisation’s own peril.

The concept of strategic management practices has been defined by Wan, et al. (2022) as the process that examines current and impending environment then developing and implementing objectives and controlling decisions that drive the organization towards achievement of those objectives (Kinyua , 2023) This view is embraced by Enzama (2020) who summarises the four main stages that involve strategic management practices as the environmental scanning; strategy formulation; strategy implementation and finally; the control of the set strategies.

According to Coulter (2005), strategic management practices consist a process of steps taken in a holistic way so as to facilitate creation and realization of competitive advantage by an organisation. Strategic management practices therefore comprise of strategic intent, formulation, implementation, and control of strategy and the associated decisions and actions that help an organisation to have competitive advantage. Strategic intent is the way in which an organisation wishes to proceed (Robson, 1997). Strategic intent is expressed in form of strategic goals of the organisation which are, vision, mission and objectives of the entity (Dess

et al.2008). However, not all firms have mission statements that give purpose and meaning to those who work there. Thus, firms that are committed to making their missions become the centre of their search for competitive advantage must continually work towards communicating their mission and its meaning to employees (Barney, 2002). Those organisations therefore value their people above processes hence, they practice total inclusivity during their strategic management processes. This observation is emphasised by Nyagaki et al. (2021) who conclude that organisations should have well thought out strategic visions that must be clearly understood by all employees of the organisation.

Strategic management process is therefore a systematic undertaking that encompasses goal-setting, analysis, strategy formation, strategy implementation and strategy monitoring. The analysis element of strategic managements involves the analysis of strategic goals (vision, mission, and strategic objectives) as well as the analysis of the internal and external environment also referred to as environmental scanning (Dess et al.,2008). The scope of internal analysis should include the strength and relationships of the fundamental activities of the organisation's value chain i.e. operations, marketing and sales, and human resource management. Thus, internal analysis involves the evaluation of internal strengths and weaknesses (S&W) of the organisation. On the other hand, external analysis aims at identifying the opportunities and threats (O&T) that the organisation is exposed to in its operating environment. The combination of the two analyses is what is popularly referred to as the SWOT or TOWS analysis.

Some common strengths that are encountered in organisations consist of comparatively large market share, strong financial resources, innovative capability and innovative products as well as a solid customer base. On the other hand, weaknesses include lack of managerial skills, a weak distribution network, low in innovation, lack of research and development, low credit

rating or an out-dated facility (Mc Gee et al., 2010). SWOT is therefore concerned about analysis of the tangible and intangible assets of an organisation with respect to the prevailing environment. The foregoing are some of the factors affecting performance of water providers in the Lower-Eastern Kenya. Considering the importance of water for human use and the high demand for the commodity globally, the need for sustainable water management cannot be overemphasised. Sustainable water management can only be achieved effectively when water service providers employ strategic management practices in their operations.

2.2.1.1 Environmental Scanning

There are two perspectives that explain the critical value of strategic analysis or environmental scanning as a key step of strategic management practices that contributes towards competitive advantage by organisations. The first one is the Industrial Organisation (IO) model while the second is the Recourse Based View (RBV) (Krishna & Ram, 2013). IO model is outward looking and emphasises on the analysis of external environment and consider the type of industry and competitors in that industry as the key drivers to achieving competitive advantage in the industry. This model is grounded on Porter's 5-forces model. On the other hand, the RBV model is inward looking and its emphasis is concerned about the superiority of internal resources as the primary drivers of organisational performance. RBV model is supported by the arguments of Barney (1991).

The strategic management model of Johnson and Scholes (1993) which at the core consists of strategic analysis, strategic choice and strategy implementation is further and more clearly expounded by Robson (1997) particularly with regard to the strategic analysis element of the model. That clarification details the scope of analysis to cover three areas – firstly, the environmental scanning; secondly the analysis of expectations, objectives and power - culture;

and thirdly and finally, the analysis of resources of the organisation. In this connection, Robson (1997) recommended that, during the analysis of the organisation's external environment, the elements of the Porter's five-forces model that affect the organisation should be identified and be given central position among other factors that impinge the performance of an enterprise. Those well-established elements of Porter's five-forces model are: industry rivalry or competition; power of suppliers; power of customers; pressure from substitutes; and finally the ease of new entrants invading the industry. Every organisation large or small must be aware and keep in mind these forces for survival and sustainability of its performance in its industry. Considering that most of these factors if not all had a bearing on the performance of water service providers in the Lower-Eastern Kenya, environmental scanning was picked as the first independent variable of this study.

2.2.1.2 Strategy Formulation

Strategy formulation is the second variable that this study aimed at establishing how it influenced the performance of the organisations. Strategy formulation is undertaken in several levels of the organisation with the aim of placing the firm in a competitive position in a given business (Dess et al., 2008). The two main levels of strategy formulation in organisations are the business level and corporate level. The corporate level strategy is the higher level and it is concerned about the type of business that the enterprise should undertake and the spectrum of business portfolio it should build. On the other hand, business strategy formulation focuses on how the organisation should conduct its business in order to outsmart its rivals.

In that regard, water service providers in the Lower-Eastern Kenya have to engage internally at all levels within their organisational structure especially at strategic, tactical and operational

levels in order to make prudent strategic choices so as to achieve higher organisational performance.

2.2.1.3 Strategy Implementation

Strategy implementation is the action part of strategic management process and it is the third step of strategic management practices. Strategy implementation by an organisation includes instituting effective means of coordinating and integrating all activities within its own establishment and with outside partners such as suppliers, customers, and other strategic alliance partners and putting in place suitable strategic control mechanisms for those activities (Dess et al., 2008). In the field of project management, strategy implementation encompasses all those activities involving strategic planning, project management, resource allocation and risk management (Mrongo, 2024). Further, strategic planning is where strategy implementation starts and it involves setting specific-measurable-achievable-realistic and time-bound (SMART) goals that must be accomplished for the success of the project. Further, resource allocation is the part of strategy implementation process in which the resources including human, financial and physical capital required for execution of the project are allocated.

Water service providers in the Lower-Eastern region of Kenya have to put in place effective means of coordination and integration of all activities within their internal and external operational spheres and institute suitable strategic controls for those operations in order to achieve higher organisational performance.

2.2.1.4 Strategy Control

Strategy control being the last part of strategic management practices is concerned about measurement and comparison of what is achieved at all stages of strategy implementation with

what is desired according to the formulated strategy. It also involves taking necessary corrective action as well as making appropriate adjustments to the processes intended to accomplish the stated objectives.

Evaluation of organisational performance is not new in practice and in research. However, organisational performance is dynamic and varies from one industry to the other as influenced by the ever-changing physical, social, economic environments. Performance of organisations that operate in the water sector have not been spared by the dynamism of these environmental factors. First, global climatic changes over the last few decades have become a matter of concern with regard to water availability and distribution which therefore impacts performance of water service providers directly. Secondly, globalisation has influenced societal attitudes and behaviours all over the world including changing people's perceptions on the needs, uses and value of water both in urban and rural set ups. Moreover, the scope of economic activities on land use such as agriculture that is dependent on water availability has been impacted by technological changes on how these activities are undertaken. From the foregoing, it is imperative that water service providers remain alert by undertaking strategy control of their operations so as to attain good and sustainable performance responsive to the dynamic social and economic environment.

2.2.2 Evaluation and Measurement of Organisational Performance

Evaluation of organisational performance is a central component of management process in any type of corporation (Ogolla, 2020). It is therefore the duty of management to continually and closely monitor both the organisation's internal situation and outside developments that could have an impact on performance of the organisation. Anything out of the norm calls for corrective action or adjustments (Thompson and Strickland, 1998).

2.2.3 Measurement of Organisational Performance

Organisational performance is a multidimensional aspect of an organisation. Thus, compared to athletics where performance of individual athletes is easily assessed amongst the competitors in each specific activity with a single measure, organisational performance is a more complex concept to measure. Consequently, no single measure of organisational performance is completely sufficient considering that no organisational performance measurement is without limitations and therefore, multiple approaches are used in strategic analyses (Barney, 2002, 2013). In that regard, various metrics are applicable in the assessment of organisational performance whereby some performance measurements consider the financial aspect of the organisation while other metrics account for non-financial activities that the organisation undertakes. The non-financial metrics particularly measure performance with respect to efficiency, productivity, effectiveness, customer service, innovation, and growth which includes physical expansion and markets share among many others.

The common practice in business is that the key areas of performance measurement must include at least three dimensions mainly concerned with cost minimisation (profitability), customer service (satisfaction and loyalty) and growth (shareholder value and physical expansion). This notion is supported by Barney (2013) who posits that organisational performance is measured by making a comparison of what the organisation creates using its factors of production with what the owners expected to obtain through the use of these assets. The benefits that owners expected to obtain through the use of their assets is commonly referred to as the economic rent of the resource. Thus, if the performance is good, the value obtained is equal to, or more than what the owners expected. On this basis, the owners who perceive such outcomes are promising can then decide to continue making those assets available for use (by their agents) so as to continue gaining economic rent from them. On the other hand, if the value

obtained is less than expected, then the owners could decide to withdraw the assets from use by their agents because performance is below par.

Barney (2013) posited that, based on the comparison of the achieved performance vis-à-vis the owners' expectations, three scenarios can arise. The first one is 'normal performance' when achievement is exactly equal to the owner's expectation. The second one is 'below-normal performance' where the achievement is less than the expected; and the third is 'above-normal performance' where the achievement is above the expected. These conflicting interests and decisions concerning owners and agents of organisations where organisational performance is a factor are illuminated in more detail in the Agency Theory.

Fundamentally, every organisation needs to evaluate its strategies in order to assess whether it is realising its strategic objectives or not. Further, it has to measure its performance not only against its set objectives but also benchmark its performance against its peers in the industry in order to gauge its position in a competitive environment. Performance of a commercial enterprise is normally measured in terms of its profitability, market share vis-à-vis that of competition, customer satisfaction level, and growth in terms of physical expansion. It is the outcome of this measurement that helps the organisation to determine whether or not it has competitive advantage over other similar enterprises in the industry.

Water service providers, regardless of whether they are non-profit making bodies such as community water service providers or they are profit making commercial enterprises such as limited liability companies have certain expectations or objectives that they are mandated to achieve. Essentially, these entities have to undertake performance measurement against the key strategic objective(s) within their mandates so that their missions can be considered by their

stakeholders as to whether they are sustainable or otherwise. Consequently, every organisation needs to adopt certain strategic management practices that yield measurable outcomes based on which they themselves can evaluate their performance internally and also any external stakeholder can evaluate that performance. In that regard, performance measurement does not necessarily have to be based on the generic Porter's competitive advantage parameters (Cost, Differentiation and Focus) which are outward-looking but it can be based purely on the level of realisation of the achieved objectives which is inward-looking approach.

The researcher reviewed a number of studies conducted on organisational performance especially those concerning Small and Medium Size Enterprises (SMSE's) in various sectors. The studies included those on Commercial Banks Gagai (2022), water utilities, textile and leather industry Kairu (2020), education and Mohammed and Rugami (2019). However, none of the studies was found to be concerned with the correlation between the application of strategic management practices and performance of water service providers who are mainly SMSE's and particularly employing balanced scorecard as the performance measuring tool. For that matter, this study evaluated how application of strategic management practices influenced performance in the water services sector using the well-known multidimensional Balanced Scorecard as the performance measuring tool.

2.2.4 The Balanced Scorecard (BSC) as Performance Measurement Tool

Dess et al. (2008) underscored that Balanced Scorecard (BSC) is the best tool that can be used for a comprehensive and significant combination of the many matters that need to be considered when evaluating a firm's performance. Accordingly, Senaji and Ogolla (2017) demonstrated the effectiveness of BSC as a tool for measuring organisation performance in a study that tested the relationship of strategic agility on organisational performance. Balanced scorecard was

advanced and published by Kaplan and Norton in 1992 as a performance measurement tool based on both financial and non-financial aspects of an organisation. It comprises of a set of metrics that can assist managers quickly arrive at a comprehensive view of the business. BSC contains four (4) perspectives based on which performance of a firm can be comprehensively evaluated. The first one is the financial perspective of which the typical financial goals of an organisation include profitability, growth and shareholder value (Dess et al., 2008). The financial perspective of BSC uses the financial ratios as the performance metrics but what defines and determines the financial performance differ from one industry to the other. However, it is mainly the constantly increased profitability that is considered as the key measure of financial performance of firms within and between different industries (Ngure et al., 2018). Financial performance measurement is done on one hand to satisfy shareholders' need for a health-check of the enterprise considering that high profitability is a good indicator of an increased share value and growth in owner's capital. On the other hand, other stakeholders such as creditors are interested in the firm's liquidity which assures them of prompt payment. To cater for the diverse interests of stakeholders, various financial performance measurement parameters are used such as profitability, liquidity, gearing, and efficiency of the firm (Ngure et al., 2018). This view is also held by Mbithi (2024) who reiterates that indicators of a financial perspective include sales growth, profits, Return on Investment (ROI), cash flow, and cost reduction. Further, based on those parameters, stakeholders get insights into the financial perspective of the organisation and are able to easily evaluate the organization's financial performance.

The second perspective of BSC is the customer perspective which is concerned about customers' opinion or judgement of the organisation with regard to its responsiveness (timeliness and service), product quality and price. High performance under this perspective

results in customer loyalty with low customer turnover and growth in market share. Internal business process is the third perspective of BSC and it is upon this the productivity and efficiency of the organisation is measured. Internal processes with high performance result in quality products, timely delivery, low wastage, higher throughput and low production cost per unit. Enhanced internal processes can be achieved through adoption of the concept of Business Process Re-engineering (BPR) which is an injection of new ideas into business which in turn enhances business performance through reduction of process time, simplification and streamlining of operations, resulting in better products and service quality (Kipkorir et al., 2023).

The fourth and final perspective which is equally important is the learning and growth that usually concerns the agility of the organisation in responding to the dynamic environment. Creativity and innovation are capabilities acquired through learning and growth and these lead to competitive advantage of the organization over its competitors. It is therefore through learning and growth that the Dynamic Capabilities (DC) of the firm are incubated and developed. The ability to employ dynamic capabilities of the firm in a volatile business environment is one of the most effective means of enhancing the performance and competitiveness of the organisation.

To enhance the organisation's performance, Dess et al. (2008) recommend three critically important categories of intangible and tangible assets that an organisation can apply under learning and growth perspective. These are human capital comprising skills, talent and knowledge; information capital consisting of information systems and networks; and finally organisation capital which consists of its culture and leadership.

2.3 Empirical Review

Several studies that have been conducted in the fields or objectives that have close similarity to this study were skimmed to enable the researcher determine the methodologies employed, findings that emerged, and challenges that other researchers encountered in their respective studies that could be considered valuable and relevant to this study. From the literature reviewed, the researcher found that there were more studies that focused specifically on strategy implementation than any of the other variables of strategic management practices or even the combined influence of all the four variables on organizational performance.

A study by Njeru (2015) on strategic management practices and performance of small and medium sized enterprises in Kenya concluded that, contrary to the view of other studies, small and medium-sized enterprises (SMEs) actually adopted strategic management practices and that strategic management practices influenced organization performance. The study further established that, Balanced Score-Card (BSC) was a modern and reliable tool for investigating the influence of strategic management practices on performance of small and medium-sized enterprises in Kenya. This study provided relevant reference because the current study dealt with water service providers in Eastern Region of Kenya and among them were in the category of small or medium-sized enterprises. Further the study considered Balanced Score-Card (BSC) as the main tool of performance measurement.

A study by Kibet et al. (2023) that evaluated the effect of organisational innovation on performance of small and medium enterprises supermarkets in Laikipia County, Kenya contrasted the findings of Njeru (2015) noting that most SMEs operated on the basis of trial and error and therefore most of those enterprises flopped. That study further established that such failures occurred mainly during harsh economic times particularly when the owners lacked the

knowledge and strategies necessary to deal with unfamiliar market challenges. The key observation from the study was that businesses that are managed by lowly trained and underqualified operators faced a significant risk of failure because such organisations were weak on the fourth perspective of the balanced scorecard which is concerned with learning and growth. Kibet et al. (2023) therefore established that a positive correlation existed between the success of SMEs and education because lowly educated managers lacked knowledge, skills, talents and innovativeness leading to failure. With reference to that study, the current study aimed at confirming whether performance of water service providers was influenced by a wider scope of factors particularly the combined effect of strategic management practices. However, consistent with RBV and DCT theories, these practices can only convert to positive results if they are effected by well-educated employees with adequate work experience. The current study therefore aimed at discounting the possibility that organisational performance of water service providers was solely impacted by low educational levels of their employees and that the compound influence of strategic management practices influenced performance even more.

Kinyua (2023) studied the influence of strategic management practices on competitive academic performance among secondary schools in Kenya and concluded that strategic management practices can lead to high level of performance but only when there is unbridled commitment and stability of tenure at top level management of an organisation. The key lesson from this study was that strategic management practices supported by stable leadership led to higher organisational performance. The study focused on the performance in the education sector in Kenya while the current study focused on the water sector in Lower-Eastern Kenya.

Another study in the area of strategic management practices was by Kipkemoi (2022) titled, Strategic management practices and academic performance in public secondary schools in

Belgut Sub-County, Kericho County, Kenya. This study was also in the education sector in Kenya and two of the four objectives of the study that were found to be relevant to the current study were to; establish the influence of stakeholder participation and; to examine the influence of performance evaluation on academic performance. Consistent with the current study, the study also employed a descriptive survey design targeting a population of all 37 public secondary schools in Belgut Sub County. The researcher obtained a Cronbach's Alpha value of 0.6 and espoused this as confirmation of acceptable reliability of the testing instruments, which were self-administered questionnaires. The current study however, directly considered strategy control as one of the key variable while stakeholder participation was considered as a measurable operational aspect under environmental scanning and strategy formulation objectives.

At United States International University - Africa, Mutiso (2022) undertook a study on influence of strategic managerial practices on competitive advantage at Family Bank in Kenya. Unlike in strategic management practices that focus on processes in organisations, this study focused on processes in the functional units within an organisation specifically, strategic human resource managerial practices, strategic financial managerial practices and strategic marketing managerial practices. The study followed descriptive correlational research design and applied census as the sampling technique whereby all 146 employees working at the headquarters of Family Bank in Nairobi County were adopted as the subjects of observation. The conclusion of the study was that strategic managerial practices in the three internal functions of the Bank influenced the Bank's competitiveness. This study, followed similar methodology as those of strategic management practices but it narrowed to practices within internal functions of a single organisation and not the industry. As the theoretical and operational frameworks that guided

that study were not outlined, it was difficult to comprehend how competitiveness was measured since this was based only on opinions of the bank employees.

Further reviews based on each aspect of strategic management practices that constitute the independent variables of this study and giving due regard to findings already established by other scholars are summarised below.

2.3.1 Environmental Scanning and Performance

Environmental scanning concerns the finding out internally and externally what is known and more importantly what is unknown that could impact positively or negatively the status and objectives of an organisation. This can be done effectively by undertaking an assessment of the stock of strengths, weaknesses, opportunities and threats (SWOT) pertinent to the organisation. In that regard, involving all stakeholders expands the probability of finding hidden opportunities that could be of strategic value to the organization. Further, inclusivity creates trust, loyalty and confidence among employees which are immeasurable intangible assets of the firm.

Shaban (2021) undertook a study on strategic management practices and performance of National Government Constituency Development Funded (NGCDF) projects in Taveta Constituency, Kenya. One of the specific objectives of that study was to evaluate the impact of environmental analysis on the performance of National Government Constituency Development Funded Projects in Taveta Constituency in Kenya. This was a descriptive research that was anchored on four theories – Balanced Score Card Theory; The Resource-Based View Theory; Dynamic Capability Theory, and; McKinsey 7S Framework Theory. Primary data was collected using questionnaires issued to 102 respondents after which the data was analysed through descriptive and inferential statistics. Reliability of the testing instrument was confirmed

using Cronbach's alpha measurement. The study concluded that an organization that adopts strategic management practices has a higher chance of success compared to that which does not employ the strategic management practices. Further, environmental analysis had great significant effect on performance of NGCDF Projects in Taveta Constituency followed by strategy implementation, strategy evaluation and strategy formulation. The researcher therefore strongly recommended that, policy makers and strategists working in NGCDF Projects in Taveta Constituency should put more emphasis on environmental analysis when making strategic management decisions.

The current study contrasted the foregoing study by Shaban (2021) with regard to the application of Balanced Score-Card (BSC). Whereas the earlier study considered BSC as the anchoring theory for the study, the current study considered the BSC purely as a strategic management tool upon which performance measurements are founded. Nevertheless, the two studies concurred on the application of The Resource-Based View Theory and the Dynamic Capability Theory as key anchoring theories.

2.3.2 Strategy Formulation and Performance

A few studies specifically on the relationship between strategy formulation and organisational performance were identified. Those reviewed included that of Maina (2020) on the influence of strategy formulation on performance of state corporations in Kenya. Similar to the case of the current study, environmental scanning was considered as one of the four independent variables of that study. The study was underpinned by four theories two of them which were consistent to the current study were the Dynamic Capabilities Theory and the other Resource Based Theory. That study adopted survey design where a sample of 128 managers was picked from a target population of managers of 187 State Corporations. Questionnaires were deployed to

collect primary data that was analysed using descriptive statistical method. Overall, the results of analysis revealed that environmental scanning had the highest positive influence on performance followed by leadership. Consequently, the study concluded that environmental scanning and leadership should be given more weight when formulating strategies.

2.3.3 Strategy Implementation and Performance

Ntombura (2020) conducted a study on the Influence of strategy implementation on the performance of private universities in Kenya. This study was a cross-sectional survey and using descriptive design the study targeted private chartered universities in Nairobi County as the units of analysis from where the sampling frame comprising 308 staff members was established; that resulted in a computed sample size of 92 subjects of observation.

The general objective of this study was to find the influence of strategy implementation on the performance of private universities in Kenya with specific focus on the Michael Porter's generic competitive strategies being – cost leadership, differential and focus - and added product development as the fourth independent variable influencing performance of those universities. The study was anchored on Resource-Based View Theory and McKinsey 7S Framework Theory. Unlike for the current study where the data collection instrument was self-administered questionnaires, data for this study was obtained through online google form (online questionnaire).

The study revealed a mixed range of outcomes, from intermediate to strong relationship between strategy implementation and performance of that category of universities in Kenya. Thus, strategy implementation has value in organisational performance.

A study was conducted by Kihara (2016) to establishing the influence of strategy implementation on the performance of manufacturing SMEs moderated by age and size of the firm. This was a mixed methods research that borrowed from both qualitative and quantitative methodologies of data collection and analysis. The study adopted Dynamic Capabilities View of the firm as the anchoring theory. Random and non-random sampling was undertaken at two levels to design the sample after which data was collected from a sample of 115 firms drawn from the total population of 593 registered SMEs in Kenya using a self-administered questionnaire. This study concluded that strategy implementation positively and significantly influenced performance of the manufacturing SMEs. It was recommended in that study that organisations should pay close attention to their technology requirements in order to attain higher levels of performance.

The current study followed a similar pattern to the forgoing study in terms of methodology and size of organisations that were reviewed except that the two studies were conducted in different industries whereby the current study is in services while the previous one was in manufacturing sector.

The study by Mrongo (2024) was on physical infrastructural developments (Roads) and it sought to determine if corporate governance plays a moderating role in the relationship between strategy implementation and road projects outcomes. Two of the four theories that anchored that study and are also considered in the current study are Agency Theory and the Resource-Based Theory. Consistent with the current study, that study adopted a mixed-methods approach guided by pragmatism philosophy while the current study is guided by positivist philosophical viewpoint. That study operated with a sample size of 208 respondents comprising of high level professionals and executives drawn from 140 development road projects under Kenya Rural

Roads Authority (KeRRA). Data for the study were obtained using both questionnaires and interview schedules whereas for the current study data was collected using a combinations of structured and unstructured self-administered questionnaires. The findings of the study emphasized among others the need for integration of technology more effectively, optimization of resource allocation, and enhanced stakeholder engagement for better performance. The current study considered the three performance drivers recommended in that study being - technology integration, resource optimization and stakeholder engagement for better performance.

2.3.4 Strategy Control and Performance

Evaluation of organisational performance is a central component of management process in any type of corporation (Ogolla, 2020). Thus, it is the duty of management to continually and closely monitor both the organisation's internal situation and outside developments that could have an impact on performance of the organisation. During strategy control, anything out of the norm demands for corrective action or adjustments . However, the success of strategy control is highly dependent on how well the organisation has facilitated information flow and sharing of feedback among its departments. Thus, to ensure success, all employees must be involved during execution of this stage since they are the ones who are in the best position to identify performance gaps and propose necessary changes that can be put in place as part of corrective action or adjustments (Enzema, 2020). As opined by Nyagaki (2021), organisations particularly profitmaking institutions should evaluate their strategic management plans regularly in order to monitor their consistency with the organisational goals and enable them set their performance and standards that need to be met.

With regard to strategy control specifically, a study titled, Strategic Control and Competitive Academic Performance in Selected Secondary Schools in Meru, Embu, Tharaka-Nithi, Kitui and Machakos Counties in Kenya was conducted by Mohammed and Rugami (2019). This was a descriptive, correlation research with the sole objective of investigating the influence of strategy control in competitive academic performance of secondary schools. Data was gathered using questionnaires and the study confirmed that strategy control practice significantly influenced competitive academic performance. The current study however considered the combined influence of strategic management practices on organisational performance focusing on water sector and control was one of the variables.

2.3.5 Water Demand as Moderator of the Relationship between Strategic Management Practices and Performance

Unlike for many commodities, demand for water is usually stable and predictable. In economic terms therefore, demand for water is normally inelastic. This is mainly because water is not substitutable for most of its uses hence people are usually willing to pay more for water demanded if there is scarcity of the commodity and conversely people will not exceed their normal requirements for water if the price for the commodity is lowered. Demand for water varies in three dimensions determined by the environmental conditions and socio-economy activities in the specific region of the world. These dimensions are quantity, quality and reliability. It is on consideration of those dimensions that water demand becomes variable. Meeting people's demand for water under those parameters is therefore the determinant of the level of performance of water service providers in the specific regions of the world.

This study considered demand for water as a moderating variable between strategic management practices and performance of water service providers. Few studies were identified

where demand was considered as a moderating variable of performance and among those studies is that of Boon-itt and Wong (2011). This study was titled - The moderating effects of technological and demand uncertainties on the relationship between supply chain integration and customer delivery performance. This was a survey where 151 respondents in the Thai automotive industry answered a questionnaire. In summary, the key finding of that study was that technological and demand uncertainties moderated the relationships between supplier integration and customer delivery performance. That study contrasts the current one contextually with respect to demand. In the current study demand is considered to be fairly predictable but supply is not; for the earlier study demand was considered to be uncertain. Consequently, to address demand in the current study, a push system would be appropriate while for the past study pull system would be more effective.

Kerubo et al. (2025) conducted a study on demand management and performance of food and beverage manufacturing firms in Kenya on consideration that food and beverage supply chain is impacted by among other factors, demand variability, products perishability, and distribution channel challenges. This was a descriptive mixed methods research with a target population of 217 food and beverage manufacturing firms. Sampling design targeted logistics and procurement managers resulting in a sample size of 208 respondents that was computed using Yamane's formula. Structured and unstructured questionnaires were applied for data gathering after which data was analysed using descriptive statistics techniques. The findings of the study showed that demand management significantly influences the performance of food and beverage manufacturing enterprises. Comparatively, the methodology of that study was consistent with that of the current study. However, that study treated demand as an independent variable while customer response played the role of the moderating variable with respect to performance of the enterprises in food manufacturing industry. In contrast, the current study

considered demand as a moderating variable with respect to organisational performance driven by strategic management practices in water service industry. Either way, demand management plays a major role in determination of organisational performance in most industries.

The researcher considered all the foregoing insights as significantly relevant and useful to the current study. First and foremost, majority of the water service providers in the region under investigation especially the community water service providers (projects) which indirectly play a role in this study fell in the category of SMEs mostly managed by local semi-educated and semi-skilled managers. Further, considering that application of strategic management practices was found to contribute positively towards competitive advantage of firms in various sectors, this provided the researcher the motivation to establish if the same applied to water service providers since no past study focusing in that area was identified. Finally, since the licensed water service providers in the region of the current study were mandated through legislation to work symbiotically with the community water service providers, then the success of the licensed water service providers was expected to spur positive influence to the community water service providers and ultimately enhance the economic activities in the region of the study.

2.4 Conceptualization

Conceptual framework is basically the diagrammatic representation or a map representing the concepts that the researcher intends to clarify in the research. It exhibits how the researcher's concepts potentially interrelate with each other (Hennink et al., 2011). More specifically, a conceptual framework is a reasoned deduction of the interrelationship between variables in a research. In summary, conceptual framework is a diagram that provides due focus on the study by displaying the variables that are being investigated and how these variables, in the meantime,

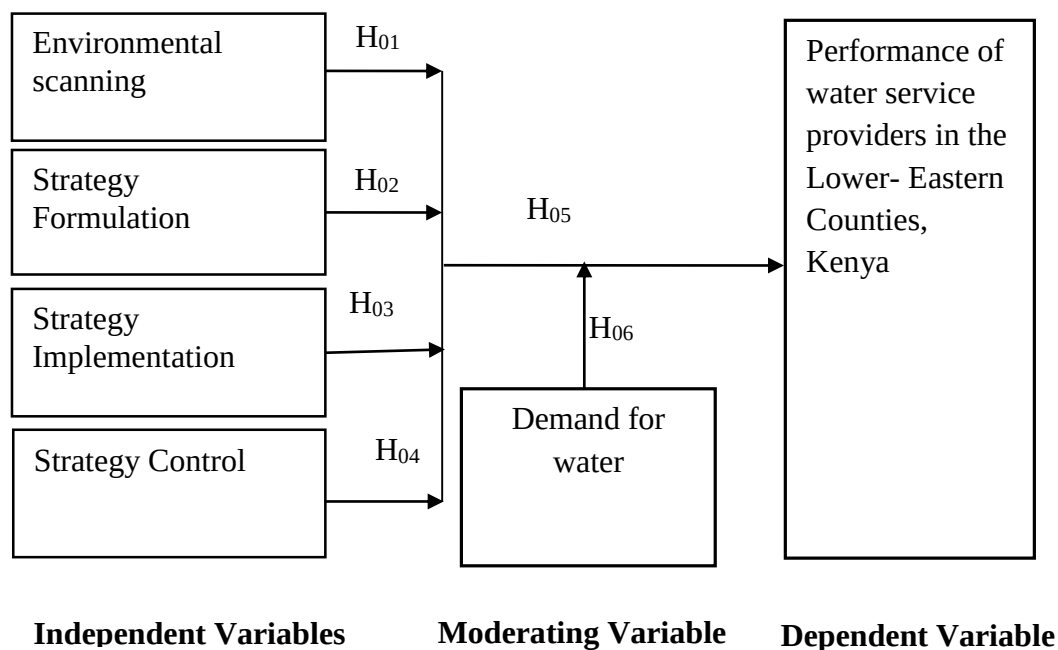
are perceived to interrelate subject to conclusion of the investigation after which the concepts can be confirmed as being realistic or otherwise.

2.4.1 The Conceptual Framework

Figure 2.2 shows the conceptual framework of this study. It exhibits the researcher's perceived relationships between independent variables (placed on the left hand side) and the dependent variable (placed on the right hand side) and indicates the possible factors (placed at the bottom) that can have moderating effect on the influence of the independent variables on the dependent variable.

Figure 2.2

The Conceptual Framework



Source: Author (2025)

The four independent variables of the study as shown in the conceptual framework were environmental scanning; strategy formulation; strategy implementation; and strategy control. These independent variables constitute the strategic management practices that the researcher

perceived as having statistically significant influence on the performance of water service providers. Further, performance of water service providers was the dependent or responding variable of the study. These variables were clearly linked to the four theories that underpinned the study which were: The Resource Based view of the Firm; the Dynamic Capabilities Theory; the Agency theory; and finally Stakeholders Theory.

During environmental scanning, organisations benefit from the concepts of the Resource Based View Theory as they endeavour to identify through SWOT analysis the resources that would buttress their strengths against their competitors. Dynamic Capabilities Theory comes into play during strategy implementation since capabilities are acquired through the use of resources while at the same time they (capabilities) are employed to create superior products and services that place the organisation in a more competitive position in a dynamic business environment. Agency theory supports both strategy formulation and implementation as it is through agents that most strategies in waters services sector are implemented. Stakeholder theory plays a role in both environmental scanning and strategy evaluation. It is at environmental scanning stage where stakeholder analysis is undertaken so as to establish the impact or influence of stakeholders on organisational performance. Further, it is during strategy control where it is important to evaluate customer satisfaction as they are the key stakeholders of water service providers. As noted by Okongo (2024), strategic control involves the comparison of achieved performance to the set goal and making necessary adjustments.

Water demand, was the moderating variable of the study. Water sources are unevenly distributed globally and therefore water service providers have to confront this challenge to be able to meet people's demand for reliable, adequate and quality water. Demand for water globally is in the proportions of around 50% for agriculture, 40% for industrial and 10 % for

domestic uses but those proportions vary according to the economic activities and level of economic development of each region (Omalanga et al., 2025).

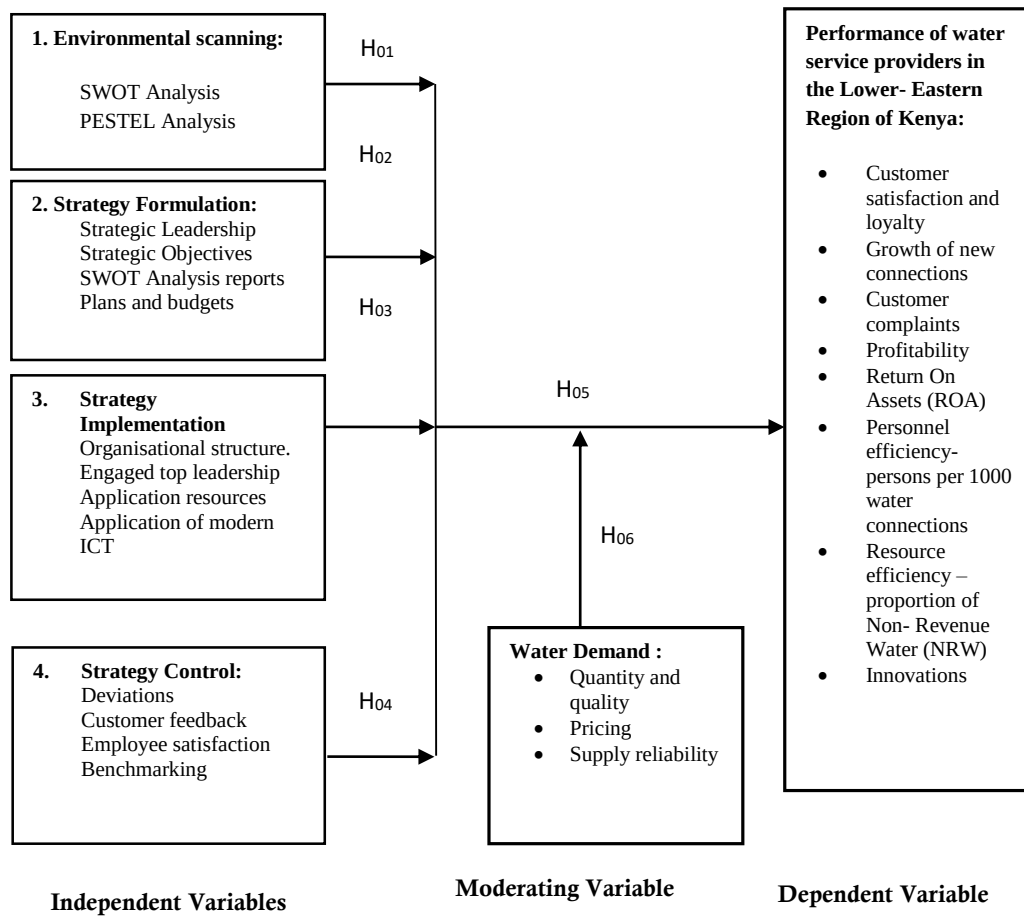
Organisational performance was the responding variable of the study. For this study, performance was measured in terms of both financial and non-financial parameters based on the Balanced Score Card (BSC) as the tool containing the perspectives that determine performance. Under these perspectives, four areas were measured to gauge performance – financial success, customers service, effectiveness of internal processes, and finally learning and growth of the organisation.

2.4.2 Operationalization

Operationalization is the process of dissecting variables into measurable elements that can be measured empirically and quantitatively. This means determining a measurable, quantifiable, and valid index for each variable and finding a way to manipulate the variable to a more measurable level. The data collection tools mainly the questionnaires were designed based on these measurable factors or detailed variables. For that reason, both the independent and dependent variables of the study were broken down further into finer measurable variables as shown in Figure 2.3:

Figure 2.3

Operational Framework



Source: Author (2025)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the methodology that was adopted in the study. Positivist philosophy that was adopted in the study is explained as well as the research design, description of the target population, sampling procedures, data collection instruments and methods of data collection.

3.2 Research Philosophy

Research philosophy is the viewpoint or assumptions of what and how the researcher intends to evaluate or confirm in undertaking the study (Creswell & Creswell, 2018). A research philosophy should be supported by philosophical worldview - the basic set of beliefs guiding the action. There are four philosophical worldviews - positivist also known as post-positivist, constructivist, transformative and pragmatic.

Of the four worldviews, this research adopted the positivist approach that posits that reality exists (Kairu, 2022) and can be measured objectively by separating the subjective and personal attitude and biasness of the observer from that which is being observed. Other researchers including Muriuki (2023) have equally explained the benefits of adopting positivistic philosophy in research. Most importantly, positivistic approach is grounded on the view that real life problems can be measured rationally through the researcher's mindful focus, observation and scrutiny with the researcher's personal values dissociated from the situation.

Positivists (or post-positivists) hold a deterministic view (Creswell & Creswell, 2018). A researcher holding a positivistic view of a phenomenon will therefore seek to identify the causes and their impact on the effects or outcomes. This means finding how independent variables

individually or collectively influence the dependent variable. Further, positivist's view is also reductionist since it aims at reducing or compressing broader ideas into a small and distinct set of variables that can yield hypotheses and research questions that have to be tested or answered. In the process, a positivist develops new knowledge through objective observations of the behaviour of individuals and careful numeric measurement of observations in order to reveal the reality that exists out there in the world.

By adopting a positivist view or philosophy in this research, it was presumed that certain independent variables influenced the performance of water service providers which was the dependent variable of the study. As positivist view is deterministic, there was need to determine through an empirical process how those presumed causes influenced the effects or outcomes. Accordingly, this was a correlational study to determine the existence of interrelationships between the independent and the dependent variables (Kumar, 2011) through testing of the stated hypotheses. It should be noted that correlation does not measure similarity between variables but it measures the degree of association among the variables (Mugenda, 2008). Various advantages of correlation research method are cited by Mugenda and Mugenda (2003). First, it permits the researcher to analyse interrelationships between a large number of variables. Secondly, the method allows the researcher to analyse how each variable singly or in combination affect a particular phenomenon.

3.3 Research Design

Research design is the general approach which contains all features of the research and the steps that the researcher would take throughout the research process including the general layout of the research together with the data collection and analysis methods that the researcher will apply (Kinyua , 2023). This view is consistent with that of Creswell and Creswell (2022) who opines

that research design is the plan or proposal to undertake a research and that it comprises a combination of philosophy, strategies of inquiry and specific methods or procedures that will be applied to translate the approach into practice. Further, Creswell (2022) views research designs as types of inquiry approaches that provide specific direction for procedures to be used in the research design within qualitative, quantitative and mixed methods.

The strategy used in this research was primarily a descriptive survey approach in that the elements of the research were studied as they were without manipulation or treatment. Mugenda and Mugenda (2003) explain that a descriptive research aims at determining and reporting the way things currently are; such things include behaviour, attitudes and characteristics. Further, a survey is a quantitative research design that uses questionnaires applied on a sample to measure characteristics of the population with statistical precision (Kinyua, 2023). This is consistent with the view of Cresswell and Creswell (2022) who observe that a survey research provides a quantitative or numeric description of the characteristics of a population in terms of the trends, attitudes, and opinions by studying a sample of that population through cross-sectional or longitudinal data collection and analysis. Adoption of this strategy in the study therefore entailed: formulating objectives of the study, selecting a sample, collecting data from the sample using survey method, and finally, analysing the data in order to report the findings.

With regard to methodology, the research was a mixed-methods research that blended quantitative data collection using closed-ended questionnaires and qualitative data using open-ended questionnaires. The questionnaires were issued to the respondents as one set and the respondents reacted to both closed-ended and open-ended questions together. Nevertheless, the research was more inclined towards quantitative method hence data collection instruments was more broadly tailored towards collecting numerical data that would upon statistical analysis establish the relationship among the stated variables. Use of mixed-methods was justified in this study because qualitative and quantitative approaches are not mutually exclusive or

dichotomies but represent different points on the continuum whereby the mixed approach sits somewhere in between. Further, qualitative and quantitative approaches in a mixed methods research supplement each thereby reinforcing the findings and the conclusions of the study.

In terms of data collection process, this was cross-sectional survey where data was collected from ten organisations in one industry at one given point in time using a combination of structured and unstructured questionnaires. Mugenda (2008) guides that, cross-sectional studies help researchers to confirm whether there were significant relationships among variables at a given point in time and not necessarily to determine cause and effect relationships among the variables. Moreover, majority of academic research for undergraduate and post graduate students are mainly cross-sectional surveys because data is deliberately and continuously collected within a period of one to six months (Kinyua, 2023). Time-series or longitudinal data that is collected from one organisation for a prolonged period of time is not practical in short academic programmes. For this study, data was collected within two months from February to March 2025.

3.4 Target Population

In research, the term population means the entire set of relevant units of analysis (Nachmias & Nachmias, 2015). Further a population is considered as all items in field of enquiry also referred to as the universe (Kothari & Garg, 2014). Mugenda and Mugenda (2003) guide further that a population should consist of the entire group of individuals or objects that have a common observable characteristic. Muriuki (2023) summarises the definition of target population as the segmented area that contains related characteristics needed for utilisation in a study. Accordingly, in this study the population comprised of all water service providers in the Lower-Eastern Kenya that had been licensed according to Kenya's Water Act 2016. This was therefore a census since all units of analysis were included in the study. There were however in the same

region several other formal organisations commonly referred to as community water service providers or water projects. Those entities were not considered in this study because they operated at different legal frameworks from those of licensed water service providers hence they formed a different set of population. In this regard, the relevant units of analysis for the study were the ten water service providers licensed by the time this research commenced. The ten water service providers constituted the accessible population since none of them was excluded during sampling. They therefore formed the sampling frame from where samples which became the units of observation were drawn in a systematic manner as shown in Table 3.1.

Table 3.1

The Sampling Frame

	County	Name of Licensed water service provider	Staff complement (Population)	Source
1.	Meru (Urban)	Meru Water and Sewerage Services (MEWASS)	112	Primary data from the organisation
2.	Meru (Rural)	Meru County Rural Water and Sanitation Services Company Co. Ltd (MERUWASCO)	102	Primary data from the organisation
3.	Tharaka-Nithi (Urban)	Nithi Water and Sewerage Company Limited (NIWASCO)	86	Primary data
4.	Tharaka-Nithi (Rural)	Murugi-Mugumango Water Service Provider.	23	Primary data
5.	Embu	Embu Water and Sanitation Company Limited (EBWASCO)	137	WASREB
6.	Kitui	Kitui Water and Sanitation Company (KITWASCO)	113	Primary data
7.	Machakos	Machakos Water and Sewerage Company (MACHWASCO)	65	Primary data
8.	Makueni	Wote Water and Sewerage Company (WOWASCO)	31	Primary data
9.		Mbooni Water and Sewerage Company (MBONWASCO)	18	Primary data
10.		Kibwezi-Makindu Water and Sewerage Company (KIBMAWASCO)	71	WASREB
Total			758	

Source: Field Data (2025)

3.5 Sampling Size and Sampling Procedure

A sample size is the number of items selected from the population for the purpose of conducting a research more efficiently. A sample is also considered as a small group taken from the accessible population (Mugenda & Mugenda, 2003). Further, under positivist approach, subjects of the study are sampled from accessible population whereby the accessible population is the portion of the population that is practically reachable by the researcher (Mugenda, 2008). However, the sample size should neither be too large nor too small but should be optimal for

the purpose (Kothari & Garg, 2014). Where time and resources allow, taking a big sample would be most appropriate because small samples may not reproduce the dominant characteristics of the accessible population. However, since time and cost would in most cases be prohibitive to the researcher who opts to undertake a study using a very large population, there is the need to obtain samples from accessible population (Mugenda & Mugenda, 2003). Nevertheless, for the outcome of the study to be accurately generalised over the entire population, the characteristics of the sample selected should mirror that of the population hence the need to ascertain that the accessible population reflects the same characteristics as that of the target population or the universe.

The sampling process for this study begun by establishing the appropriate sample size for the study. The sample size was established in two stages. The first sampling stage was intended to be random sampling to decide which of the licensed water service providers in the region would be selected for the study. However, since the licensed water service providers in the region covered in the study were few (only 10), all the sampling units were included in the study. Thus, with regard to the units of analysis, all the ten licensed water service providers were included in the study and thus the accessible population mirrored the target population absolutely. It was therefore a census.

Fisher's formula is normally used by researchers for computing a realistic sample size out of the accessible population for cases when the population is above 10,000 subjects (Mugenda & Mugenda, 2003). The formula is $n = (Z^2 pq) / e^2$ where: "n" is the desired sample size; Z is the standard normal deviate or Z-value at the required level of confidence or significance; p is the proportion of the population that is estimated to possess the characteristics being measured; q is (1-p) which is the fraction of the population that is estimated NOT to possess the

characteristics being evaluated; and “e” or “ α ” is the statistical significance level that has been assumed as appropriate in the analysis.

Using Fisher’s formula with: e or α of 0.05 i.e. 95 % confidence level or 5% level of significance; Z of 1.96; p being 0.5 hence q is 0.5 or 50 % when the proportion of the sample in the target population that contains the characteristics of interest is unknown. When the formula is applied with combination of the values of p and q at 0.5, it would yield the highest sample size. Kothari & Garg (2014) opine that this formula yields the most conservative sample size. The sample size with a population of over 10,000 is computed as: $n = (1.96^2 \times 0.5 \times 0.5) / 0.05^2$ which yields a sample size of 384 elements. A similar consideration of sample size was adopted by Mambo (2018) and Ogolla (2020).

With a smaller population less than 10,000 subjects, as is the case for this study, the product of Fisher’s formula was applied on another formula known as the Cochran (1977) formula as proposed by Mugenda and Mugenda (2003 and advocated by Ogolla (2020). The formula is: $N_s = n (1 + n/N)$ where N_s is the desired sample size for a small sample (target population below 10,000) and n is the sample size computed using Fisher’s formula with a population of more than 10,000 subjects. Cochran (1977) formula can be simplified as $N_s = nN / (n+N)$ and when it was applied on the population of 758 subjects for this study, the sample size for the study at 0.05 significance level became:

$$N_s = (384 \times 758) / (384 + 758) = 255$$

The use of the above two-step combination of Fisher’s and Cochran’s formulae yielded almost similar results as the use of a single step Yamane’s formula as advocated by Nyagaki et al. (2021). Yamane’s formula is: $N_s = N / (1 + Ne^2)$ where N_s is the required sample size; N is total

population or universe of the study; “e” is margin of error being 0.05 i.e. 5% error. For this study using Yamane’s formula, the outcome is: $N_s = 758/(1+758 \times 0.05^2) = 758/2.8875 = 263$

Yamane’s formula was adopted to compute the appropriate sample size for this study and the resultant sample size was 263. It was against this sample size that proportionate samples were determined out of the ten sampling units as shown Table 3.2.

Table 3.2

<i>Proportionate sample size from each Water Service Provider</i>				
	County	Name of the licensed water service provider	Staff complement	Proportionate sample size as a factor of the total staff complement: $S = (p/758) \times 263$ (To the nearest whole number)
1.	Meru (Urban)	Meru Water and Sewerage Services Company Limited (MEWASS)	112	$S = (112/758) \times 263 = 39$
2.	Meru (Rural)	Meru County Rural Water and Sanitation Company Co. Ltd (MERUWASCO)	102	35
3.	Tharaka-Nithi (Urban)	Nithi Water and Sewerage Company Limited (NIWASCO)	86	29
4.	Tharaka-Nithi (Rural)	Murugi-Mugumango Water Service Provider	23	8
5.	Embu	Embu Water and Sanitation Company Limited (EBWASCO)	137	48
6.	Kitui	Kitui Water and Sanitation Company (KITWASCO)	113	39
7.	Machakos	Machakos Water and Sewerage Company (MAWASCO)	65	23
8.	Makueni	Wote Water and Sewerage Company (WOWASCO)	31	11
9.		Mbooni Water and Sewerage Company (MBONWASCO)	18	6
10.		Kibwezi-Makindu Water and Sewerage Company (KIBMAWASCO)	71	25
Total			758	263

Source: Field Data (2025)

Probabilistic sampling was not considered suitable for this study since all employees of the organisations were not equally accessible and not all of them possessed relevant information needed for the study. Stratified sampling was therefore considered more appropriate in stage one of the sampling process. Most of these organisations had the traditional pyramidal type line structure with five to seven levels of hierarchical command. For practical purposes and efficiency of the study, the structure was subdivided into three strata - the top echelon, the middle management and the operational level.

The top stratum comprised of the Managing Director, the deputy (where applicable) and the heads of various departments including Finance, Operations, Human Resources and Commercial Services. Occupants of all those positions were easily accessible as they mainly operated at the head office of each organisation. The smaller organisations had less than four officers in this stratum while the big ones had between five and eleven. Questionnaires were issued randomly to those in this stratum.

The middle stratum comprised section heads who were mostly technical staff heading or supervising various sections such as Accounts, Billing, ICT, Procurement, Engineering, Customer Care, Quality Assurance, and Human Resources. However, smaller organisation did not have all those positions occupied. Nevertheless, officers in these ranks were fairly accessible as majority worked at the head office and all of them were considered to possess valuable information relevant for this study. Questionnaires were therefore issued randomly to those in this stratum.

The lower stratum was the operational level personnel including Front Office Staff, Meter Readers, Technicians, Plumbers, Storekeepers, Plant Operators, Drivers and Messengers. This

stratum had high number of personnel undertaking similar activities and the staff were spread out across various stations of the organizations some of which were fairly remote. Thus, not all the staff in this stratum were accessible to respond to the questionnaires. Further, in this stratum, personnel such as plumbers, meter readers and front office staff such as those undertaking customer care services were considered to have more relevant information for this study compared to other subordinate staff like personnel manning the gates at various stations. It was therefore necessary to focus on employees in this stratum that constituted the most relevant elements of observation for purposes of distributing the questionnaires. This is where purposive quota sampling was applied with specific job categories considered as quotas so as to prioritise quotas that were more relevant compared to the others. The five quotas created for this purpose were Front Office Staff; Meter Readers; Maintenance; Storekeepers; Plant Operators and Drivers. It is noteworthy that smaller organisations did not have employees in all quotas hence no quota missed a questionnaire.

The sampling procedure adopted this study is justified as guided by Mugenda & Mugenda (2003). In stratified random sampling, subjects from various groups in the population are selected in such a way that they reproduce or achieve the desired representation of the target population. Further, a researcher may choose to adopt purpose sampling so as to obtain cases that have the required information with respect to the objective of the study. Purposive sampling is a non-probability sampling process where the researcher chooses the representatives of the population purposively on the basis that the selected elements will be typical of the whole (Kothari, 2014). For this study, purposive quota sampling was applied in the lowest strata of the sample where some subordinate staff such as the gate keepers were excluded on consideration that they did not possess relevant information to respond to the questionnaires. Nevertheless, care was taken to ensure the elements of observation selected from each unit of

analysis formed a good representation of the target population of the study. Overall, 263 questionnaires were issued as per sample design of the study.

3.6 Instrumentation

The instrument for data collection was a combined structured (closed-ended) questionnaire and semi-structured (open-ended) questionnaire. Using a questionnaire was considered relatively cheaper and economical compared to interview schedule (Kothari & Garg, 2014). Further, this technique minimised the level of direct contact between the researcher and the respondents and greatly eliminated any biasness that could arise through such kind of interaction. This view was supported by Cooper & Schindler (2015) who held that, questionnaires reduce bias because the researcher's opinions cannot influence the responses during data collection. Additionally, interaction between the researcher and respondents in this study was minimal because all the respondents were sampled from those working for the respective water service providers and as expected, they were all literate and capable of understanding the language and content of the questionnaire without the intervention of the researcher.

Finally, application of the questionnaire as the data collection instrument was consistent with the positivist philosophy upon which this study was founded. Positivist philosophy strongly advocates separation of the observer from that which is being observed. The open-ended questions in the questionnaire gave every respondent an opportunity to freely express his or her thoughts and provide insights in areas where the researcher might have inadvertently ignored in the closed-ended parts of the questionnaire. In that regard therefore, this research was a mixed methods study and this method was expected to improve the quality of data collected.

3.7 Data Collection Procedures

Before commencement of data collection, official consent was obtained from the Kenya Methodist University on the basis of the proposal presented for this study. Further a research license was granted by the National Commission for Science Technology and Innovation (NACOSTI). NACOSTI is a Kenya's state corporation created through an Act of Parliament Section 17(1) of the Science, Technology and Innovation Act, 2013. The role of this institution is to promote, regulate, advise and coordinate research undertakings in Kenya. Finally, the researcher obtained authorisation from the management of each water service provider that constituted the units of analysis for this study. Some of these companies required a written introduction letter and request while others allowed the process to progress after a meeting with their top management. Some of the organisations in addition required authorisation to be obtained from their county government office.

Primary data for this study was collected through an official, open and transparent process using self-administered questionnaires. The researcher benefited greatly from the gracious support of the managements of all the water service providers included in this study since they facilitated the distribution of the questionnaires through their human resource functions. Pre-testing of the instruments was conducted to examine the validity and reliability of the data collection instrument before full administration of the questionnaire for the study was undertaken.

Secondary data was collected separately so as to corroborate the opinions of the respondents with regard to the financial performance of their organisations. The researcher obtained that data from the published accounts on the websites of those organisations or from the Parliament of Kenya repository since nine out of the 10 organisations in this study were public entities which were subject to scrutiny of the Auditor General. Data from the 10th entity (Murugi-Mugumango Water Service Provider) was obtained directly from the organisation since that entity operated under the Cooperative Societies Act. The summary of financial reports for entities considered in this study is shown in Appendix L.

3.1.1 Pre-testing

Instrumentation becomes a problem when the measuring instrument is unreliable (Mugenda & Mugenda, 2003). Therefore, pre-testing the instrument purposely ensures clarity to the respondents on all items stated in the instrument. Pre-testing also ascertains that the adopted research instrument is consistent or reliable with respect to the study population. Accordingly, pre-testing was undertaken under this study to confirm that all elements of the instrument were properly framed or clearly stated and carried the same connotation to all the respondents. By definition, pre-testing is about selecting a small group from the sample population and subjecting the group to the same treatment intended for the target sample under actual field conditions (Kumar, 2011). The instrument for this study was pre-tested using 10 questionnaires issued to respondents from Meru Rural Water and Sanitation Company Ltd (MERUWASCO). This constituted 1.2% of the target population and 3.8% of the study's sample size. The pre-test sample was considered adequate as guided by Mugenda & Mugenda (2003) and cited by other researchers including Muriuki (2023) that a pre-test sample of 1% to 10% is adequate. The outcome of the pre-test reflected the behaviour of the population albeit not perfectly mainly because of sampling errors that arise from using small samples. The outcome was also to confirmed that the characteristics of the pilot group were consistent with those of the study population.

Scholars including Mugenda (2008) and Kumar (2011) have guided that, where the outcome of the pre-test deviates considerably from the expectation then certain adjustments should be made to either the testing instrument or the manner of instrument administration or in the worst case to both. Accordingly, the information obtained through pre-testing was also to be used to refine the data collection instrument for its ultimate use in the study. If for example, the pilot group

was found to be hostile or provided irrelevant information in case of open-ended questions on the questionnaires then, a fresh and wholly structured questionnaire would have become necessary. Also during pre-testing, the order, pattern, and consistency of the questions which constituted the design of the instrument were to be validated. Language barriers, ambiguities and any conflicting language with regard to the attitudes of the respondents to the instrument were to be cleared.

3.1.2 Validity of Research Instrument

Mugenda and Mugenda (2003) consider validity as the extent to which research findings obtained through data analysis truly represent the phenomenon under investigation. In this regard, a valid instrument should be able to measure all dimensions or give adequate coverage of the subject matter and provide accurate data; this is referred to as content validity (Kothari & Garg, 2014). Therefore, validity is the confirmation of the integrity or accuracy of the instrument to deliver the desired measurement on the specific population. An invalid research instrument is therefore one that gathers data whose findings are not consistent with the desired objectives. A good example of an invalid research instrument is where the objective of a study is to evaluate organisational performance (as is the case for this study) but the instrument applied instead measures organisational culture.

Validity of the testing instrument was verified at two stages. The first was during the instrument construction stage when the contents of the questionnaire were discussed intensively and refined with the help of the supervisors of the study. During this exercise, areas and concepts that required reframing, consolidation or bundling were attended to. This ensured elevated level of content validity of the questionnaire. The second stage was during pre-testing. However, when pre-testing was conducted, it emerged that all elements of the instrument were apparently

properly framed and clearly understood by the pre-tested sample. This confirmed high level of construct validity. Construct validity is a confirmation of skilful expression or interpretation of an idea or behaviour in real life situation (Muriuki, 2023). The researcher was satisfied with the attained level of validity of the instrument hence, full administration of the testing instrument was undertaken after minimal adjustment of the original questionnaire.

3.1.3 Reliability of Research Instrument

Reliability is an assessment of consistency of the instrument throughout the cross-section of the sample population. It is also a confirmation that if a repeat test was conducted using the same instrument, consistent information would have been captured leading to the same outcome. Mugenda and Mugenda (2003) summarise the meaning of reliability as the measure of the consistency of the research instrument in providing similar results after repeated trials. All the same, a reliable instrument is not necessarily a valid instrument but it is reliable as long as it gives consistent data even if it is measuring the wrong sample. On the other hand, a valid instrument is always a reliable instrument because it is designed for the correct sample. Thus in research, validity is more valuable and critical compared to reliability (Kothari & Garg, 2014).

It was not practical to confirm empirically the reliability of the testing instrument for this study due to time and resource constraint. This was because it was difficult to undertake repeat tests on the same population in order to draw a reliable conclusion. Furthermore, it should also be noted that reliability is influenced by random error (Mugenda & Mugenda, 2003). Consequently, for this study, reliability of the data collection instrument was confirmed statistically through pre-testing process and data analysis using Cronbach's Coefficient Alpha values based on the Kuder-Richardson (K-R) 20 formula. Statistically, the researcher was

satisfied with the result of the pre-testing process considering that the reliability test using the small pre-test sample yielded Cronbach's Alpha values between 0.73 and 0.86 on all variables which surpassed the threshold value of 0.7. On this basis, the Null Hypothesis that the testing instrument was not reliable was rejected and the alternative hypothesis that the instrument was reliable was adopted. Further, very few issues were detected with respect to the order, pattern, and consistency of the statements in the questionnaire. Language barriers, ambiguities and any conflicting language was also discounted. These outcomes were later found to be consistent with the final results of reliability test on the study's complete data collected and analysed as detailed in chapter four of this document.

Finally, the main lesson learnt by the researcher during the pre-testing stage was that random sampling within the predetermined strata was not appropriate. It was at that point that non-probabilistic quota sampling within the predefined strata was adopted. Consequently, the self-administered questionnaires were applied to all quotas of the entire sample after minor adjustments.

3.8 Methods of Data Analysis

Descriptive and inferential data analysis as discussed in more detail in chapter four of this study was conducted using Statistical Package for Social Sciences (SPSS Version 21). Inferential data analysis was employed to establish if the relationships established using the sample population could be appropriately generalised to the entire population of the study. In this regard, multiple regression analysis was undertaken taking account of all independent variables concurrently using the following models:

1. Model one:

In this model, multiple linear regression analysis was conducted taking into account all the four independent variables concurrently including the statistical (sampling) error but did not account for the moderator. This model was expressed as follows:

$$Y = \beta_0 + \beta_i X_i + \varepsilon, (i = 1, 2, 3, 4) \dots\dots\dots (1a)$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \dots\dots\dots (1b)$$

where Y was the dependent variable; β_0 was the constant; β_1 to β_4 were the regression coefficients showing the level of change influenced to Y by each independent variable X_i . Further X_1 to X_4 were the independent variables and ε was the statistical error arising from sampling.

2. Model two:

This was a multiple linear regression model taking into account all the four independent variables concurrently and also considering the moderator as an independent variable and finally including the statistical error. It was expressed as follows:

$$Y = \beta_0 + \beta_i X_i + \beta_j Z_j + \varepsilon, (i, j = 1, 2, 3, 4, j = 1) \dots\dots\dots (2a)$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_j Z_j + \varepsilon \dots\dots\dots (2b)$$

where Y was the dependent variable; β_0 was the constant; β_1 to β_4 were the regression coefficients showing the level of change influenced to Y by each independent variable (excluding the Moderator). X_i meaning X_1 to X_4 were the independent variables; β_j was the regression coefficient showing the level of change influenced to Y by the Moderator; Z_j was the moderating variable and ε was the statistical error arising from sampling.

3. Model three:

This was a multivariate regression model that took into account the interaction of each independent variable with the moderating variable and the overall influence of this combination on the dependent variable. It was expressed as follows:

$$Y = \beta_0 + \beta_i X_i + \beta_j Z_j + \beta_{ij} X_i Z_j + \varepsilon \dots\dots\dots (3a)$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_j Z_j + \beta_{ij} X_i Z_j + \varepsilon \dots\dots\dots (3b)$$

where Y was the dependent variable; β_0 was the constant; β_1 to β_4 were the regression coefficients showing the level of change influenced to Y by each independent variable (excluding the Moderator). X_i meaning X_1 to X_4 were the four independent variables; Z_j was the moderating variable; $X_i Z_j$ was the interaction term between variables X_i ($i=1,2,3,4$) and moderating variable Z_j ($j=1,2,3$) where $j=1$ for this study; β_{ij} were the coefficients of interaction term; and ε was the statistical error arising from sampling.

From the multiple regression analysis, correlation coefficient 'r' and the coefficient of determination R^2 were calculated to determine the extent to which the independent variables contributed to variation of the dependent variable.

Analysis of Variance (ANOVA) was conducted to determine if there were significant differences between group means at 95% level of confidence or 0.05 significance level using F statistics test. Where necessary, post-hoc analysis was conducted to separate the means and establish which ones were significantly different.

3.9 Diagnostic Tests

Diagnostic tests were conducted on the collected data to establish existence or otherwise of the following: Normality, Heteroscedasticity, Multicollinearity; and Auto-correlation tests.

3.1.4 Normality Test

Normality test was conducted to ascertain that data for each variable of the study had normal distribution property with little skewness or kurtosis. Skewness reflects lack of symmetry in the distribution curve because it is either sloping too much to the right which means positively skewed or slopping too much to the left meaning the data is negatively skewed. On the other hand, kurtosis is the property of the curve having lumpiness or peakedness instead of being a smooth curve. Testing a Null Hypothesis of the study when skewness or kurtosis exists in the data collected for the independent variables would give incorrect values of F and t tests at the presumed significance level, say 0.05 or even 0.01.

The Kolmogorov-Smirnoff and Shapiro-Wilk test (Cameron, 2005) was used to evaluate normality status for data collected in this study. This was a suitable non-parametric test since the data was collected from a sample and not the entire population. The results on normality test are discussed in chapter four of this study.

Alternatively, the skewness and kurtosis of the residuals would also have been evaluated based on Jarque-Bera (J-B) test according to the formula: $J-B = n\{(S^2/6) + (K-3)^2/24\}$ where S is Skewness and K is Kurtosis (Cameron, 2005).

3.1.5 Heteroscedasticity Tests

Heteroscedasticity (also heteroscedasticity) is the direct opposite of homoscedasticity that assumes a constant variance of the error term in a regression model (Cameron, 2005). Heteroscedasticity therefore occurs when the variance of the residuals or the error term in a regression model is not constant and changes with differing values of the independent variable. Consequently, when the error term changes in a heterogeneous

way, it equally affects the corresponding values of the dependent variable hence making it difficult to establish accurately the strength of the relationship between the independent and dependent variables.

Heteroscedasticity test was conducted to confirm existence of normal distribution of the dependent variable Y for each independent variable X_i and that each independent variable had normal distribution (King'oriah, 2004). Five tests have been proposed for heteroscedasticity namely- Goldfeld-Quandt (G-Q); Glejser; Parks; Breusch-Pagan; and White test (Cameron, 2005). An appropriate heteroscedasticity test was run for this study as fully described in chapter four.

3.1.6 Multicollinearity

Multicollinearity is a situation that arises when the independent variables acting together simultaneously influence the dependent variable (Cameron, 2005). Complete absence of multicollinearity occurs when there is no correlation among any combination of independent variables in a multiple regression equation. That means that each independent variable acting singly in a bivariate linear regression model would yield exactly the same results as when combined with the other independent variables in a multivariate linear regression model. In the other extreme case of perfect multicollinearity, each independent variable is an exact linear combination of the other independent variables. In such a scenario, it would be difficult to identify which independent variable acting in isolation influenced the dependent variable and to what extent. Cameron (2005) notes that in practice, the two extreme cases are unlikely to occur hence there is always some degree of multicollinearity among the independent variables. The essence of multicollinearity test conducted in this study was therefore to

establish whether there were problematic levels of multiple linear relationships (multicollinearity) among the independent variables and the extent of that situation that would affect the results of hypotheses testing of the study. The results of multicollinearity test conducted in this study are fully discussed in chapter four.

3.1.7 Correlation and Auto-correlation

In cross-sectional data, correlation analysis is concerned about the strength of relationships between variables at a particular moment in time. Thus, for each independent variable X_i , the strength of its relationship with the dependent variable Y is measured by means of the correlation coefficient ' r ' and the coefficient of determination, R^2 . Values of correlation coefficient ' r ' more than 0.5 whether positive or negative reveal a strong positive or negative correlation between each independent variable and the dependent variable.

On the other hand, auto-correlation relates to time series or longitudinal data whereby there is time pattern in the sequence of residuals. Under such situations therefore, there arises some resultant dependence between the error terms over time (Cameron, 2005). This problem of auto-correlation is also cited by Mbithi (2024) as happening when residuals of the previous time series data affect what is currently being measured.

Another source of auto-correlation arises when variables ride over each other such that variable A correlates with variable B , and B correlates with C and so on. In such a scenario, it would be difficult to measure accurately the impact of each of the variables A , B and C on the responding or independent variable Y .

The two main autocorrelation tests are Durbin-Watson test and the Lagrange Multiplier (LM) test. Durbin-Watson test was used to test if there was existence of any autocorrelation in the data for this study. As this study was based on cross-sectional data, time series autocorrelation was not relevant but autocorrelation arising from variables riding on each other was possible hence the need for auto-correlation test to be conducted on the data collected for this study. Finally, it is noted that a number of scholars prefer the use of the Lagrange Multiplier (LM) for testing auto-correlation as it is closely related to Chi-Squared (χ^2) through multiplication of the sample population, n , and the coefficient of determination, R^2 (Cameron, 2005).

3.10 Hypotheses Testing

Five Null Hypotheses were tested in this study and the decision criterion for each was as exhibited in Table 3.3.

Table 3.3

Five Null Hypotheses Tested

	Hypothesis	Decision Criteria
1.	H₀₁ : Environmental scanning has no significant influence on the performance of water service providers in Lower Eastern Counties, Kenya.	Reject the Null Hypothesis if the $p < 0.05$, otherwise fail to reject
2.	H₀₂ : Strategy formulation does not significantly influence performance of water service providers in Lower Eastern Counties, Kenya.	Reject the Null Hypothesis if the $p < 0.05$, otherwise fail to reject
3.	H₀₃ : Strategy implementation has no significant influence on performance of water service providers in Lower Eastern Counties, Kenya.	Reject the Null Hypothesis if the $p < 0.05$, otherwise fail to reject
4.	H₀₄ : Strategy control has no significant influence on performance of water service providers in Lower Eastern Counties, Kenya.	Reject the Null Hypothesis if the $p < 0.05$, otherwise fail to reject

5. **H₀₅:** Demand for water does not moderate the relationship between strategic management practices and performance of water service providers in Lower Eastern Counties, Kenya. Reject the Null Hypothesis if the $p < 0.05$, otherwise fail to reject
-

Source: Author (2025)

3.11 Operational Measurement of Variables

Operational measurement of variables is about breaking down the variables into measurable parts as well as stating the indicators that confirm the existence of each variable and selecting a scale that will appropriately measure how the variable changes in value. The operational measurement of variables for this study is summarised in Table 3.4.

Table 3.4

Operational Measurement of Variables

Variable	Type	Indicator	Scale of measurement	Data Collection Instrument	Data analysis	Sources of data
Environmental scanning	Independent	Reports on meetings held, SWOT analysis reports PESTEL Analysis reports	Likert Scale	Questionnaire	Descriptive and inferential	Company
Strategy formulation	Independent	Vision and mission statements; Strategic objectives set; Plans and budgets; Strategic Leadership in place	Likert Scale	Questionnaire	Descriptive and inferential	Company
Strategy implementation	Independent	Organisational structure; Use of tangible and intangible assets; ICT in place.	Likert Scale	Questionnaire	Descriptive and inferential	Company
Strategy Control	Independent	Deviations reports; Customer feedback; Employee satisfaction reports;	Likert Scale	Questionnaire	Descriptive and inferential	Company

Performance	Dependent	Benchmarking reports. Profitability; Customer satisfaction; employee satisfaction; growth of new connections.	Profitability; ROA;ROE; Personnel Efficiency; Non-Revenue Water (NRW), Supply reliability.	Questionnaire	Descriptive and inferential	Company, and customers feedback
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Source: Author (2025)

3.11 Ethical Consideration

Ethical issues in research are to be avoided at all times. According to Mathooko et al. (2011), research is the search for knowledge in any field through objective and systematic methods of seeking a solution to a problem. Thus, research is a scientific process that seeks to discover a solution to a problem through objective data collection and analysis. In view of that, research does not condone data manipulation or infringement of the rights of the people who own primary or raw data.

On the above consideration, this research was conducted in a hygienic and ethical manner consistent with ethical tenets. With regard to coverage, all areas within the delimitation of the study were equally covered without any bias. Thus, no legitimate institution or group was given any special consideration or was excluded in order to produce favourable results to the researcher. Further, the design of the testing instrument was such that it was neutral to all respondents and all statements that the respondents were to react to did not target any individual or group. Thus, the questionnaire did not contain any leading questions that could have deliberated guided respondents to answer in a particular way. Furthermore, illegitimate data mining or coercion of the respondents to provide any form of information was completely

avoided. Finally, the researcher maintained a high standard of confidentiality at all times and everybody's right was protected during all stages of the research.

All data provided by respondents for this study was therefore on voluntarily basis thereby avoiding any measurement error and any that arose was random and not by design. Nevertheless, during data clean-up and coding, the researcher observed a few cases of ethical concern arising from the respondents on their own volition engaging in satisficing and social desirability behaviour when responding to the questionnaire. Satisficing was detected where the respondent apparently applied no or little effort to answer the questions and just filled the questionnaire for the sake of filling the spaces provided. In such a situation, the answers to all questions of the questionnaire were found to be uniformly positive, negative or neutral. On the other hand, the respondents driven by social desirability might have given biased responses based on whether they considered it more socially appropriate to answer in favour of or against their organisations as opposed to responding based on their true opinions on the matter. Also a few respondents might have answered the questionnaire in a manner that they believed was most socially acceptable to their organisation, peers or the researcher. On this basis, all their answers were extreme in a particular way – either all positive or all negative. Additionally, some questionnaires were invalidated for being incomplete. It was however not distinctly clear which of the respondents were motivated towards satisficing or social desirability orientation.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction

This chapter contains the descriptive and inferential analyses of the data collected in order to test the hypotheses of the study. Cross-sectional data was collected using a questionnaire based on four independent variables, one moderator and a dependent variable. The four independent variables were, environmental scanning, strategy formulation, strategy implementation and strategy control. The moderator was water demand while the dependent variable was performance of water service providers. For ease of interpretation and understanding, the information is represented pictorially in form of tables and charts. The chapter starts with descriptive statistics of the demographics of the respondents including gender, age, education levels, and working experience followed by diagnostic tests and hypotheses testing and ends with the discussion of results.

4.2 Response Rate

Response rate is the percentage of those respondents who returned completed questionnaires as compared to the total number of questionnaires issued to the study's subjects of observation obtained from the sampling frame. The response rate is summarised in Table 4.1.

Table 4.1

Response Rate

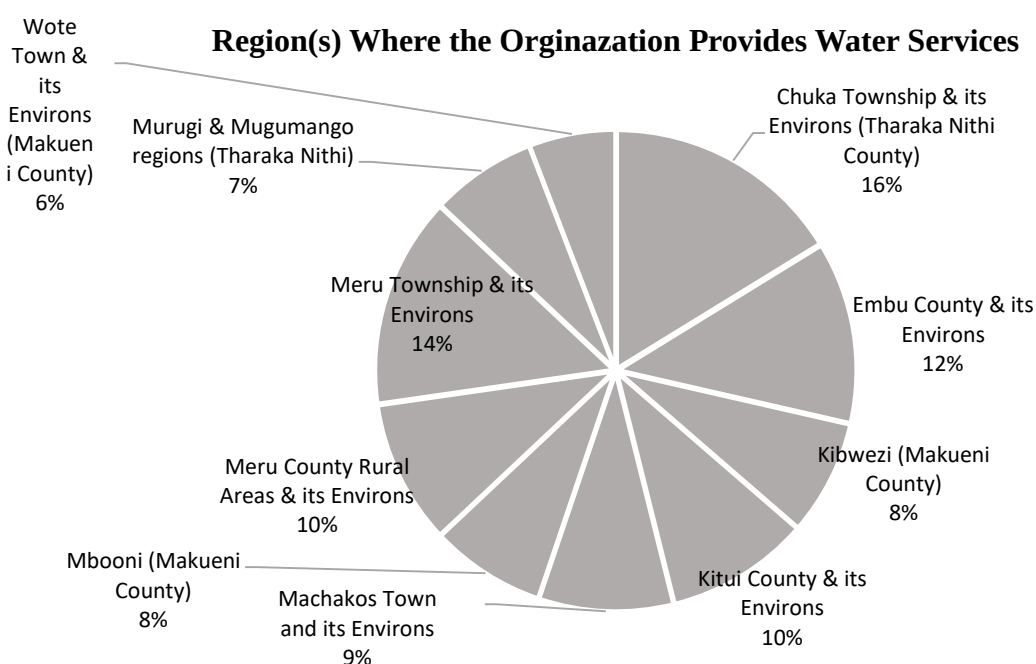
Sample Size	Number of Questionnaires Returned	Number of Valid Questionnaires (Fully Completed)	Percentage of Questionnaires Returned	Percentage of Valid Questionnaires (Response Rate)
263	183	154	69.6%	58.6%

Source: Author (2025)

Table 4.1 shows the response rate to questionnaires by the ten organizations. While the target sample size was 263, due to logistical constraints only 183 questionnaires (69.6%) were returned of which 154 were fully completed and were analyzed. The incomplete questionnaires were all set aside and only those fully completed were analysed. It was also noted that most respondents who did not return the questionnaires were mainly located far from the headquarters of the organisations from where blank questionnaires were distributed and the completed ones collected. Despite this accessibility challenge, the effective response rate of 58.6% though moderate was acceptable as it is a common occurrence in survey designs. Kairu (2022) encountered a similar situation in a survey of performance of leather and textile firms in Kenya where out of 312 questionnaires issued only 163 were returned resulting in a response rate barely 53%. Kothari and Garg (2014) opine that a response rate exceeding 70% is excellent for surveys while (Mugenda & Mugenda, 2003) guide that a response rate of more than 50% is adequate for inferential analysis and reporting.

Figure 4.1

Proportionate Contribution of each Organisation to the Overall Response Rate.



Source: Author (2025)

Figure 4.1 shows the percentage of fully completed questionnaires contributed to the overall response rate by each organisation. This ranged from 6% to 16%. The organisations that made higher contribution to the total had either a higher staff complement or had comparatively higher levels of relevant and accessible population located at their organisation's command centre.

4.3 Demographic Characteristics

The demographic characteristics analysed in this study included gender, age brackets, education level, work experience in terms of years of service in the organisation, and number of years served in the current position. These characteristics confirmed presence of diversity within the sample and population and that the respondents had the capacity to provide objective, balanced, unbiased and reliable data for the study. This view was also held by Mbithi (2024).

4.1.1 Gender of the Respondents

Respondents were asked to indicate their gender on the questionnaire and the results are shown in Table 4.2.

Table 4.2

Gender of the Respondents

Gender of the respondent	Frequency	Percent
Male	75	48.7
Female	65	42.2
Not stated	14	9.1
Total	154	100.0

Source: Field Data (2025)

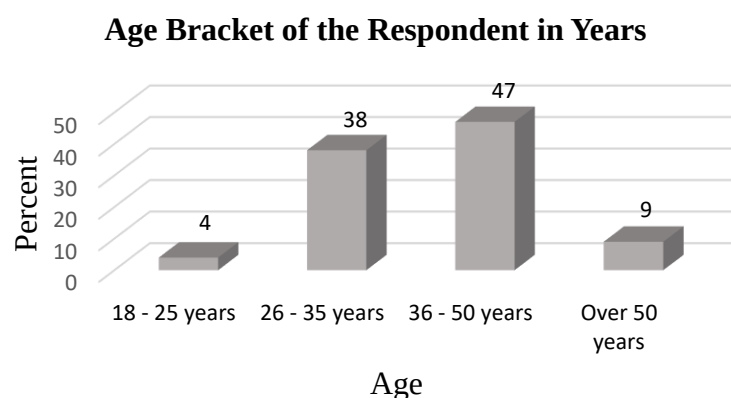
Out of the 154 respondents 140 (91%) of them stated their gender while 14 (9%) did not. Nevertheless, it is observed from the above information that there was reasonable male-female gender balance in the staffing of water service providers in the Lower-Eastern Counties of Kenya with at least 48.7% being male and 42.2 % being female. Balanced gender ratio confirmed absence of gender related bias with respect to data collected through the questionnaire.

4.1.2 Age Brackets of the Respondents

The age bracket of the respondents as per their responses to the questionnaires is shown in Figure 4.2

Figure 4.2

Age Brackets of the Respondents



Source: Author (2025)

It is noted from Figure 4.2 that majority of the respondents constituting 47% were in the 36-50 years age bracket. The second populous age bracket was 26-35 years comprising of 38 % of the

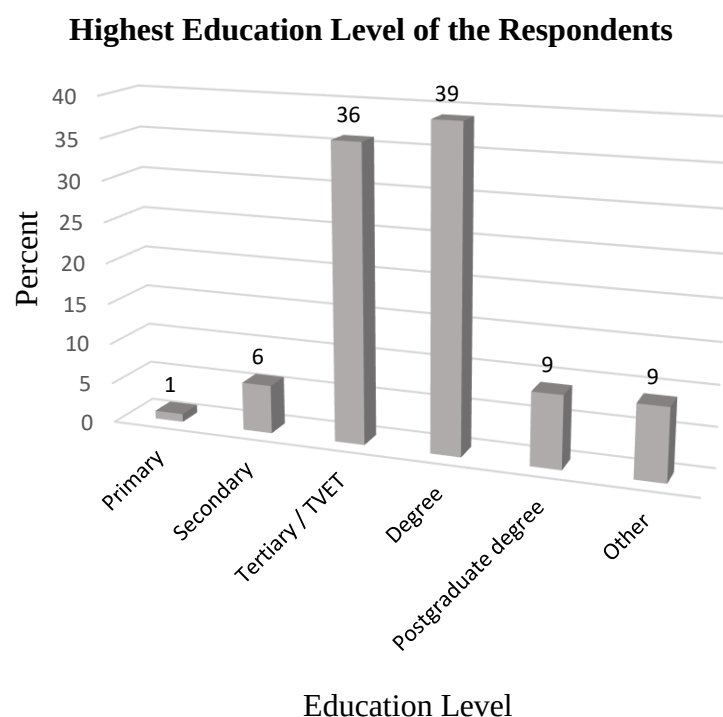
respondents. The two combined age brackets resulted in a total proportion of 85%. Thus, most water service providers in the Lower-Eastern Kenya were staffed with mature workers and the staff population was normally distributed across all working age brackets. This data was consistent with that collected through local studies in other sectors. In Kenya Rural Roads for example, the demographic characteristics indicated that 87.8% of staff were in the age bracket between 27 and 48 years (Mrongo, 2024). Normally distributed ages of respondents in this study was a good assurance that data collected contained wide viewpoints from normally distributed life experiences.

4.1.3 Level of Education of the Respondents

Respondents were asked to state their highest level of education as per categories set out in the questionnaire and the summary of the results is exhibited in Figure 4.3

Figure 4.3

Highest Level of Education of the Respondents



Source: Author (2025)

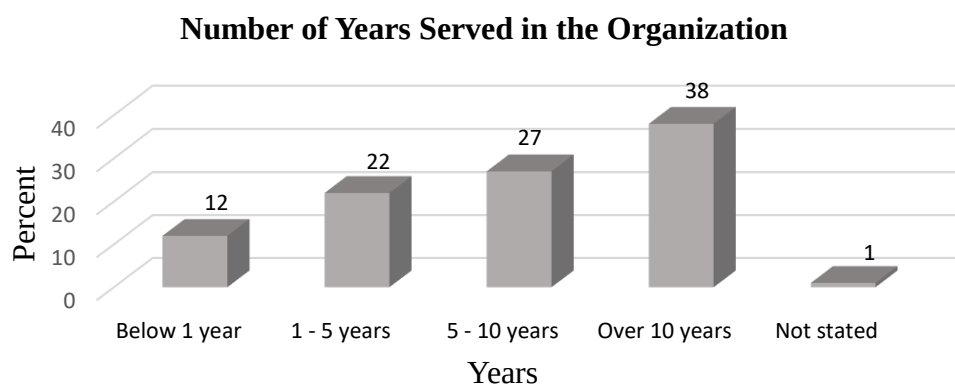
Figure 4.3 show that a large proportion of respondents were well educated as over 39% held a university degree and another 36% had qualifications from tertiary institutions. Further, at least 9% of the respondents had post-graduate degrees. This showed that water service providers in the Lower-Eastern Kenya considered robust academic achievements as important assets for their organisation hence they encouraged staff to enrich their academic qualifications. The data also implied that most of the respondents understood the value of the research and hence they were capable of responding to the information in the questionnaire for this study more objectively. Furthermore, high education may enhance understating of environmental scanning and other aspects of strategic management practices resulting in better organisational performance.

4.1.4 Years of Service

Figure 4.4 shows the number of years that the respondents had worked with their current employer.

Figure 4.4

Years of service



Source: Author (2025)

Majority of the respondents (66%) had served their organization for over 5 years as shown in Figure 4.4. This was a good indicator that there was stability of tenure for staff working for water service providers in the Lower-Eastern Kenya. The information also indicated that the respondents had a lot of experience in their organizations hence their opinions about management practices and performance of their organizations were considered as reliable and valuable. However, whereas long tenures could strengthen institutional memory it may impede creativity and innovativeness which are key components of capabilities that assure organizational competitiveness.

4.1.5 Current Position held by Staff at their Organisation.

Respondents were requested to select from the categories provided in the questionnaire the one that best described their current position in their organisation. The results were summarised as shown in Table 4.3.

Table 4.3

Current Position held by Staff at their Organisation

Current position held by the respondent	Frequency	Percent
Management	29	18.8
Operations	56	36.4
Engineer	2	1.3
Marketing	7	4.5
Ordinary employee	27	17.5
Other	33	21.4
Total	154	100.0

Source: Field Data (2025)

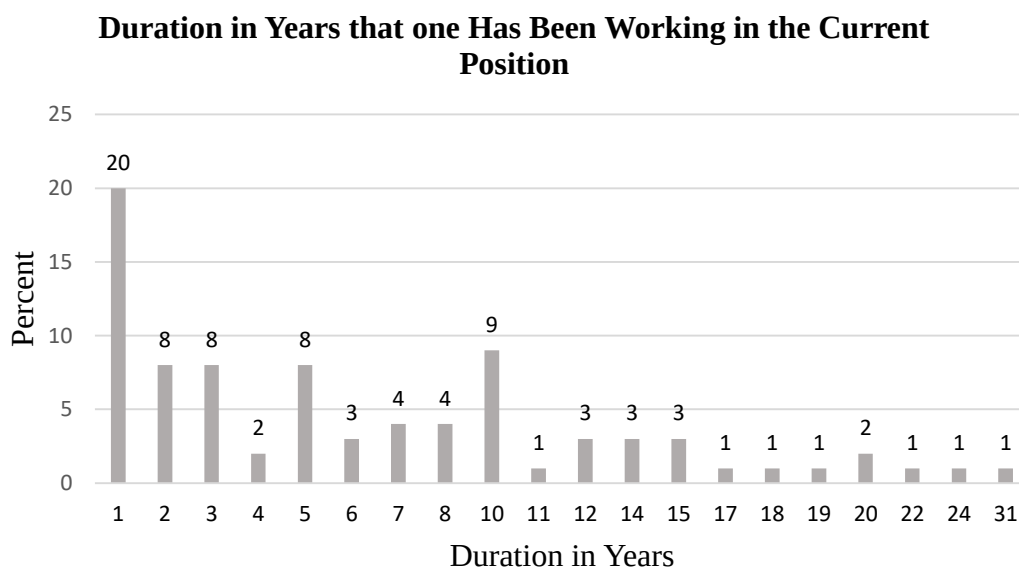
All the 154 respondents had indicated in the questionnaires their current position at their organisations. Table 4.3 shows that majority of the respondents were cumulatively in management, operations, engineering and marketing. These were the groups or categories whose information was expected to be most relevant and of high value for this study.

4.1.6 Number of Years Worked in Current Position

The respondents were asked to indicate in the questionnaire the number of years they had worked in their current positions. This was intended to establish the work experience of the respondents at their current position so as to gauge the relevance of their responses to this questionnaire. The results were as shown in Figure 4.5.

Figure 4.5

Duration the Respondents had worked in their Current Position



Source: Author (2025)

From Figure 4.5 it can be established that majority (65%) of employees had been in the same position for over three years and 27 % in the same position for 10 years and above. With regard

to this research, the data revealed that majority of the respondents had enough exposure and experience at their current position and understood their institutional operations quite well. Thus, their responses to the questionnaire was considered reliable. However, with regard to strategic management practices, the data may have in one way demonstrated low level of job rotation and high level of stagnation and lack of growth in terms of career progression. On the other hand, the high proportion of (20%) of respondent having served for only one year in their current position portrayed a positive picture of the water services providers in the Lower-Eastern Kenya as it was an indication of dynamic rejuvenation of the organizational structure through new recruitment or staff promotions.

4.1.7 Awareness that the Organization is involved in data collection to make New Strategies

The respondents were asked to indicate in the questionnaire if they were aware that their organizations were involved in data collection to make new strategies. Out of the 154 respondents who answered this question, majority (75.4%) answered affirmatively as shown in Table 4.4.

Table 4.4

Awareness that the Organization collects data to make New Strategies

		Frequency	Percent
Valid	Not aware	31	20.1
	Aware	116	75.4
	Unsure	7	4.5
Total		154	100.0

Source: Field Data (2025)

Table 4.4 shows that majority of the respondents were aware that water service providers collected data for strategy formulation purposes. However, the 24.6% who are not aware exposed a high level of exclusivity which may result in apathy and diminished ownership of formulated strategies by employees.

4.1.8 Stakeholders involvement in Strategic Planning

The respondents were asked to indicate if stakeholder consultation was done by the managers when reviewing and making new strategies. 154 respondents answered this question and majority (77.3%) answered positively as shown in Table 4.5 and pie chart below.

Table 4.5

Managers consulted Stakeholders when Reviewing and Making New Strategies

		Frequency	Percent
Valid	No	21	13.6
	No idea	14	9.1
	Yes	119	77.3
Total		154	100.0

Source: Field Data (2025)

It was evident as shown in Table 4.5 that stakeholder participation was exercised by water service providers during strategic planning exercise. Nevertheless, the 22.7% of the respondents who felt excluded signals a significant minority that could undermine inclusiveness in organizational strategy.

4.1.9 Involvement in data gathering and Strategy Formulation

The respondents were asked to indicate if they felt adequately involved during data gathering and strategy formulation process and the responses were lukewarm as shown in Table 4.6 and the corresponding chart below.

Table 4.6*Employee involvement in Data Gathering and Strategy Formulation*

		Frequency	Percent
Valid	Not involved	22	14.3
	Partially involved	79	51.3
	Highly involved	48	31.2
	Not Sure	5	3.2
Total		154	100.0

Source: Field Data (2025)

From Table 4.6 it is noted that the majority (51.3%) of the respondents felt they were partially involved in this exercise while only 31.2 % of the respondents felt that they were highly involved in data gathering and strategy formulation. Finally, 14.3% stated categorically that they were not involved at all while 3.2 % were not sure. From another angle, it is observed that around 69% of the employees were either partially involved or not involved at all during strategy formulation process. As indicated earlier, total employee inclusivity is desirable in strategic management processes since it results in high achievement of set goals due to high level of employee ownership of the formulated strategies.

4.4 Reliability Analysis

As explained in chapter three of this study, reliability analysis is an assessment of the consistency of the testing instrument to confirm whether repeat trials conducted on the same sample or population using the same instrument would reproduce consistent outcomes or similar results (Mugenda & Mugenda, 2003). Although reliability test can be conducted empirically by undertaking repeat trials on various samples of the population, time and resource constraint could not permit such undertaking in this study. Consequently, reliability of the data collection

instrument was confirmed more effectively using Cronbach's Coefficient Alpha formula using the SPSS statistical package during the data analysis stage. Mugenda and Mugenda (2003) and also Mugenda (2008) consider a reliability coefficient of 0.8 or more to imply high degree of reliability of data. Further, the closer the value of Alpha is to 1.0, the higher the reliability of the instrument. Typically, values of Alpha in social science research range between 0.7 and 0.8 and those below 0.6 are usually rejected. Cronbach's Alpha statistics of the data collection instrument as established against each variable of this study were as summarised in Table 4.7.

Table 4.7

Results of Reliability Analysis of all Variables

Variable	Variable Identity	Number of Items	Cronbach's Alpha
1. Environmental Scanning	X ₁	14	0.896
2. Strategy Formulation	X ₂	14	0.914
3. Strategy Implementation	X ₃	14	0.896
4. Strategy Control	X ₄	11	0.902
5. Water Demand (Moderator)	Z	13	0.764
6. Performance	Y	17	0.886

Source: Author (2025)

4.1.10 Environmental Scanning (X₁)

The first variable of the study was Environmental Scanning. On this independent variable, respondents answered 14 questions using a Likert's scale of 1 to 5. The reliability of the responses based on the questionnaire were as summarized in Table 4.7. The Cronbach's Alpha under this variable arising from the responses provided to the associated 14 statements in the questionnaire was 0.896. This value was well above the threshold Alpha of 0.7 thereby signifying fairly high reliability of the testing instrument based on this variable.

4.1.11 Strategy Formulation (X₂)

Strategy formulation was the second independent variable and 14 questions were answered using a Likert's scale of 1 to 5. The Cronbach's Alpha under this variable was 0.914 as shown in Table 4.7. This indicated a strong level of reliability of the testing instrument with respect to the responses provided.

4.1.12 Strategy Implementation (X₃)

With regard to the third independent variable which was Strategy Implementation, respondents answered 14 questions and their responses were weighted on a Likert's scale of measurement ranging from 1 to 5. The reliability of the responses based on the data collection instrument was as shown in Table 4.7. On the basis of that measurement, the Cronbach's Alpha that was obtained for this variable was 0.896. This value also confirmed that there was a high level of reliability of the testing instrument.

4.1.13 Strategy Control (X₄)

The fourth and final independent variable was Strategy Control against which 11 questions were answered on a five points Likert's measurement scale of 1 to 5. The results of the reliability statistics for the testing instrument on this variable based on the Cronbach's Alpha formula were as shown in Table 4.7. It was evident from the Cronbach's Alpha of 0.902 obtained under this variable that there was very high level of reliability of the testing instrument as well as the responses provided under this variable.

4.1.14 Demand for Water (Z)

Demand for water was the only moderating variable under this study. The respondents answered 13 questions based on a five points Likert's measurement scale of 1 to 5. The Cronbach's Alpha

reliability statistics for the data collection instrument and the respective responses obtained was shown in Table 4.7. The Cronbach's Alpha of 0.764 obtained for this variable was fairly high as it exceeded the reliability threshold Alpha of 0.7. This confirmed that the testing instrument for this study was quite reliable based on the score of this moderating variable.

4.1.15 Performance (Y)

Performance was the dependent variable for this study. Reliability test conducted under this variable was based on responses obtained from 17 questions answered through the questionnaires using a five-points Likert's measurement scale of 1 to 5. The outcome was as shown in Table 4.7.

The Cronbach's Alpha of 0.886 for this variable was relatively high which confirmed that the testing instrument for this study was quite reliable based on the statistical score of this variable.

In conclusion, the testing instrument passed the internal reliability test (based on the sample) hence the data collected using the instrument qualified for further analysis in accordance with the objectives of the study.

4.5 Descriptive Analysis

Descriptive statistics are the summarisation of characteristics of a population in terms of totals, frequencies, modes, median, mean, and standard deviations. In order to obtain the descriptive statistics of the water service providers being evaluated in this research, the self-administered questionnaires issued to 263 respondents contained sections which required respondents to react according to their assessment of their organisations based on the generic statements describing water service providers positively. The statements were premised on the four independent

variables, the moderator and the dependent variable of the study. The response against each statement was to be a selection of a score from a five-points Likert's measurement scale spanning from 1 to 5 whereby, Strongly Disagree (SD) was represented by a score of 1 on one end while Strongly Agree (SA) was represented by a score of 5 on the other end. In order to be objective and create a continuous ratio scale of measurement for clarity as to where one categorical or point score on the Likert's scale starts and where it ends, the 4 spaces between the extreme points of the Likert's scale that is between 1 and 5 were divided into 5 equal portions of 0.8. This resulted in an equidistance of 0.8 between the scores as guided by Carifio and Perla (2007) as cited by Mbithi (2024). Consequently, Strongly Disagree (SD) ranged between 1.0 and 1.8; Disagree (D) between 1.8 and 2.6; Neutral (N) between 2.6 and 3.4; Agree (A) between 3.4 and 4.2; and finally Strongly Agree (SA) between 4.2 and 5.0.

The descriptive statistics for this study with respect to the respective independent variables and the moderating variable are discussed below.

4.1.16 Descriptive Statistics on Environmental Scanning

Environmental Scanning was the first variable of the study. On this variable, the 154 valid respondents submitted their replies to 14 statements based on the five-points Likert's measurement scale as was clarified to them in the questionnaire. The outcome was as indicated in Table 4.8.

Table 4.8*Descriptive Statistics on Environmental Scanning*

	Statement soliciting a response	N	Min	Max	Mean	S. D
1.	Information is regularly gathered in the environment based on customer views and suggestions	154	1	5	3.70	.928
2.	There is adequate personnel who gather information needed by the organization	154	1	5	3.43	1.007
3.	Staff are often trained on how to obtain relevant and quality information from clients	154	1	5	3.43	1.083
4.	There are adequate tools to collect required data	154	1	5	3.20	.963
5.	Meetings are often conducted to evaluate usefulness of new market information	154	1	5	3.49	1.048
6.	Information gathered helps the organization to understand the market better	154	1	5	3.79	.994
7.	Information obtained from the environment enables the formulation of superior strategies	154	1	5	3.80	.909
8.	New strategies are always based on information collected from the environment	154	1	5	3.64	.953
9.	Data is used to revise company strategies regularly	154	1	5	3.78	.891
10.	The organization regularly benchmarks with other water service providers in the region	154	1	5	3.31	1.175
11.	Over time, the company has built reliable water supply sources to avoid rationing / water shortages	154	1	5	3.38	1.041
12.	Water supply lines are continually monitored to ensure they are serving company customers well	154	1	5	4.34	.790
13.	The company has accumulated adequate experience on how to serve its customers better	154	1	5	4.08	.818
14.	Company customers often rate the company's services highly	154	2	5	3.74	.787
	Valid N (listwise)					

Source: Field Data (2025)

Table 4.8 above shows that all 154 respondents answered the 14 questions. Out of these statements, 11 were answered affirmatively with a mean score above 3.4 out of 5. This was strong evidence that majority of the respondents either strongly agreed or generally agreed with

the positive sentiments expressed in the statements as far as their organizations were concerned. The other three statements on this variable had neutral responses at a mean score ranging from 3.2 to 3.38. From the scoring criteria, no statement received a mean score below 2.6 which would have indicated that majority of the respondents disagreed with that statement.

The 11 statements that received highly positive responses were - Firstly, information is regularly gathered in the environment based on customer views and suggestions. For this statement a mean score of 3.7 out of 5 was obtained with a standard deviation (SD) of 0.928. This was a good indication that water service providers valued customer feedback which was a vital source of information for effective strategic management of their organisations. Consistent with this finding, the second statement with a highly positive response was that, there is adequate personnel who gather information needed by the organization (mean 3.43, SD 1.007). The third was that staff are often trained on how to obtain relevant and quality information from clients (mean 3.43, SD 1.083); the fourth was that, meetings are often conducted to evaluate usefulness of new market information (mean 3.49, SD 1.048). This positive outcome confirmed that water service providers regularly reviewed data that was collected to enhance their organizational performance. The fifth statement was that, information gathered helps the organization to understand the market better (mean 3.79, SD 0.994); the sixth was that, information obtained from the environment enables the formulation of superior strategies (mean 3.80, SD 0.909); the seventh being that, new strategies are always based on information collected from the environment (mean 3.64, SD 0.953); the eighth was that data is used to revise company strategies regularly (mean 3.78, SD 0.891). These positive responses confirmed that water organizations responded to the environmental dynamics using data-based evidence. The ninth stated that, water supply lines are continually monitored to ensure they are serving company customers well (mean 4.34, SD 0.790); the tenth was that, the company has accumulated

adequate experience on how to serve its customers better (Mean 4.08, SD 0.818); finally, the eleventh was that, company customers often rate the company's services highly (mean 3.74, SD 0.787). The outcome of the last three statements above confirmed that majority of the water service providers had high regard for their customers and had put in place monitoring systems for customer satisfaction.

The three questions that received neutral answers with a mean score ranging from 3.2 to 3.38 were first, there are adequate tools to collect required data (Mean 3.20, SD 0.963 This score indicated that, whereas the water service providers endeavoured to gather data to support their strategic management process, they had not invested adequately for that endeavour. The second statement with a neutral answer was that, the organization regularly benchmarks with other water service providers in the region (mean 3.31, SD 1.175). The neutral score under this statement implies that water service providers rarely sought competitiveness in their business which therefore limits their desire for creativity and innovation. The third and last statement with a neutral score was that, over time, the company has built reliable water supply sources to avoid rationing or shortages (Mean 3.38, SD 1.041). This outcome was an indication that majority of the organizations had invested minimum resources towards meeting customer demand for water.

The fact that 11 out of 14 statements receiving highly positive scores was a good indication that the organisations had taken deliberate steps towards understanding their operating environment in order to formulate strategies based on solid information. Further as the standard deviations on responses to these statements were small mainly around 1.0 then the the respondents had virtually convergent opinions regarding their organisation's commitment to environmental scanning. Further, the statement that received overwhelming positive responses was that, water

supply lines are continually monitored to ensure they are serving company customers well. The average score on this statement was 4.34 out of 5 and SD of 0.790. This demonstrated that the organisations were commitment to providing high level customer service. On the other hand, the statement that received very low score was that there are adequate tools to collect required data (Mean 3.20, SD 0.963). This was a clear indication that organisation invested poorly on tools that support operational activities including environmental scanning processes.

4.1.17 Descriptive Statistics on Strategy Formulation

Strategy Formulation was the second independent variable of the study and the respondents applied the five-points Likert's measurement scale to respond to the questionnaire as shown in Table 4.9.

Table 4.9*Descriptive Statistics on Strategy Formulation*

Statement soliciting a response	N	Min	Max	Mean	S.D
1. Board of Directors is involved in strategy formulation	154	1	5	4.21	0.994
2. Management regularly clarifies vision and mission statements to staff and customers	154	1	5	3.93	0.997
3. Vision and mission statements are well aligned to environmental changes	154	1	5	4.04	0.948
4. Meetings are held regularly to review plans and strategies	154	1	5	3.82	0.936
5. The company has good plans and budget for its activities	154	1	5	3.86	0.956
6. The company sets strategic objectives periodically with clear goals and targets	154	1	5	3.90	0.912
7. Company policies are crafted collectively by staff members and approved by top management before implementation	154	1	5	3.66	1.091
8. Staff go for retreats regularly for planning, budgeting and policy formulation	154	1	5	3.01	1.128
9. All staff participate during strategic planning process	154	1	5	3.22	1.158
10. The organization conducts SWOT analysis	154	1	5	3.43	0.967
11. The organization uses SWOT analysis feedback to evaluate and make new strategies	154	1	5	3.44	0.982
12. Managers consult opinion of staff when formulating strategies	154	1	5	3.45	1.085
13. Quality standards are normally included for the organization's water in its plans	154	1	5	3.95	0.968
14. During planning, the scope of the company's water coverage is usually evaluated by area and quantity	154	1	5	3.98	0.931

Source: Field Data (2025)

As shown in Table 4.9 all the 154 respondents answered the 14 questions of which 12 statements were answered affirmatively with a mean score above 3.4 out of 5. The other two questions had mean scores of 3.01 and 3.22 respectively signifying disagreement.

The 12 statements that were answered affirmatively were: First, The Board of Directors is involved in strategy formulation (mean 4.21 and SD 0.994); secondly, Management regularly clarifies vision and mission statements to staff and customers (mean 3.93, SD 0.997); the third one was that, Vision and mission statements are well aligned to environmental changes (mean 4.04, SD 0.948); the fourth stated that, Meetings are held regularly to review plans and strategies (mean 3.82, SD 0.936); the fifth statement was that, The company has good plans and budget for its activities (mean 3.86, SD 0.956); the sixth stated that, The company sets strategic objectives periodically with clear goals and targets (mean 3.9 and SD 0.912); the seventh was that, Company policies are crafted collectively by staff members and approved by top management before implementation (mean 3.66, SD 1.091); the eighth was, The organization conducts SWOT analysis (mean 3.43 and SD 0.967), the ninth was, The organization uses SWOT analysis feedback to evaluate and make new strategies (mean 3.44, SD 0.982); tenth, Managers consult opinion of staff when formulating strategies (mean 3.45, SD 1.085); eleventh, Quality standards are normally included for the organization's water in its plans (mean 3.95, SD 0.968); finally, During planning, the scope of the company's water coverage is usually evaluated by area and quantity (mean 3.98, SD 0.931).

Nearly all the statements that generated highly positive responses had standard deviations below 1.0 meaning that almost all respondents took convergent positions about strategy formulation in their organizations. The only statement with higher than average standard deviation with a score of 1.091 and a relatively low mean of 3.66 was that company policies are crafted

collectively by staff members and approved by top management before implementation. This was an indication of divergent opinion on this statement and a pointer to exclusivity of some staff during policy formulation. Lack of inclusivity can compromise commitment of employees towards collective ownership of policies thus lowering the achievements of the organization.

The first of the two statement with lukewarm replies was that, Staff go for retreats regularly for planning, budgeting and policy formulation which resulted in a mean score of 3.01 and Standard Deviation of 1.128. The second one was that; all staff participate during strategic planning process. This had a mean score of 3.22 and a standard deviation of 1.158. From the low scores on those two statements and higher than average standard deviations, it was observed that the respondents not only disagreed with those statements but generally, their opinions on the matter were fairly divergent. Strategic planning is a critical process requiring total devotion of time and human capital. The outcome of the two statements indicated that there was little commitment by management on strategy formulation exercise contributing to performance challenges.

4.1.18 Descriptive Statistics on Strategy Implementation

This was the third independent variable and the respondents replied to 14 statements based on the five-points Likert's measurement scale as exhibited under Table 4.10:

Table 4.10*Descriptive Statistics on Strategy Implementation*

	Statement soliciting a response	N	Min	Max	Mean	S.D
1.	Organization's leaders meet regularly to review and steer on-going activities	154	2	5	4.00	0.741
2.	The organization matches existing structure with new strategy being implemented	154	1	5	3.71	0.830
3.	The organization doesn't keep vacant positions for long	154	1	5	3.40	1.087
4.	The organization has a clear reporting authority and process	154	1	5	3.88	0.956
5.	The organization has adequate knowledge, experience and skills to do its job	154	1	5	4.04	0.899
6.	There is good communication to all staff	154	1	5	3.69	1.031
7.	A central command unit coordinates strategy implementation	154	1	5	3.60	0.866
8.	The organization works within its rules, regulations and policies	154	1	5	3.99	0.820
9.	Management provides adequate resources to do every job	154	1	5	3.55	0.977
10.	There is adequate supervision of all activities in the organization	154	1	5	3.97	0.859
11.	The organization encourages teamwork	154	1	5	4.21	0.868
12.	The organization has adequate tools, equipment and technology to get work done	154	1	5	3.36	1.112
13.	Staff are trained regularly	154	1	5	3.15	1.148
14.	Employees are rewarded often for good work	154	1	5	2.95	1.262

Source: Field Data (2025)

Table 4.10 shows that 154 respondents replied to all the 14 statements with 11 being answered affirmatively with a mean score exceeding 3.4 out of 5. The last three statements had virtually negative answers with mean scores ranging from 2.95 to 3.36.

The first of the 11 statements that received high level of agreement was that the organization's leaders meet regularly to review and steer on-going activities. This statement generated a mean score of 4.00 out of 5.00 and a Standard Deviation of 0.741. This was a clear indication that top leadership of water service providers were highly committed towards ensuring effective strategy implementation. The second statement was that the organization matches existing structure with new strategy being implemented (mean 3.71, SD 0.830). The descriptive values of the responses to this statement showed that majority of the respondents were confident about their organizations matching strategy with structure. Considering that the structures of these organizations followed strategy meant that on that score those organizations embraced good strategic management practice. The third statement with positive response was that organization doesn't keep vacant positions for long (mean 3.4 and SD 1.0870). Although this statement received a positive response, the level of agreements at a mean of 3.4 was at the lower margin. At the same time, the standard deviation was a little wider than that for most of the other statements meaning that the respondents barely agreed and also the level of concurrent was varied. The fourth statement was that the organization has a clear reporting authority and process (mean 3.88 and SD 0.96). This statement received high concurrence from respondents with a low standard deviation which clearly showed that during strategy implementation water service organizations undertook their administrative activities efficiently with clear reporting lines.

The fifth statement with positive response was that, the organization has adequate knowledge, experience and skills to do its job (mean 4.04, SD 0.899). In the opinion of the respondents therefore, most of the organizations had qualified people to undertake assigned responsibilities. This was a good sign that water service providers had invested in technical capabilities to help them undertake their activities effectively so as to attain high level of performance.

The sixth statement was that, there is good communication to all staff (mean 3.69, SD 1.031). this statement intended to establish if during strategy implementation, employees were properly engaged by management through effective communication. The positive response obtained confirmed that good internal communication existed in most of the water service providers showing a fairly high level of internal stakeholder involvement. This was a good indicator that those organizations desired to achieve high level of performance through maximized utilization of the human resources.

The seventh statement with a positive reaction suggested that a central command unit coordinates strategy implementation (mean 3.6, SD 0.866). The positive response indicated that work was coordinated and harmonized from a central point which was good for efficiency thus contributing to high performance.

The eight statement that received a positive reaction under this variable was that, the organization works within its rules, regulations and policies (mean 3.99, SD 0.820). The high level of agreement of this segment among the respondents confirmed that water service organizations operated within written rules and policy. This was a good indicator that strategies were formulated and guided by written policy during implementation. Organizations that operated in such an environment had a high chance of good performance and success in their business.

The ninth statement that receive a positive value of mean in the descriptive analysis under this variable was that, management provides adequate resources to do every job (mean 3.55, SD 0.977). This result showed that most respondents barely agreed with this statement as the mean

was at 3.55 which was slightly above 3.4 being the minimum score demonstrating agreement. Nevertheless, this outcome was a testament that water service providers endeavoured to allocate adequate resources for undertaking assignments by employees in order to accomplish their objectives.

The tenth statement was that, there is adequate supervision of all activities in the organization (mean 3.97, SD 0.859). The high mean and low standard deviation that was obtained through the analysis of this statement showed that respondents agreed with the statement with very little divergence. This was an indication that monitoring of performance was effected through active supervision of processes within water service organisations.

The eleventh statement under this category was that, the organization encourages teamwork (mean 4.21 and SD 0.868). This is the statement that received the highest level of agreement among the respondents and showed very little divergence. This meant that respondents had very high regard for their organization in terms of teamwork meaning the organisations had created strong and integrated work culture. This as a clear indication that water service providers had good internal strength that would earn them high level of performance.

Out of those 11 statements that received positive reactions, the one that received highest score was that, the organization encourages teamwork. This was followed closely by the one that stated that, organization's leaders meet regularly to review and steer on-going activities. These two statements confirmed that there was good leadership and teamwork for strategy implementation by the water service providers.

The three statements with modest or negatively inclined responses were first that the organization has adequate tools, equipment and technology to get work done. This statement had a mean score of 3.36 out of 5 and a standard deviation of 1.112. This implied that most of the water service providers had not invested effectively on modern technology and other physical assets that would enable them to undertake their processes effectively so as achieve competitive advantage. As guided by Resource Based View of the firm, organizations that lack important assets such as technology, working tools and equipment have little chance for success or attaining higher levels of performance.

The second statement on strategy implementation that had a neutral response was that, staff are trained regularly. That statement had a mean score of 3.15 and Standard Deviation of 1.148 indicating that most employees of water service providers were not satisfied with the level of retooling of workers. Lack of regular training of staff results in stagnated capabilities making the organization less equipped to respond effectively to the dynamic business environment.

The third and final statement with a neutral answer under this variable was that, employees are often rewarded for good work. The mean score for this statement was the lowest at 2.95 and the standard deviation was highest at 1.262. The conclusion from the low score and high standard deviation on this statement was that most employees felt that they were not rewarded well for good performance. Such employees are unlikely to release their full potential when undertaking their assignments leading to low productivity of the organization.

4.1.19 Descriptive Statistics on Strategy Control

Strategy control was the fourth independent variable of the study. The descriptive statistics for this variable are shown in Table 4.11.

Table 4.11*Descriptive Statistics on Strategy Control*

	Statement soliciting a response	N	Min	Max	Mean	S.D
1.	Performance is regularly reviewed against set standards	154	1	5	3.67	0.895
2.	Action is taken on weak areas of operation	154	1	5	3.79	0.792
3.	Staff performance appraisals are undertaken regularly	154	1	5	3.73	0.975
4.	There is clear and fair reward policy	154	1	5	2.93	1.007
5.	Staff are satisfied with the organization's recruitment and reward system	154	1	5	2.98	1.035
6.	Award of promotions is merit based	154	1	5	3.10	1.123
7.	Weak areas are identified and remedied	154	1	5	3.34	0.912
8.	Disciplinary cases are handled quickly and amicably	154	1	5	3.58	0.964
9.	Timely solutions are provided on existing performance gaps	154	1	5	3.41	0.877
10.	Performance deviations are corrected timely	154	1	5	3.39	0.897
11.	The organization uses evaluation feedback to make new strategies or review existing ones	154	1	5	3.49	0.919

Source: Field Data (2025)

Table 4.11 shows 154 respondents reacted to 11 statements under this variable. Respondents only agreed fully with six out of the 11 statements.

The first statement that respondents reacted affirmatively was that, performance is regularly reviewed against set standards (mean 3.67, SD 0.895). This was a good indication that water service providers were concerned about their levels of performance. This observation was reconfirmed by the second statement that, action is taken on weak areas of operation (mean

score 3.79, SD 0.792) and the third statement that averred that, staff performance appraisals are undertaken regularly (mean 3.73, SD .975).

Respondents meekly agreed with the next three statements which resulted in lower range mean scores with a high level of convergent as demonstrated by low standard deviations. The first of the three statements was that, disciplinary cases are handled quickly and amicably (mean 3.58, SD 0.964). This demonstrated that water service providers exercised fairness when handling disciplinary matters which built confidence and commitment of staff to their organizations. The next statement was that, timely solutions are provided on existing performance gaps (mean 3.41, SD 0.877). There was mild agreement to this statement but high convergence. Addressing performance gaps is a key area of strategy control and organisations should focus more on it so that they realise their set objectives. The final statement was that the organization uses evaluation feedback to make new strategies or review existing ones (mean 3.49, SD 0.919). Agreement to this statements although not strongly, demonstrated that organisations valued feedback which in a way arises from environmental scanning to facilitate the creation of new strategies.

Five statements received moderate to low mean values ranging from 2.93 to 3.39 out of 5 indicating that majority of the respondents were neutral with regard to those statements. The statements that received negative responses were those associated with staff reward policy, recruitment system, meritocracy in promotions and speed of dealing with performance deviations that were identified. These statements were:

Firstly, there is clear and fair reward policy (mean 2.93, SD1.007). The results of the descriptive statistics on this statement demonstrated lack of staff motivation. This statement was

corroborated by the second one with similar results which stated that, staff are satisfied with the organization's recruitment and reward system (mean 2.98, SD 1.035). The third statement probing the same area of staff motivation was that, award of promotions is merit based (mean 3.1, SD 1.123).

From the results of the descriptive analysis of the following two statements, it was evident that water service providers did not put enough effort to address weak areas or correct performance gaps. The first statement was that, weak areas are identified and remedied (mean 3.34, SD 0.912) and the second was that, performance deviations are corrected timely (mean 3.39, SD 0.897).

4.1.20 Descriptive Statistics on Water Demand (Moderator)

Water demand was the only moderating variable for this study. Respondents were required to use the the five-points Likert's measurement scale to respond to the 13 statements as clarified to them in the questionnaire. The statistics of the responses are summarized in Table 4.12.

Table 4.12*Descriptive Statistics on Water Demand (Moderator)*

	Statement soliciting a response	N	Min	Max	Mean	S.D
1.	The organization has satisfactorily met customer water demand over time	154	1	5	3.24	1.067
2.	Water demand in the organization's supply area is constant throughout the year	154	1	5	3.01	1.127
3.	Organization's water supply system always meets customers' demands	154	1	5	2.95	1.035
4.	The organization rarely rations water supply by zones	154	1	5	3.01	1.186
5.	Customers are normally satisfied with the company's water quality	154	2	5	3.92	0.907
6.	The organization's pricing policy is fair to its customers	154	1	5	3.95	0.849
7.	The organization has few monthly water disconnections	154	1	5	3.37	0.923
8.	The organization has few water bill defaulters	154	1	5	2.93	1.157
9.	The organization has few illegal connections in its system	154	1	5	3.14	1.095
10.	The organization faces water supply challenges due to restricted wayleaves	154	1	5	3.48	0.967
11.	The organization has modernized its supply lines to meet its customer demands	154	1	5	3.25	1.084
12.	Demand for the company's water services has been rising constantly	154	1	5	4.12	0.986
13.	The organization is unable to meet its customers' water demand	154	1	5	3.25	1.244

Source: Field Data (2025)

It is noted from Table 4.12 that most of the respondents were either neutral or disagreed with the majority (9 out of 13) of these statements yielding low mean scores that ranged between 2.93 to 3.37 with Standard Deviations mainly above 1.0. The 9 statements that respondents were either neutral or in disagreement were firstly that, the organization has satisfactorily met

customer water demand over time. This particular statement received a mean score of 3.24 out of 5 and a standard deviation of 1.067. This mean score of 3.24 out of 5 was a confirmation that majority of the respondent were uncertain that their organizations had supplied adequate quantity of water to satisfy customer demand. Adequate supply of quantity, quality and reliable water to customers was a key performance indicator, hence on the basis of this statement majority of the water service providers performed poorly.

The second statement with a neutral reaction from the respondents was that, water demand in the organization's supply area is constant throughout the year (mean 3.01 and SD 1.127). These statistics indicated dynamic or seasonal variations of water demand which water service providers have to address. The third statement that received a neutral answer was that, organization's water supply system always meets customers' demands (mean 2.95, SD 1.035). The outcome of this statement reconfirmed that water demand in the region of study was seldom met and that water service providers had not invested adequately on water supply systems to meet customer demand for water. That is why the fourth statement that stated that the organization rarely rations water supply by zones received a low mean score of 3.0 with a SD 1.186. Water rationing by water service providers is a strong indication of poor organizational performance.

The fifth, sixth and seventh statements with neutral answers were concerned about Non-Revenue Water that could affect water service providers financially. These three statements were: the organization has few monthly water disconnections (mean 3.37, SD 0.923); The organization has few water bill defaulters (mean 2.93, SD 1.157); The organization has few illegal connections in its system (mean 3.14, SD 1.095). The outcome of the statistical analysis of these statements showed that water service providers in the region of study suffered major Non- Revenue Water challenges that impacted negatively their financial performance.

The eight statement with a natural answer was that, the organization has modernized its supply lines to meet its customer demands (mean 3.25, SD 1.084). The reaction of the respondents on this statement was a clear indicator that majority of the water service providers operated with technologically outdated supply lines that required modernization in order to improve their water supply efficiency.

The last statement with neutral responses was that, the organization is unable to meet its customers' water demand (mean 3.25, SD 1.244). It was not exactly clear why respondents reacted this way to this statement. The results of those statistics indicated that respondents were neutral about the ability of the organizations in meeting water demand for their customers. The respondents were either uncertain that their organizations had the ability of meeting their customer's water demand, or they chose to be non-committal about this matter.

In summary, the descriptive statistics arising from the above nine statements confirm that most water service providers in the Lower-Eastern counties of Kenya had not adequately addressed water demand issues. The water service providers also faced challenges such as water bill defaulters and illegal connections which pointed to high Non-Revenue Water. Further, aging water distribution systems negatively impacted efficiency of water supply and the ability of the organizations in satisfying customer demand for water.

The four out of 13 statements which respondents were in agreement with were firstly, customers are normally satisfied with the company's water quality (mean 3.92, SD 0.907), this was a positive indicator that even though the organizations were not able to supply reliable quantities of water to customers, the quality of water was satisfactory. The statement on water tariff was that, the organization's pricing policy is fair to its customers (mean 3.95, SD 0.849). This was a good indicator of customer satisfaction in terms of water pricing. On the basis of the customer perspective of the balanced score card, this was good performance. The third statement under

this category was that, the organization faces water supply challenges due to restricted wayleaves (mean 3.48, SD 0.967). The outcome of this statement showed that water service providers faced strategy implementation challenges especially during installation of water supply systems. Those kind of challenges can impact performance negatively as they are threats that are outside the direct control of the water service providers. The final positive reaction was that, demand for the company's water services has been rising constantly (mean 4.12 SD 0.986). This was an indicator that water service providers have good potential for growth but they faced the challenge of meeting customer requirements if the potential for growth in water demand is not adequately addressed.

In summary therefore, the respondents confirmed that water service providers distributed quality water that was affordable to the customers. This was a great boost to the performance rating of the water service organizations. Further, water service providers have a bright future as long as they align their strategies to the available opportunity for growth considering that water demand in their respective areas was constantly rising. Nevertheless, the management of water service providers have to contend with the challenge of securing wayleaves for their water lines. This was considered as a major external threat confronting their strategy for successful expansion of their distribution network to address the rising water demands.

4.1.21 Descriptive Statistics on Performance

Performance was the dependent variable for the study and its measurement was based on the parameters of the Balanced Scorecard conceived by Kaplan and Norton in the 1990's. The measurement criteria were therefore in accordance the four perspectives of the Balanced Scorecard namely: Customer, Financial, Internal Processes and Learning and Growth perspectives of the organization. Respondents were required to react to 17 statements under that variable based on a five-points Likert's scale with respect to the four perspectives. The descriptive statistics resulting from the analysis of those responses was as detailed in Table 4.13.

Table 4.13*Descriptive Statistics on Performance*

	Statement soliciting a response	N	Min	Max	Mean	S.D
1.	In the last five years, customer feedback has been positive and are satisfied with the organization's services	154	1	5	3.36	0.906
2.	Customer complaints have reduced in the last five years	154	1	5	3.59	0.933
3.	In the last five years, number of customers in the organization has increased	154	1	5	4.08	0.921
4.	In the last five years, more customers have been connected as planned	154	1	5	3.86	0.871
5.	In the last five years, the organization has been making good profits	154	1	5	3.07	1.109
6.	In the last five years, revenue collected by the organization has increased	154	1	5	3.47	1.017
7.	In the last three years, the organization's audited accounts have shown high ROA	154	1	5	3.15	0.975
8.	In the last three years, the organization's audited accounts have shown high ROE	154	1	5	3.16	0.887
9.	The organization finances most of its operations from revenue collected	154	1	5	4.16	0.852
10.	In the last five years, the geographical area served by the organization has expanded significantly	154	1	5	3.82	0.896
11.	The organization is able to finance its capital expenditures without taking loans	154	1	5	3.09	1.157
12.	In the last five years, the organization's employee base has increased	154	1	5	3.47	1.024
13.	In the last five years, the organization has acquired latest equipment and technology	154	1	5	3.25	1.056
14.	The organization's latest equipment and technology has greatly helped improve its customer service	154	1	5	3.35	1.013
15.	In the last five years, the organization's research funds have been increasing over time	154	1	5	2.90	1.074
16.	In the last five years, the organization has diversified and expanded its water supply sources	154	1	5	3.42	0.995
17.	In the last three years, the organization has diversified its water products and uses	154	1	5	3.21	1.095

Source: Field Data (2025)

As shown in Table 4.13, all the 154 respondents reacted to the statements of measurement under that variable. Over 50% (9 out of 17) of the measured aspects yielded moderate or neutral reactions from the respondents thus presenting mean values between 2.9 to 3.36 out of 5. This meant that most of the respondents did not agree with those statements. Further, respondents reacted to all perspectives of the balanced scorecard in a consistent pattern meaning that the performance of water service providers in the Lower-Eastern Kenya when considered under all four perspectives of the balanced scorecard was not inspiring.

The nine statements that respondents virtually disagreed with were first that, in the last five years, customer feedback has been positive and are satisfied with the organization's services (mean 3.36 SD 0.906). This implied that overall, respondents were not convinced that customers were satisfied with the services offered by their organizations. Thus, measured under customer service perspective, water service providers were underperforming.

The next statement was on financial perspective and it stated that, in the last five years the organization has been making good profits (mean 3.07, SD 1.109). Under that perspective, respondents were also not certain that water service providers performed well. This was reconfirmed by the results of the next three statements. The first one averred that, in the last three years, the organization's audited accounts have shown high ROA (mean 3.15, SD 0.975) and the second one that, in the last three years, the organization's audited accounts have shown high ROE (mean 3.16. SD 0.887). The third one was that, the organization is able to finance its capital expenditures without taking loans (mean 3.09, SD 1.157). The statistics of those four statements strongly indicated that majority of the water service providers were struggling financially.

The reaction of the respondents regarding the profitability ratios of their organizations were found to be reliable as this outcome was corroborated by the results of the analysis of the secondary data collected from the audited accounts of those organizations which was available to the general public. Secondary financial data as summarized in Appendix L revealed that for the last five years starting 2020 till 2024, profitability or financial surpluses of all the organizations had declined considerably. Specifically, the published accounts for the organizations showed that they all made losses in 2023 and 2024 while in years 2020 to 2022 a few of those entities had made some little profits.

With regard to internal capabilities measured under the perspective of internal processes of the firm, the first statement was that, in the last five years, the organization has acquired latest equipment and technology (mean 3.25, SD 1.056). The second one was that, the organization's latest equipment and technology has greatly helped improve its customer service (mean 3.35, and SD 1.013). The low mean value on the two statements indicated that the majority of the respondents did not consider their organization as well equipped to enhance customer service level through their internal processes. To test the fourth perspective of the firm being learning and growth, two statements that generated low mean values indicated by the neutral reactions from the respondents were that, the organization's research funds have been increasing over time (mean 2.90, SD 1.074) and secondly that, in the last three years, the organization has diversified its water products and uses (mean 3.21 SD 1.095). Without proper financing for research and development functions, an organization would lack creativity and innovation leading to poor performance. Further, it is evidenced by the outcome of the second statement that majority of water service providers in the region of study have not diversified their water uses to include bottled water and supply of water targeting livestock and crop agriculture.

It was evident from the results of the above nine statements that water service providers in the Lower-Eastern Kenya have not done very well in the last three to five years with respect to customer service, financial stability, research and technological advancement and diversification. Furthermore, these organisations have not progressed much in terms of creativity and innovation since there has been little diversity of water products and uses in the last three years.

The first of the 8 statements that respondents reacted positively addressed customers service and it stated that, customer complaints have reduced in the last five years (mean 3.59, SD 0.933). The second one was on customer turnover and the statement was that, in the last five years, the number of customers in the organization has increased (mean 4.08, SD 0.921). The third one was on expansion of the market and it asserted that, in the last five years, more customers have been connected as planned (mean 3.86, SD 0.871). The results of the statistical analysis of the responses on those three statements indicated growth of customer base. However, considering the monopolistic business environment in which water service providers operate in, increase in customer base is not a direct indicator of customer satisfaction but directly indicated a possibility of growth in revenue. This is confirmed by the results of next two statements the first being that, in the last five years, revenue collected by the organization has increased (mean 3.47 SD 1.017). The second one stated that, the organization finances most of its operations from revenue collected (mean 4.16 SD 0.852). Nevertheless, the statement on revenue collected returned marginal agreement with a significant variance (mean 3.47 SD 1.017). Respondents were realistic in returning that verdict because the analysed secondary data on financial performance of those organizations showed that the revenue increase was marginal since 2020. Some of the organizations showed reduced revenue collected over the five years while to others, the revenue collected had stagnated.

Growth of customer base and expansion of geographical coverage and growth in staff numbers was demonstrated by the results of the last two statements with positive reactions from the respondents. The first was that, in the last five years, the geographical area served by the organization has expanded significantly (mean 3.82, SD 0.896). Secondly, in the last five years, the organization's employee base has increased (mean 3.47 SD 1.024). This was an indication that water service providers endeavored to match the number of staff per customer or connected points. This was a good sign that water service providers had strategies in place for sustainable customer service.

The final statement with positive results was that, the organization has diversified and expanded its water supply sources (mean 3.42 SD 0.995). Although the results were moderately positive, this was a good indication that water service providers were taking steps to improve their water sources so as to meet rising demand for water.

4.6 Diagnostic Tests

Diagnostic tests aim at determining if the data collected through the research testing instrument are adequate in terms of quality and quantity within limits of assumptions made and that they facilitate addressing of the problem at hand based on the hypotheses set out in the study. The data collected should also be fit for statistical modelling and interpretation (Mbithi, 2024). Four diagnostic tests were conducted to confirm the robustness of the data collected pertaining to the four independent variables upon which the regression models for this study were anchored. These were - the normality tests; the autocorrelation; heteroscedasticity; and multicollinearity tests. These are discussed in more detail below.

4.1.22 Normality Tests

As indicated in chapter three of this study, normality test was conducted on each variable of the study to establish whether observations made by the respondents had normal distribution property with little skewness or kurtosis. Skewness reveals lack of symmetry in the distribution curve of the data. This arises when the mean of the observations is far to the right or to the left of the median of those observations. When the mean is on the right side of the centre of the observations then the data is positively skewed which means that there are few observations that have very high positive values. On the other hand, when the distribution curve slopes too much to the left it means the data is negatively skewed because there are few observations in the data collected that have heavy negative weights. Kurtosis is the property of the distribution curve having lumpiness or peakedness instead of being a smooth curve. Perfectly normal data has zero skewness and a maximum of three (3) measures of Kurtosis (Mbithi, 2024). This is consistent with Jarque-Bera (J-B) formula:

$J-B = n\{(S^2/6) + (K-3)^2/24\}$ where S represents Skewness and K is for Kurtosis (Cameron, 2005). With $K=3$ and $S=0$ applied in the formula then $J-B = 0$. This means there is no skewness and no Kurtosis in the data hence resulting in perfect normality. Such a situation is ideal and does not occur in real life studies where samples instead of the universe are used for data collection. In normal studies, perfect normality of data might not arise mainly due to sampling errors and factors emanating from instrumentation problems.

The importance of establishing that the data collected contained little or no Kurtosis or skewness is the assurance that when Testing a Null Hypothesis of the study, correct values of F or t tests statistics will be obtained at the presumed significance levels of 0.05 or 0.01 depending on the level of confidence required. Commonly, the p-value of 0.05 is used. For this study, the

Kolmogorov-Smirnoff and Shapiro-Wilk tests were the two options to evaluate normality of the data collected. These were considered as suitable non-parametric tests since the data was collected from a sample and not the entire population. However, considering the effective sample for this study based on the number of respondents who returned the questionnaire was 154, Kolmogorov-Smirnov (K-S) normality test results were considered more realistic as the sample size was larger than 50. On the other hand, Shapiro-Wilk normality is considered more appropriate for smaller samples of a size below 50. Nevertheless, cautions have been cited by various researchers that, whereas Kolmogorov-Smirnov is the most popular tests for normality it is less robust and less powerful compared to Shapiro-Wilk (Mbithi, 2024; Kihara, 2016). The results of Kolmogorov-Smirnov statistics arising from the respective variables of the study are shown in Table 4.14.

Table 4.14

Results of Normality Tests

	Tests of Normality					
	Kolmogorov-Smirnov^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Performance (Y)	.053	153	.200*	.991	153	.499
Environmental Scanning (X ₁)	.094	153	.002	.982	153	.051
Strategy Formulation (X ₂)	.094	153	.003	.976	153	.012
Strategy Implementation (X ₃)	.066	153	.200*	.991	153	.456
Strategy Control (X ₄)	.055	153	.200*	.984	153	.088
Water Demand (Z)	.058	153	.200*	.988	153	.228

*, This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Field Data (2025)

Although Table 4.19 exhibits both the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk normality tests results, for reasons stated earlier, normality test for this study was assessed on the basis of values of Kolmogorov-Smirnov. The Null Hypothesis that was being tested was:

H_0 : The data was normally distributed. This Null Hypothesis to be rejected if p-value is less than 0.05. As guided by Mugenda and Mugenda (2003) this can be put differently and probably more clearly that, H_0 : The data collected using the sample was not significantly different from normal distribution. Accordingly, the Alternative Hypothesis was: -

H_a : The data was not normally distributed.

The decision rule regarding these outcomes was that if the significance or p-values obtained were found to be less than 0.05 then, the Null Hypothesis was rejected and the alternative Hypothesis H_a accepted. On the other hand, if p-value was greater than 0.05 you fail to reject the Null Hypothesis.

From Table 4.14 and on the basis of Kolmogorov-Smirnov test it was established that, first the significance values obtained for the variables were varied. Secondly, the significance values of the dependent Y, independent variables X_3 and X_4 and moderating variable Z were 0.200; they were thus above the critical p-value at $\alpha=0.05$). Thirdly, the significance (p-values) of the independent variables X_1 and X_2 were below the critical significance value of $\alpha = 0.05$.

From the foregoing, it was concluded that, based on the Kolmogorov-Smirnov normality test of the data of the dependent variable Y and the independent variables X_3 and X_4 for which the p-values of 0.200 were greater than the critical value, you fail to reject the Null Hypothesis. This therefore revealed that the sample distribution was normal. On the other hand, the sample distributions being compared under independent variable X_1 and X_2 significantly deviated from

normally distributed for both cases. Therefore, for these two variables the Null Hypotheses were rejected and the Alternative Hypotheses adopted. Finally, it was also observed that the significance (p-value) for the moderating variable Z was 0.200 which was more than the critical p-value at $\alpha=0.05$. Consequently, with respect to the data of the moderating variable, we fail to reject the Null Hypothesis H_0 that the data was not significantly different from normal distribution.

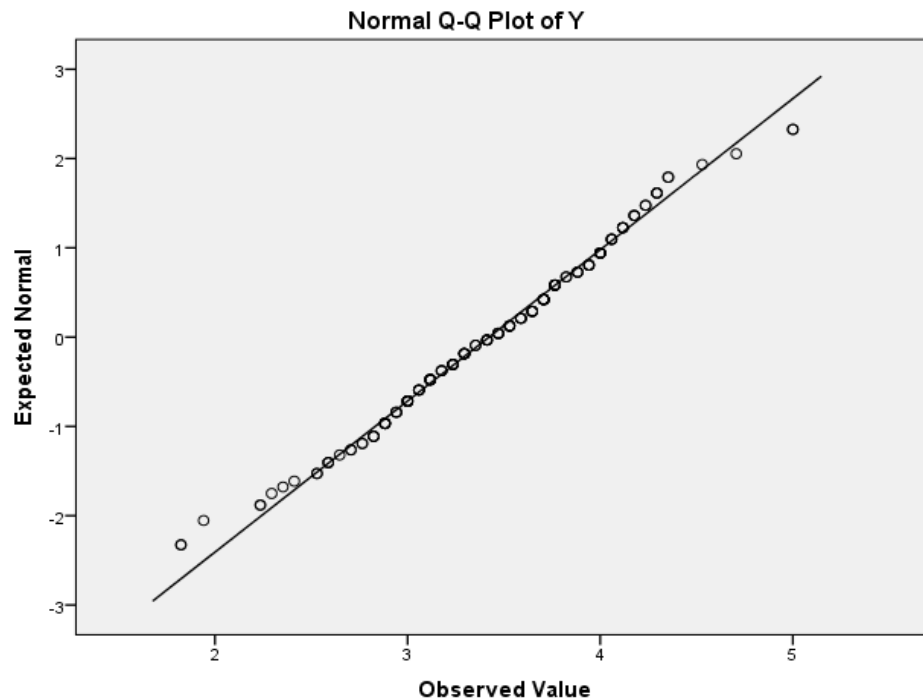
It is noted for comparison of the two tests that if the researcher chose Shapiro-Wilk test as the favourable one, then the only variable whose data would be considered as deviating from normal distribution would have been X_2 and marginally X_3 . Thus, applying the Null hypothesis that H_0 : the sample data was normally distributed would have led to type II error for X_3 under Shapiro Wilk test. That is failure to reject the Null Hypothesis when it should be rejected.

Further and more detailed revelations of the above results were done through pictorial exhibitions using the Q-Q (Quantile-Quantile) and Box and Whisker plots for each variable. Presentation of results in graphical and pictorial plots provided an easier way to visualise the direction that the asymmetrical data was skewed. This was to confirm if the skewness was positive to the right or negative to the left. These presentations are displayed below:

4.6.1.1 : Q-Q Plots for Dependent Variable (Y) - Performance

Figure 4.6

The Q-Q Plot for Performance

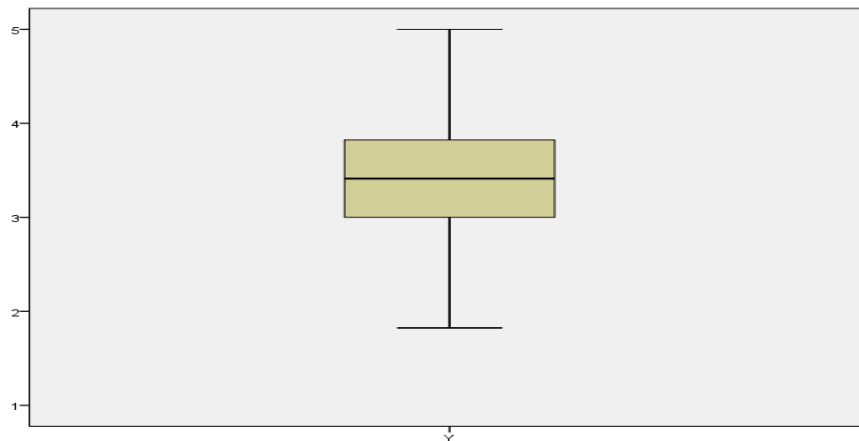


Source: Author (2025)

On the dependent variable performance (Y), the above Q-Q Plot showed some deviations of the observations from the expected normal particularly at both ends of the graph. This meant that some respondents provided observations that were outside the normal characteristics of the sample taken. These were therefore outliers with respect to the dependent variable Y. Nevertheless, most respondents provided data that generated a fairly normal curve without any pronounced skewness as was demonstrated by the Box Plot below.

Figure 4.7:

Box Plot for Performance



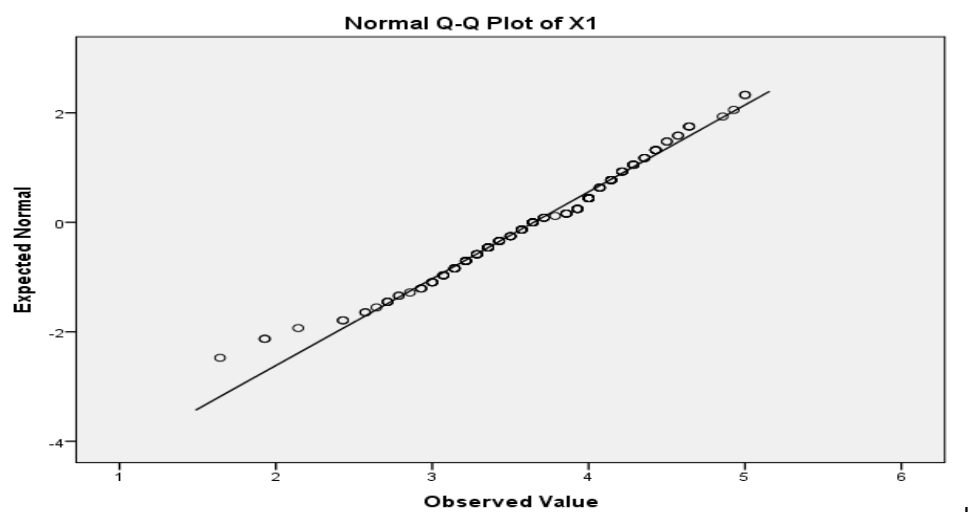
Source: Author (2025)

The above Box Plot of performance showed near normal results. The mean of the data collected was very close to the centre or the median and the variable had a normal distribution, $P > 0.05$.

4.6.1.2: Q-Q Plot for Environmental Scanning

Figure 4.8:

Q-Q Plot for Environmental Scanning

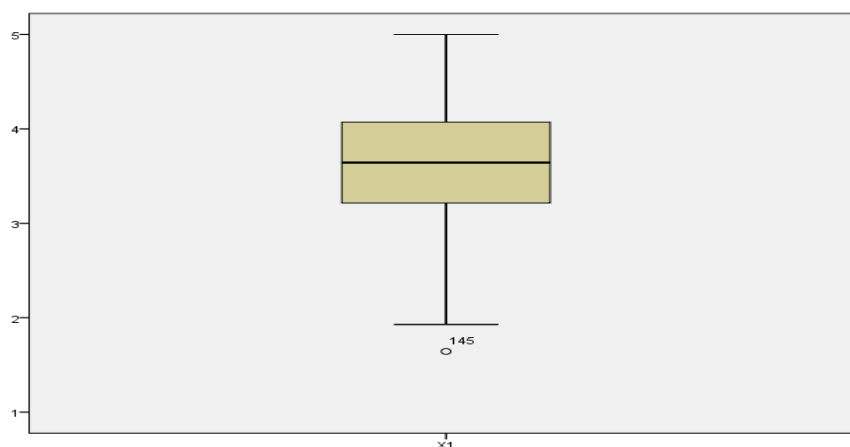


Source: Author (2025)

Figure 4.8 was the Q-Q Plot of the first independent variable X_1 and it showed a deviation from normal distribution particularly on the extreme negative side of the data. This meant that some respondents within the sample reacted abnormally compared to the others in the sample. Those respondents provided data that skewed the normal curve negatively. This was found to be consistent with the results of Kolmogorov-Smirnov (K-S) test results discussed above. The outliers were spotted on the Q-Q Plot but the specific respondent whose data was the most extreme was reflected on the Box Plot in Figure 4.9.

Figure 4.9:

The Box Plot for Environmental Scanning



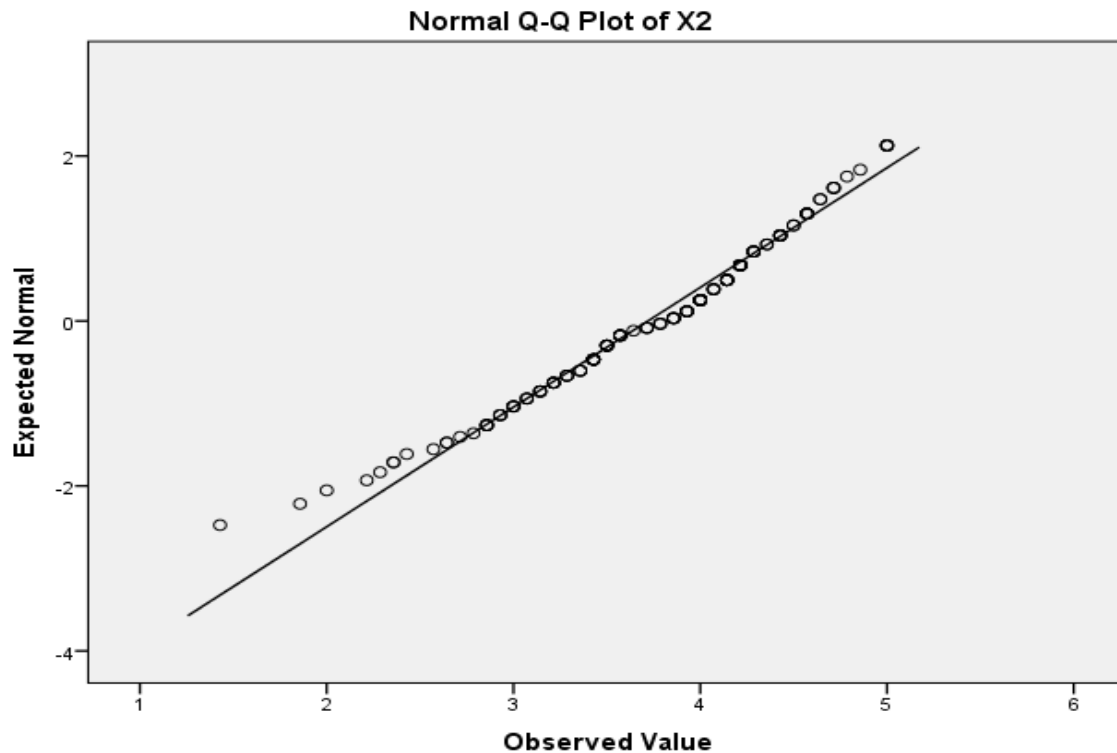
Source: Author (2025)

In summary, the Q-Q and Box plots of the first independent variable X_1 (Environmental Scanning) showed a deviation from normal distribution arose and was particularly inclined to the extreme negative side of the data. This is demonstrated pictorially by the Box Plot (Figure 4.14) that shows that the lower Whisker is longer than the top Whisker. Therefore, data collected for variable X_1 was negatively skewed which meant that quite a number of the respondents very strongly disagreed with the statements in the questionnaire.

4.6.1.3: Plots for Strategy Formulation

Figure 4.10

The Q-Q Plot for Strategy Formulation

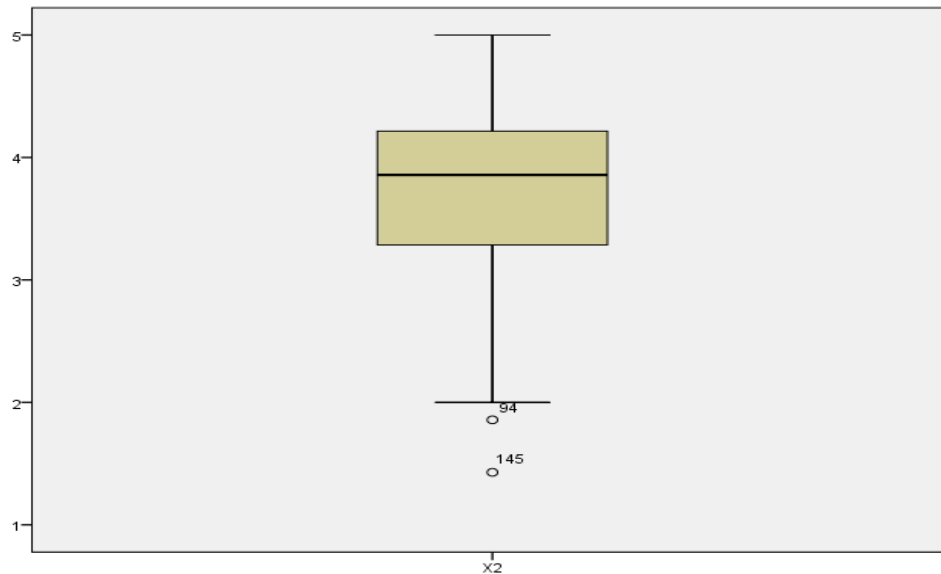


Source: Author (2025)

Similar to the independent variable X_1 , the Q-Q and Box plots of the second independent variable X_2 (Strategy formulation) showed a deviation from normal distribution also on the extreme negative side of the plot. The data for variable X_2 was therefore negatively skewed with quite a number of outliers appearing on the Q-Q Plot (Figure 4-10). The two specific extreme outliers are indicated on the above Box Plot (Figure 4.11).

Figure 4.11:

Box Plot for Strategy Formulation



Source: Author (2025)

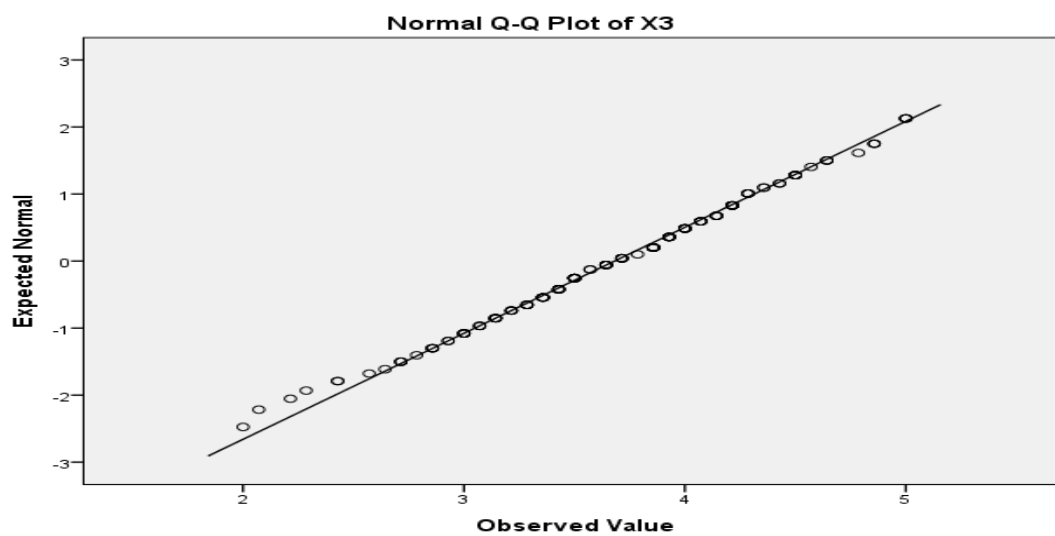
In summary, the Q-Q and Box plots of the second independent variable X_2 (Strategy formulation) showed a deviation from normal distribution more specifically inclined to the extreme negative side of the data. This is clear from the Box Plot (Figure 4.11) where it is observed that the Whiskers have different lengths. The collected data for variable X_2 was therefore negatively skewed which meant that quite a number of the respondents very strongly disagreed with the statements in the questionnaire regarding strategy formulation. Notably, one of the two extreme outliers appears on both variable X_1 and X_2 . That extreme outlier could have been either extremely honest or provided responses when driven by satisficing or social desirability attitude.

4.6.1.4 Plots for Strategy Implementation

Strategy implementation was the third independent variable. The results of the normality test for this variable are discussed below:

Figure 4.12:

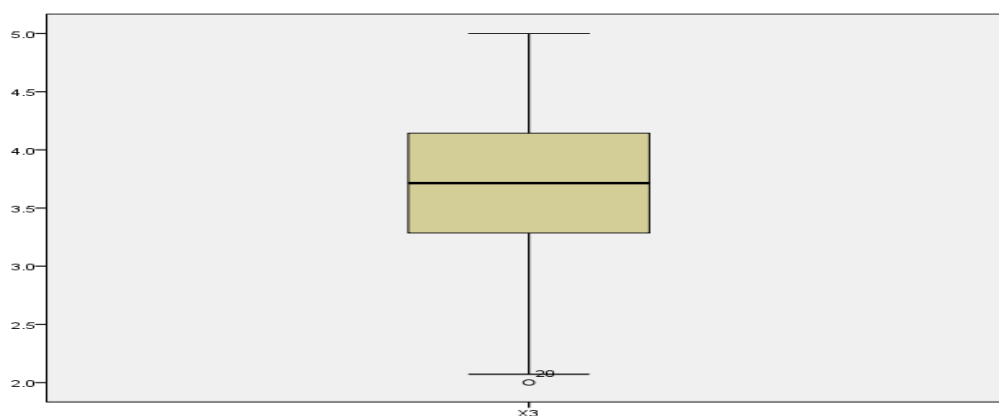
Q-Q Plot for Strategy Implementation



Source: Author (2025)

Figure 4.13:

Box Plot for Strategy Implementation



Source: Author (2025)

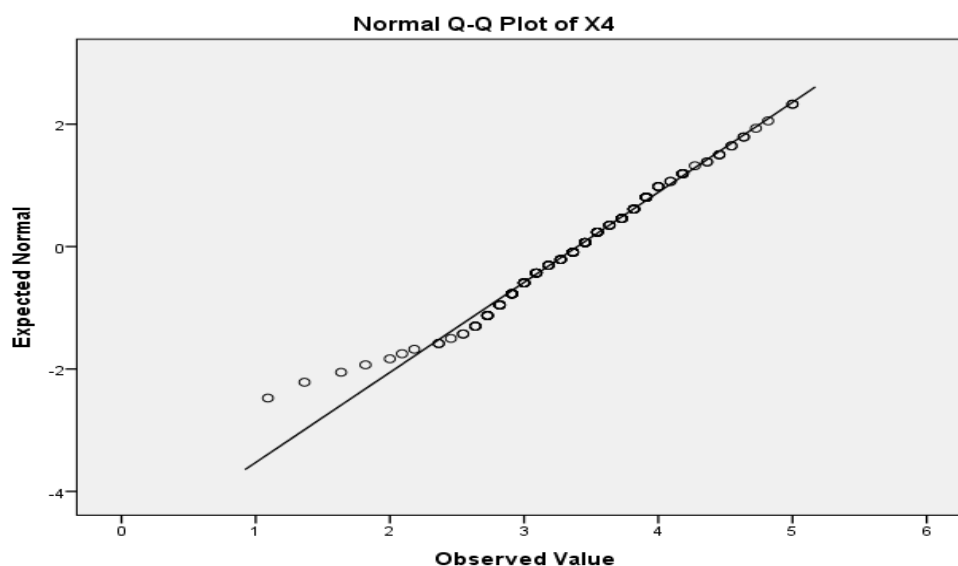
The above Q-Q and Box plots of the third independent variable X_3 showed a slight deviation from normal distribution due to a few negative and positive outliers as appearing on the QQ Plot. On the Box Plot, one outlier was strongly pronounced on the negative side resulting in the data for variable X_3 being slightly negatively skewed. Nevertheless, data collected on X_3 was generally normally distributed despite a few respondents showing strong agreement and others strong disagreement with the statements of the questionnaire on this variable. Both negative and positive data tended to cancel out each other resulting in a near normal distribution with very little skewness. This was consistent with the results of Kolmogorov-Smirnov (K-S) test results discussed earlier.

4.6.1.4: Plots for Strategy Control

The normality analysis for the fourth independent variable X_4 (Strategy Control) are exhibited in Figure 4.14:

Figure 4.14

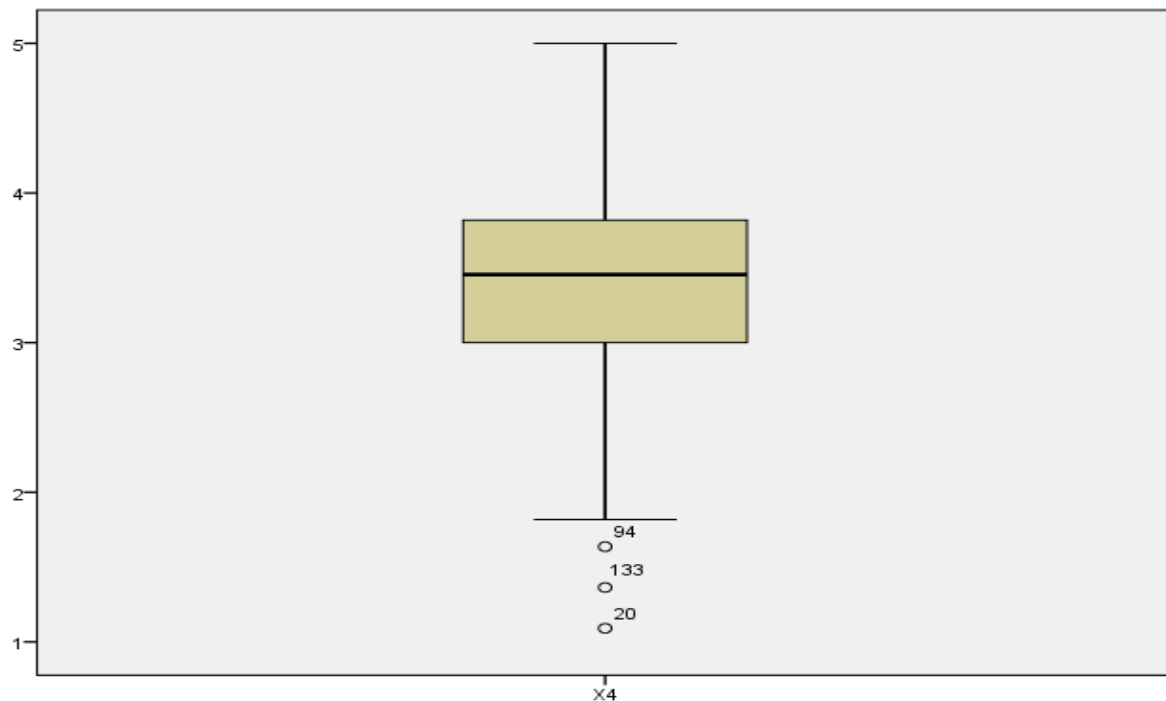
Q-Q Plot for Strategy Control



Source: Author (2025)

Figure 4.15

Box Plot for Strategy Control



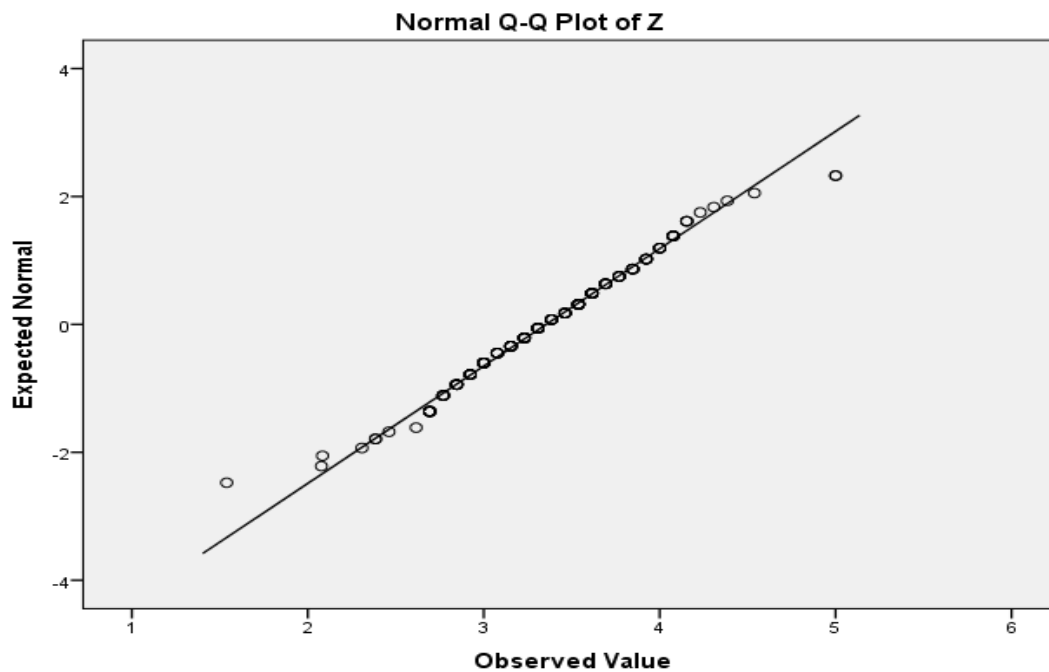
Source: Author (2025)

The Q-Q and Box plots of the fourth independent variable X4 showed a slight deviation from normal distribution due to a few negative outliers appearing on the Q-Q Plot. The Box Plot shows three pronounced outliers who had strongly disagreed with the statements of the questionnaire under this variable. That contributed to the data for variable X4 being slightly negatively skewed. Nevertheless, as shown on the Box Plot, overall the collected data was fairly normal as the Whiskers of the Box Plot were found to be almost equal on either side. The exhibits from the Box Plot and the of Kolmogorov-Smirnov (K-S) test results for this variable are consistent.

4.6.1.5: Plots for Water Demand (Moderating Variable)

Figure 4.16

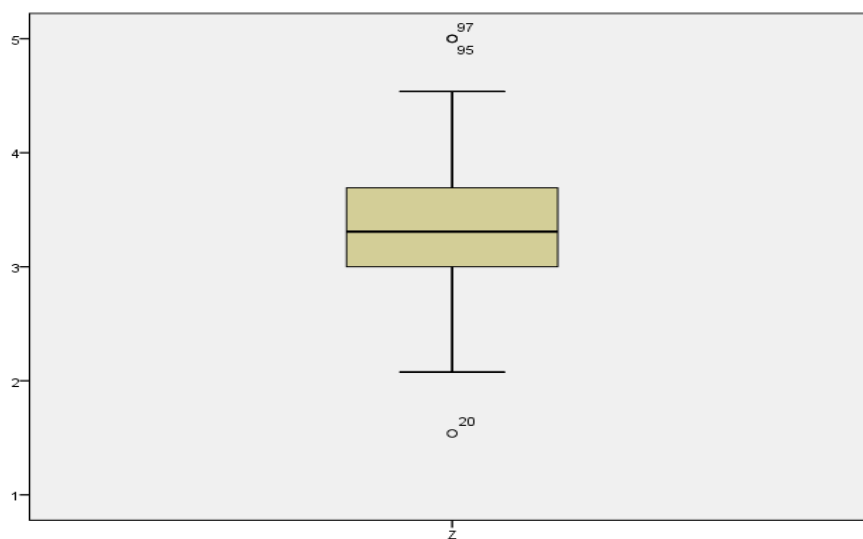
Q-Q Plot for Water Demand



Source: Author (2025)

Figure 4.17

Box Plot for Water Demand



Source: Author (2025)

The Q-Q and Box plots of the moderating variable Z (Figure 4.16 and Figure 4.17 respectively) showed a slight deviation from normal distribution due to a few outliers on both negative and positive side as appears on the Q-Q Plot. Of those outliers, two appeared strongly positive while one was strongly negative. The effect of both positive and negative responses seemed to have cancelled out each other. Consequently, the data for the moderating variable was near normal but slightly positively skewed.

4.6.2 Multicollinearity Tests

The importance of testing for multicollinearity was introduced in chapter three of this study. It was noted that multicollinearity arises when the independent variables acting together concurrently influence the dependent variable in a certain direction. But, when a perfect multicollinearity situation is encountered, it becomes difficult to identify which independent variable acting on its own influenced the dependent variable and to what extent. In this regard, Newbold (1995) observed that, in a multiple regression equation involving several independent variables, multicollinearity problem is encountered if strong intercorrelation existed between those variables. Groebner et al. (2024) concur with this observation and note that a high correlation between any two independent variables in a multiple regression model can contribute useless and conflicting information to the model and adversely sway the regression results. Accordingly, multicollinearity test was conducted to establish whether there were multiple linear relationships among the independent variables which could affect the results of the regression analyses and distort the conclusions made upon testing of each hypothesis of the study.

The results of multicollinearity analysis for this study were based on Variance Inflation Factor (VIF) statistics for the independent variables. As explained by Groebner (2024), Variance

Inflation Factor (VIF) is a measure of how much the variance of the estimated regression coefficient increases if the independent variables are correlated. The greater the multicollinearity the bigger the VIF value. Consequently, a VIF value of 1.0 for a given independent variable means that the variable is not correlated with the other variables in a multiple regression model. On the other hand, a VIF of 10 and above means the independent variable is highly correlated with the remaining independent variables in the model. This is clarified by using the formula for computing the corresponding VIF values: $VIF = 1/(1-R_j^2)$, where R_j^2 is the coefficient of determination when the independent variable in question is regressed against the remaining independent variables in the model (Groebner, 2024). Therefore, if R_j^2 is zero, meaning there was totally no correlation, VIF is 1.0. On the other hand, if there was substantial correlation between that variable and the others in the model say R_j^2 of 0.9 then the VIF would have a value of 10 and so on.

Another lens used for viewing existence of multicollinearity is that of tolerance factor. The tolerance factor represents the proportion of the correlation contributed by other factors including random error other than the variable that is being considered in the model. The results of multicollinearity test for this study were as shown in Table 4.20.

Table 4.15

Variance Inflation Factor - All Variables

Model		Collinearity Statistics	
		Tolerance	VIF
(Constant)			
1	Environmental Scanning (X ₁)	0.652	1.533
	Strategy Formulation (X ₂)	0.377	2.650
	Strategy Implementation (X ₃)	0.241	4.148
	Strategy Control (X ₄)	0.340	2.938

Source: Author (2025)

Multicollinearity among variables is considered to exist when the value of VIF is 10 or the value of tolerance is 0.1 (Mbithi, 2024). This view is also shared by Laiboni et al. (2022). Table 4.15 shows that all VIF values with respect to each independent variable ranged between 1.533 and 4.148. As these VIF values were way below 10 it was concluded that there was very low multicollinearity among all the independent variables. On the other hand, the tolerance values ranged from 0.241 for X3 to 0.652 for variable X1. The tolerance values for all independent variables were all above the critical value of 0.1. This implied that, not all the variations in the model where one variable regresses against the other three were as a result of any of the variables by itself. Thus from Table 4.15 the tolerance value of 0.652 for variable X1 suggested that 65.2% of VIF for X1 arose from other unexplained factors and not from its relationship with the other three variables. Similarly, 24.1% VIF for variable X3 was contributed by other unexplained factors meaning there did not exist total collinearity between variable X3 with the other three in the model.

4.6.3 Auto-Correlation tests

Collection of data for this study started in mid-February and completed at the end of March 2025. Respondents were from ten (10) water service providers in the Lower-Eastern Counties of Kenya. This was therefore cross-sectional data since it was collected at one point in time across many similar organisations. This is unlike longitudinal or time series data that is collected from one organisation over a period of time. Cross-sectional data does not have strong auto-correlation effect because it is not influenced by time related environmental factors. However, auto-correlation could also arise from variables riding on each other and this cannot be discounted without testing. The absence of this kind of auto-correlation in this study was confirmed by the results of Durbin-Watson test as shown in Table 4.16.

Table 4.16*Durbin-Watson Test - Autocorrelation*

Model	R	R Squared	Adjusted R Squared	Std. Error of the Estimate	Durbin-Watson
1	.628 ^a	.394	.377	.46614	1.721

a. Predictors: (Constant), X₁, X₂, X₃, X₄.

b. Dependent Variable: Y

Source: Author (2025)

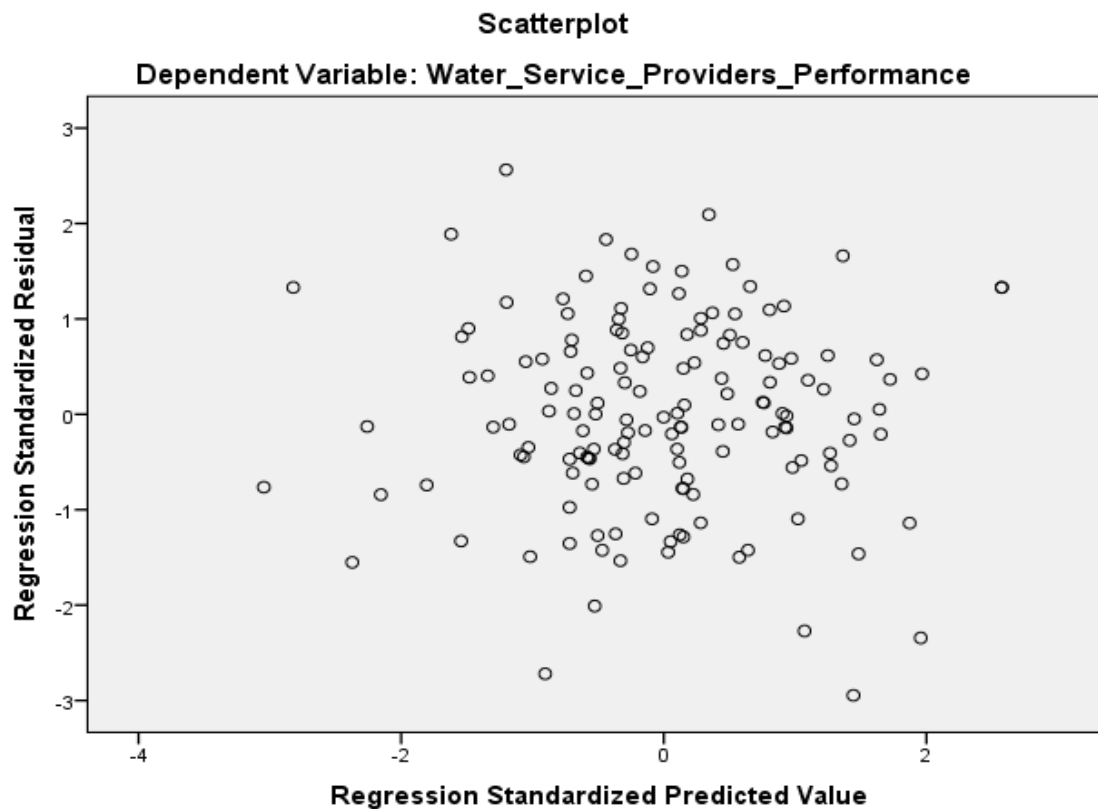
The outcome of Durbin-Watson test as indicated on Table 4.16 showed that the data suffered just slight autocorrelation with a D-value of 1.721. Durbin-Watson statistics values range from 0 to 4 such that, when there is no autocorrelation the value is closer to 2 on either side. When there is positive autocorrelation the value is away from 2 and closer to 0. On the other hand, when there is negative autocorrelation the value moves away from 2 and closer to 4. As the D-value for this study was between 0 and 2, i.e. 1.721 it indicated a slight positive autocorrelation. The data was therefore centered around the mean to reduce the effect.

4.6.4 Test for Homoscedasticity

The main assumption in testing homoscedasticity is that the residual values do not increase with increasing values of each independent variable. Thus, the values of the independent variables do not affect the residual values. Homoscedasticity for this study was tested using scatterplot generated by SPSS alongside multiple linear regression analysis. The scatterplot was generated by plotting the standardized predicted values in X-axis against the standardized regression residuals in Y-axis and the results were as presented in Figure 4.18.

Figure 4.18

Results of Homoscedasticity Test

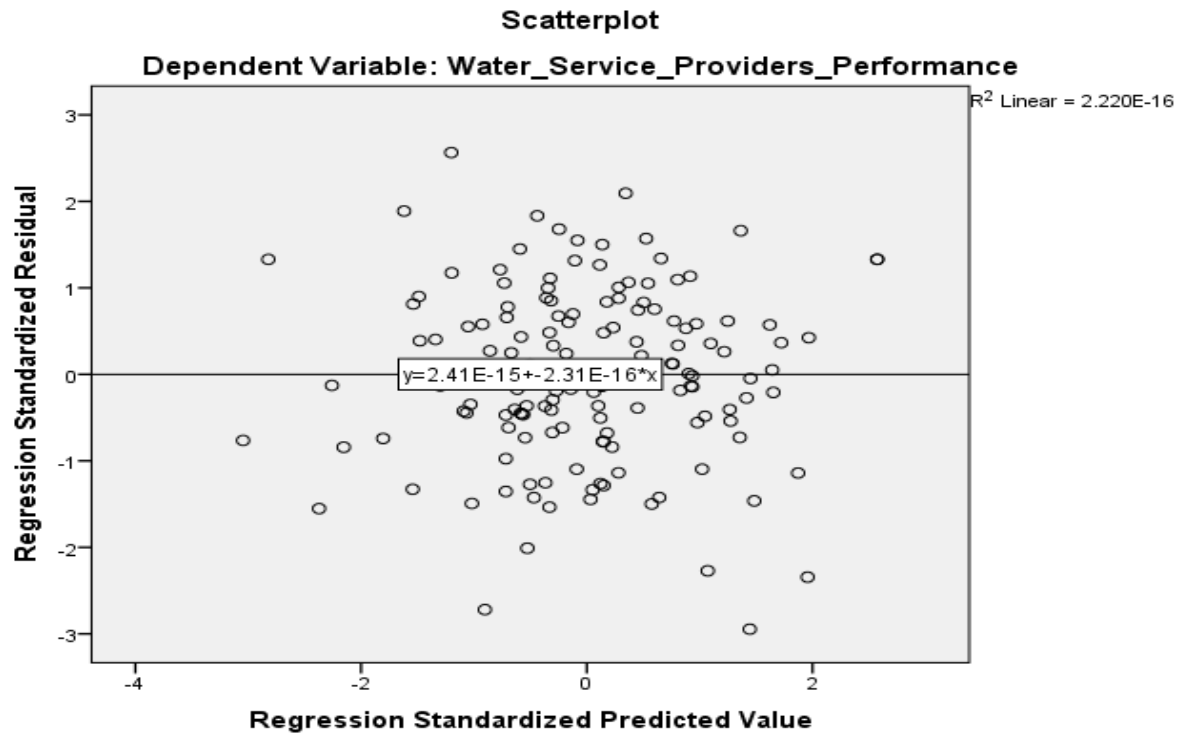


Source: Author (2025)

In order to determine whether the study data suffered from heteroscedasticity, it was necessary to establish whether there was a prevailing pattern present in the scatterplot. The scatterplot exhibited in Figure 4.18 that arose from the performance of water service providers versus strategic management practices did not have an observable pattern present. The results of the scatterplot therefore showed absence of heteroscedasticity in the data which lead to a conclusion that the data collected for analysis in this study showed evidence of homoscedasticity. To further ascertain that heteroscedasticity was absent, a line was fitted in the scatterplot as shown in Figure 4.19.

Figure 4.19

Test for Homoscedasticity: Scatterplot Predicted Linear Line



Source: Author (2025)

The observations made after inserting the linear line in the scatterplot was that there was no prevailing pattern and the values scattered along the linear line and did not deviate much from the linear line. This led to the conclusion that the data had homoscedasticity properties and no heteroscedasticity. Further, this meant that sampling errors were random and were not in any way correlated to the values of each individual independent variable. This can be likened to a large gathering in arena without a predetermined seating arrangement. In such a scenario, the individuals in the gathering would be scattered randomly around the centre of the action since they were not initially ordered to a specific standing pattern. Absence of heteroscedasticity in this study meant that the variations of the dependent variable Y were purely influenced by the variations of the individual independent variables X_i acting singly or in combination and those variations were not affected by the sampling error. That being the case then, the results of the

hypothesis tests based on the data collected and statistically analyzed were reliable and conclusive.

4.7 Bivariate Correlation Analysis

After establishing that there was minimum effect of multicollinearity and autocorrelation among the independent variables of the study, bivariate linear correlation was then conducted to test the strength of linear relationships between each independent variables (X_i) acting individually on the dependent variable (Y). Additionally, the extent of association of the moderating variable (Z) with the dependent variable was tested. The value of Pearson correlation coefficient (r) was used to determine the level of association between the variables.

Many researchers and statisticians have guided on the Pearson correlation coefficient (r) values based on which the strength of correlation would be judged. Accordingly, King'oriah (2011) considered a value of (r) greater than 0.700 relatively strong relationship between the independent and the dependent variables. Muriuki (2023) outlined the various levels of strengths of correlation coefficients (r) starting at a value of zero (0) when there is no correlation between the variables. Further, (r) values between 0.100 and 0.300 indicates weak correlation; values between 0.310 and 0.500 indicates moderate correlation, and those above 0.500 revealed fairly strong correlation while a value of ± 1.00 indicates perfectly strong correlation. The Pearson Correlation Coefficient (r) for all variables are summarised in Table 4.17.

Table 4.17*Bivariate Linear Correlation - All Variables*

		Performance	Environmenta l Scanning	Strategy Formulation	Strategy Implementation	Strategy Control	Water Demand
Performance (Y)	Pearson	1					
	Correlation						
	Sig. (2-tailed)						
Environmental Scanning (X ₁)	N	154					
	Pearson	.503**	1				
	Correlation						
Strategy formulation (X ₂)	Sig. (2-tailed)	.000					
	N	154	154				
	Pearson	.426**	.563**	1			
Strategy Implementation (X ₃)	Correlation						
	Sig. (2-tailed)	.000	.000				
	N	154	154	154			
Strategy Control (X ₄)	Pearson	.526**	.533**	.773**	1		
	Correlation						
	Sig. (2-tailed)	.000	.000	.000			
Water Demand (Z)	N	154	154	154	154		
	Pearson	.554**	.497**	.646**	.807**	1	
	Correlation						
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	154	154	154	154	154	
	Pearson	.647**	.418**	.345**	.508**	.583**	1
	Correlation						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

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

Source: Author (2025)

Table 4.17 shows that the Pearson Correlation Coefficient (r) for all variables and the dependent variable (Y) were positive and significant with values ranging between 0.426, $P < 0.001$ and 0.647, $P < 0.001$. This was an indication of moderate to strong positive linear relationships between each independent variable and the dependent variable. Of the four independent variables, only strategy formulation (X_2) exhibited moderate correlation with performance (Y) while the other independent variables showed strong correlation with Y . Similarly, water demand (moderating variable Z) had a strong positive linear relationship with performance ($r = 0.647$, $P < 0.001$).

As explained in Section 4.6.2 multicollinearity becomes a problem if the Variance Inflation Factor (VIF) given by the formula $VIF = 1/(1-R_j^2)$, where R_j^2 is the coefficient of determination when the independent variable in question is regressed against the remaining independent variables in a combined model (Groebner, 2024) becomes 10 or more. Equally, with bivariate linear correlation, multicollinearity becomes a problem if the Pearson correlation coefficient value (r) is greater than 0.700. There were two variables with (r) value above 0.700 which would suggest that there was multicollinearity. However, in a combined relationship of variables shown in Table 4.15 all the variables returned a VIF below 5.00 and tolerance above 0.100. This rules out the presence of multicollinearity in this data.

4.8 Hypotheses Testing

Bivariate Regression Analysis was conducted to confirm the extent to which total variations in performance are explained by each independent variable in this study. This information is then used to confirm whether each independent variable significantly influenced performance (Y). Model validity was tested through the ANOVA table given in each regression output and the model is deemed valid by observing the F-Statistic and its corresponding P-value. If the P-value

of the F-statistic is below 0.05, then the model is valid for further analysis, otherwise, the model collapses. The output of bivariate regression was used to test the null hypotheses that were proposed in Chapter one of this study.

4.8.1 Test of Hypothesis One: Environmental Scanning on Performance of Water

Service Providers

Bivariate linear regression analysis was used to test the null hypothesis (H_{01}) which stated:

H_{01} “Environmental scanning has no significant influence on the performance of water service providers in Lower Eastern Counties, Kenya. The findings of this analysis are shown in Table 4.18:

Table 4.18

Bivariate Analysis - Environmental Scanning

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.503 ^a	.253	.248	.51322

a. Predictors: (Constant), X_1

ANOVA ^a						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	13.363	1	13.363	50.735	.000 ^b
	Residual	39.509	152	.263		
	Total	52.872	153			

a. Dependent Variable: Y

b. Predictors: (Constant), X_1

Coefficients ^a						
Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	1.707	.246		6.937	.000
	Environmental Scanning (X ₁)	.473	.066	.503	7.123	.000

Source: Author (2025)

In Table 4.18 it is observed that the unadjusted R^2 is 0.253 meaning that Environmental Scanning (independent variable X_1) alone explained 25.3% of the total variation in performance of water service providers. Conversely, 74.7% of the variation in performance was explained by factors exogenous to Environmental Scanning.

From the ANOVA table, the F-Statistic has a significance p-value of 0.000 which was far less than the p-value threshold of 0.05. The value of F-statistic for this variable is high at 50.735 since the regression contributed by the predictor (X_1) was 13.363 while that arising from unexplained or chance error was very little at 0.263. Thus $F = 13.363/0.263$ yielding a value of $F = 50.735$. In that case, the model is valid at $F_{(1, 152)} = 50.735$, $P < 0.001$ meaning that the model fits the data and environmental scanning is a good predictor of total variations in performance of water service providers. The Unstandardised Coefficients on Table 4.18 show a Regression Coefficient Beta (β) value of positive 0.473 at the significance level p was 0.000. This showed that performance of water service providers was positively correlated to environmental scanning.

On the basis of these findings, the Null Hypothesis H_{01} was rejected in favour of alternative hypothesis H_{a1} and the study concluded that environmental scanning has a positive and significant influence on performance of water service providers in the Lower-Eastern Kenya.

4.8.2 Test of Hypothesis Two: Strategy Formulation on Performance of Water Service Providers

Bivariate linear regression analysis was used to test the null hypothesis (H_{02}) which stated:

H_{02} “*Strategy formulation does not significantly influence performance of water service providers in Lower Eastern Counties, Kenya*”. The findings of this analysis are shown in

Table 4.19:

Table 4.19*Bivariate Analysis – Strategy Formulation*

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.426 ^a	.182	.176	.53700		
a. Predictors: (Constant), X ₂						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.603	1	9.603	33.302	.000 ^b
	Residual	43.255	152	.288		
	Total	52.858	153			
a. Dependent Variable: Y						
b. Predictors: (Constant), X ₂						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.077	.238		8.716	.000
	Strategy Formulation	.365	.063	.426	5.771	.000
a. Dependent Variable: Y						

Source: Author (2025)

In Table 4.19 it is observed that the unadjusted R² is 0.182 meaning that Strategy Formulation (independent variable X₂) alone explained 18.2% of the total variation in performance of water service providers. On the ANOVA table, the F-Statistic has a significance p-value of 0.000 which was far less than the p-value threshold of 0.05. The F-statistic, $F_{(1, 152)} = 33.302$, $P < 0.001$ indicates that the model fits the data and strategy formulation is a good predictor of total variations in performance of water service providers. The Unstandardised Coefficients on Table 4.19 show a Regression Coefficient Beta (β) value of positive 0.365 at the significance level p was 0.000. This shows that performance of water service providers was positively and

significantly influenced by strategy formulation. On the basis of these findings, the Null Hypothesis H_{02} was rejected in favour of alternative hypothesis H_{a2} and the study concluded that strategy formulation has a positive and significant influence on performance of water service providers in the Lower-Eastern Kenya.

4.8.3 Test of Hypothesis Three: Strategy Implementation on Performance of Water Service Providers

Bivariate linear regression analysis was used to test the Null Hypothesis (H_{03}) which stated: H_{03} “Strategy implementation has no significant influence on performance of water service providers in Lower Eastern Counties, Kenya”. The findings of this analysis are shown in Table 4.20:

Table 4.20

Bivariate Analysis – Strategy Implementation

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.526 ^a	.277	.272	.50370		
a. Predictors: (Constant), X ₃						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	Sig.	
1	Regression	14.769	1	14.769	58.213	
	Residual	38.564	152	.254	.000 ^b	
	Total	53.333	153			
a. Dependent Variable: Y						
b. Predictors: (Constant), X ₃						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.631	.240		6.793	.000
	Strategy Implementation	.491	.064	.526	7.630	.000

a. Dependent Variable: Y

In Table 4.20 it is observed that the unadjusted R^2 is 0.277 meaning that Strategy Implementation (independent variable X_3) alone explained 27.7% of the total variation in performance of water service providers. From the ANOVA table, the F-Statistic has a significance p-value of 0.000 which was far less than the p-value threshold of 0.05. The F-statistic, $F_{(1, 152)} = 58.213$, $P < 0.001$ indicates that the model fits the data and strategy implementation is a good predictor of total variations in performance of water service providers. The Unstandardised Coefficients on Table 4.20 show a Regression Coefficient Beta (β) value of positive 0.491 at the significance level p was 0.000. This shows that performance of water service providers was positively and significantly influenced by strategy implementation. On the basis of these findings, the Null Hypothesis H_{03} was rejected in favour of alternative hypothesis H_{a3} and the study concluded that strategy implementation has a positive and significant influence on performance of water service providers in the Lower-Eastern counties of Kenya.

4.8.4 Test of Hypothesis Four: Strategy Control on Performance of Water Service

Providers

Bivariate linear regression analysis was used to test the null hypothesis (H_{04}) which stated:

H_{04} “*Strategy control has no significant influence on performance of water service providers in Lower Eastern Counties, Kenya*”. The findings of this analysis are shown in Table 4.21:

Table 4.21*Bivariate Analysis – Strategy Control*

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.554 ^a	.307	.302	.49144		
a. Predictors: (Constant), X ₄						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.123	1	16.123	66.757	.000 ^b
	Residual	36.469	152	.242		
	Total	52.591	153			
a. Dependent Variable: Y						
b. Predictors: (Constant), X ₄						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.789	.205		8.738	.000
	Strategy Control	.483	.059	.554	8.171	.000
a. Dependent Variable: Y						

Source: Author (2025)

In Table 4.21 it is observed that the unadjusted R^2 is 0.307 meaning that Strategy Control (independent variable X₄) alone explained 30.7% of the total variation in performance of water service providers. On the ANOVA table, the F-Statistic has a significance p-value of 0.000 which was far less than the p-value threshold of 0.05. The F-statistic, $F_{(1, 152)} = 66.757$, $P < 0.001$ indicates that the model fits the data and strategy control is a good predictor of total variations in performance of water service providers. The Unstandardised Coefficients on Table 4.21 show a Regression Coefficient Beta (β) value of positive 0.483 at the significance level p was 0.000. This shows that performance of water service providers was positively and significantly

influenced by strategy control. On the basis of these findings, the Null Hypothesis H_{04} was rejected in favour of alternative hypothesis H_{a4} and the study concluded that strategy control has a positive and significant influence on performance of water service providers in the Lower-Eastern counties of Kenya.

4.9: Multiple Regression Analysis - All Variables

The model of multiple regression analysis was introduced in chapter three of this study. Multiple Linear Regression analysis in this study considered the simultaneous influence of all the four independent variables X_1 to X_4 and took into account the statistical (sampling) error but excluding the moderator. This model was expressed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

where Y was the dependent variable; β_0 was the constant; β_1 to β_4 were the regression coefficients showing the level of change influenced by each independent variable X_i to Y while X_1 to X_4 were the independent variables and ε was the statistical error arising from sampling.

The statistical analysis of this model yielded the results summarised in Table 4.22:

Table 4.22

Multiple Regression- Model Summary

Model	R	R Squared	Adjusted R Squared	Std. Error of the Estimate
1	.628 ^a	.394	.377	.46614
a. Predictors: (Constant), X_4 , X_1 , X_2 , X_3				
b. Dependent Variable: Y				

Source: Author (2025)

From Table 4.22, it was noted that only 39.4% of the variations of Y were explained by the combined influence of the four independent variables applied concurrently. Thus, strategic management practices contributed to 39.4% of the total variations of performance of water services providers.

Table 4.23

Multiple Regression – Model Validity

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.465	4	5.116	23.547	.000 ^b
	Residual	31.506	149	.217		
	Total	51.972	153			
a. Dependent Variable: Y						
b. Predictors: (Constant), X ₄ , X ₁ , X ₂ , X ₃						

Source: Author (2025)

Additionally, on Table 4.23 the Multiple Regression Model was valid at $F_{(4,149)}=23.547$, $p<0.001$ meaning that the four variables under consideration that is, Environmental Scanning; Strategy Formulation; Strategy Implementation and; Strategy Control acting together are good predictors of the total variations in performance of water service providers in Lower Eastern Counties in Kenya.

Table 4.24*Multiple Regression Weights*

Model	Coefficients ^a			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	1.061	.258		4.118	.000
1 Environmental Scanning (X ₁)	.290	.075	.309	3.863	.000
Strategy Formulation (X ₂)	-.048	.090	-.056	-.531	.596
Strategy Implementation (X ₃)	.176	.123	.188	1.431	.155
Strategy Control (X ₄)	.246	.096	.283	2.557	.012

a. Dependent Variable: Y

Source: Author (2025)

Table 4.24 shows the regression weights of the four independent variables (Environmental Scanning, Strategy Formulation, Strategy Implementation and Strategy Control) in this study working together in a combined relationship. The findings exhibited in the table indicate that only constant ($\beta_0 = 1.061$, $P < 0.001$), Environmental Scanning (X_1 , $\beta_1 = 0.290$, $P < 0.001$) and Strategy Control (X_4 , $\beta_4 = 0.246$, $P < 0.05$) were significant under combined relationship. On the other hand, the roles of X_2 and X_3 in a combined relationship were not significant since their p-values were more than 0.05. Thus, their individual roles had been taken over by Environmental Scanning (X_1) and Strategy Control (X_4). This practically meant that strategic management practices collectively had more influence on the performance of water service providers through environmental scanning (X_1) and strategy control (X_4) processes. If therefore organizations undertook environmental scanning and strategy control so well, they are likely to achieve superior performance because they will have created a solid foundation for effective strategy formulation and strategy implementation processes. Consequently, organisations can gain competitive advantage and better performance if they invested in building dynamic capabilities

that support environmental scanning and strategy control activities in order to response to the unpredictable operating environment. This is on consideration that demand for water is usually unstable as it varies depending on climatic changes as well as customer needs that vary from region to region, level of affluence, and their economic occupation such as agriculture and manufacturing.

4.9 Moderation Analysis

The effect of the moderator was considered in three hierarchical ways as shown in Chapter three where we have three models. The first model has no moderator in it and stated as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

where Y was the dependent variable; β_0 was the constant; β_1 to β_4 were the regression coefficients showing the level of change influenced to Y by each independent variable X_i (excluding the Moderator); X_1 to X_4 were the independent variables.

The second model introduces moderator as an independent variable as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_i Z_j + \varepsilon$$

Where $\beta_i Z_j$ is the moderator as an independent variable. The third model introduces the interaction terms as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_i Z_j + \beta_{ij} X_i Z_j + \varepsilon$$

Where $X_i Z_j$ are the interaction terms while B_{ij} is the coefficient of the interaction term. The results of these three multiple regression analyses containing the moderating variable are summarized in Tables 4.25, 4.26 and 4.27:

Table 4.25*Moderated Multiple Regression – Model Summary*

Model	R	R Squared	Adjusted R Squared	Std. Error of the Estimate	R Squared Change	Change Statistics			
						F	df1	df2	Sig. F Change
1	.625 ^a	.390	.373	.46764	.390	23.035	4	149	.000
2	.716 ^b	.512	.495	.41970	.122	35.773	1	152	.000
3	.724 ^c	.524	.493	.42049	.012	.866	4	149	.486

a. Predictors: (Constant), X₁, X₂, X₃, X₄

b. Predictors: (Constant), X₁, X₂, X₃, X₄, Z

c. Predictors: (Constant), X₁, X₂, X₃, X₄, Z, X₁Z, X₂Z, X₃Z, X₄Z

Source: Author (2025)

As shown in Table 4.25, Model 1 did not include the moderating variable while Model 2 had the moderator as an independent variable. The moderating variable for this study was water demand. When water demand was added to Model 1, the R Squared for the model increased from 0.39 to 0.512. Thus the R² change as shown on the table was 0.122. This meant that the model improved from 39% to 51.2% and R² change remained significant (p<0.01). In this case then around 51.2% of performance of water service providers in the Lower Eastern Kenya was explained by the combined effect of the four independent variables and the moderator. Consequently, 48.8% of performance was determined by other factors not considered in this model. King'oriah (2011) guides that, a value of R² more than 0.4 indicates a relatively strong relationship. As this model had R² of 0.512, it was confirmed that there was a very strong relationship between the predictors and the dependent variable. Therefore, inclusion of the moderator in the multivariate regression model improved the value of the coefficient of determination (R²) substantially from a relatively weak to very strong relationship between the predictors and the dependent variable. In this regard therefore, demand for water acting as an

independent variable significantly influenced the relationships between all combined independent variables and the dependent variable.

Lastly, when Model 3 was added whereby the concurrent interactions of each independent variable with the moderator was considered, the value of R^2 changed by very little i.e. from 0.512 to 0.524 which was just 0.012 change. In percentage format the model improved from 51.2% to 52.4%. but the change was small and not statistically significant as confirmed by the pertaining F value of 0.866 and also the p-value of 0.486 that was much bigger than the critical significance p-value of 0.05. Further, it is observed in model 3 that while the R^2 increased by 0.012, the adjusted R^2 reduced by 0.002 i.e. from 0.495 to 0.493. This minor reduction of the adjusted R^2 was an indication that the interaction effect of the moderating variable in the model was weak and added insignificant value to the model. In conclusion therefore, the interactions of moderating variable with each independent variable directly was insignificant.

The model validity is confirmed through the ANOVA F-Statistics for the regression analysis with water demand as the moderating variable and the results as shown in Table 4.26

Table 4.26*Moderated Multiple Regression - Model Validity*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.149	4	5.037	23.035	.000 ^b
	Residual	31.491	149	.219		
	Total	51.641	153			
2	Regression	26.451	5	5.290	30.032	.000 ^c
	Residual	25.190	148	.176		
	Total	51.641	153			
3	Regression	27.063	9	3.007	17.007	.000 ^d
	Residual	24.577	144	.177		
	Total	51.641	153			

a. Dependent Variable: Y

b. Predictors: (Constant), X₄, X₁, X₂, X₃

c. Predictors: (Constant), X₄, X₁, X₂, X₃, Z

d. Predictors: (Constant), X₄, X₁, X₂, X₃, Z, X₄Z, X₁Z, X₂Z, X₃Z

Source: Author (2025)

It is evident from the ANOVA Table 4.26 that all the three models had high F-values at the respective degrees of freedom and all the three models were significant since the p-values were all 0.000 which were less than the critical significance p-level of 0.05. Thus, the variables in the format or combinations that constituted each model had significant influence on the dependent variable.

In particular, the F-value for model 1 was 23.035 at df (4, 149) which was greater by far compared to the F-critical for the same degrees of freedom being 2.37 at p-value of 0.05. Similarly, for model 2 the F-values was 30.302 at df (5, 148) while the critical F-value at those degrees of freedom is 2.21 at p-value of 0.05. Lastly, the F-value for model 3 was 17.007 at df (9, 144) while the F-critical value for these degrees of freedom is 1.88 at p-value of 0.05. Based on the foregoing therefore, all the three models were found to be valid for further analysis. The regression weights for the three models are shown in Table 4.27.

Table 4.27*Moderated Multiple Linear Regression – All Models*

Model	Coefficients ^a				
	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
1	(Constant)	1.066		4.113	.000
	Environmental Scanning (X ₁)	.289	.075	3.826	.000
	Strategy Formulation (X ₂)	-.046	.091	-.503	.616
	Strategy Implementation (X ₃)	.173	.124	1.396	.165
	Strategy Control (X ₄)	.247	.097	2.552	.012
2	(Constant)	.370		1.422	.157
	Environmental Scanning (X ₁)	.197	.069	2.836	.005
	Strategy Formulation (X ₂)	.038	.083	.462	.645
	Strategy Implementation (X ₃)	.096	.112	.858	.392
	Strategy Control (X ₄)	.062	.092	.679	.499
	Water Demand (Z)	.485	.081	5.981	.000
3	(Constant)	-1.466		-1.075	.284
	Environmental Scanning (X ₁)	.474	.317	1.497	.137
	Strategy Formulation (X ₂)	.831	.597	1.392	.166
	Strategy Implementation (X ₃)	-.283	.808	-.303	.727
	Strategy Control (X ₄)	-.178	.573	-.205	.757
	Water Demand (Z)	1.035	.415	2.491	.014
	Environmental Scanning * Water DD	-.090	.096	-.543	.347
	Strategy Formulation* Water Demand	-.242	.180	-1.493	.181
	Strategy Implementation* Water DD	.119	.246	.728	.630
	Strategy Control * Water Demand (DD)	.080	.171	.465	.643

a. Dependent Variable: Y

Source: Author (2025)

From Table 4.27, none of the standardized regression coefficients β_i was zero hence there was correlation between the variables and performance. As indicated earlier with respect to Model 1, only constant, X₁ and X₄ were significant under combined relationship of the independent variables meaning that the roles of Strategy Formulation (X₂) and Strategy Implementation (X₃) were dominated or absorbed by Environmental Scanning (X₁) and Strategy Control (X₄).

Under Model 2 with the moderator included, the β_i values were all positive but only X_1 and Z were significant in this case. In that regard, under Model 2 the roles of Strategy Formulation (X_2), Strategy Implementation (X_3), Strategy Control (X_4) were taken over by Environmental Scanning (X_1) and Water Demand (Z). That means that environmental scanning played the cardinal role in strategic management practices in influencing the performance of water service providers. Further, performance of water service providers is strongly and positively correlated with water demand.

Looking at the interactions of the moderator (Z) under Model 3 as shown in Table 4.27, it is confirmed that Z is the only one that is significant, meaning that water demand took over the roles of all other variables and played no role as a moderator.

From the results of the foregoing three models, it is evident that water demand enhanced the influence of strategic management practices on performance of water service providers. However, under interaction terms, variable Z does not moderate but it takes the role of all other independent variables. Consequently, water service providers should consider water demand as the most important factor when they are undertaking strategic management and implementing the related policies.

4.10 Discussions

This research entailed testing of five hypotheses through data collection and statistical analysis. The data collection was by means of self-administered questionnaires which were distributed to 183 respondents in 10 water service provision organisations located in the Lower-Eastern Kenya. A total of 154 respondents returned their questionnaires fully completed resulting in an overall response rate of 84.2%. The response rate per institution varied from 48 % to 100%

depending on the physical size of the organization in terms of geographical spread and the level of concentration of the target respondents at the head office.

This study received a high level of response rate consistent with those achieved in other sectors such as coffee at 81% response rate (Muriuki, 2023); infrastructure (roads) at 90.9% (Mrongo, 2024); and state corporations in Kenya at 86.67% (Njeru, 2022). Scholars including Mugenda and Mugenda (2003) consider a response rate of 50% acceptable for reporting and that above 70% as very good. Kothari (2014) observes that collection of data using a mailed questionnaire can raise a problem of low return rate for filled questionnaires. Both descriptive and inferential statistical analysis using SPSS tool facilitated the interpretation of results of data obtained for this study.

The Multiple Regression Model containing the four independent variables (X_1 to X_4) and expressed in the format $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$ was used to confirm whether collectively, the variables working together as strategic management practices influenced performance of water service providers. The statistical analysis of data collected yielded a combined coefficient of determination (R^2) of 0.394. This confirms that collectively, the influence of strategic management practices explains 39.4% of the total variations in performance of water service providers. Furthermore, ANOVA results validated this model since the F-statistics value was 23.547 at $p = 0.000$ that exceeded the critical test value at $p = 0.001$. Consequently, as the Multiple Regression Model was valid at $F_{(4,149)} = 23.547$, $p < 0.001$, this meant that the four independent variables of the study namely: Environmental Scanning; Strategy Formulation; Strategy Implementation and; Strategy Control acting concurrently are good predictors of total variations in performance of water service providers in Lower Eastern Counties in Kenya.

The above outcome aligns closely with findings of others researchers including Njeru (2015) who confirmed the value of strategic management practices in business environment noting that SMEs that adopted strategic management practices enjoyed higher organizational performance. This opinion is also echoed by Mohammed and Rugami (2019) who concluded that strategic management practices can lead to high performance but only if supported by total commitment and stability of tenure of top level management of an organisation. Equally, Shaban (2021) confirmed that strategic management practices overall, influenced performance particularly with respect to National Government Constituency Development Funded (NGCDF) projects in Taveta, Kenya.

Nevertheless, the current study revealed that the four independent variables acting together did not contribute equally to the influence on performance. Under this circumstance, only Environmental Scanning (X₁) and Strategy Control (X₄) were found to significantly contribute to performance. The other two independent variables - Strategy Formulation and Strategy Implementation (X₂ and X₃ respectively) - were found not significant as their p-values were more than 0.05. Therefore, in a combined relationship model, Environmental Scanning (X₁) and Strategy Control (X₄) dominated Strategy Formulation (X₂) and Strategy Implementation (X₃) in influencing performance of water service providers. Based on the significance level of influence starting with the variable with the highest influence to the one with the least influence, then the ranking takes the form X₁, X₄, X₃ and finally X₂.

From these results, the study established that, when implementing strategic management practices, Environmental Scanning (X₁) and Strategy Control (X₄) should be given a lot of weight. This outcome is consistent with the findings of Nyagaki (2021) who observes that, *“collectively, environmental scanning has the highest positive influence on organization*

performance, followed by strategy evaluation, strategy formulation and strategy implementation”. However, in the case of the current study, strategy implementation (X₃) ranks third while strategy formulation (X₂) ranks fourth indicating that strategy formulation is the least impactful step in strategic management practices. Whereas the study by Shaban (2021) concluded that environmental analysis had comparatively more significant impact on performance, it found that strategy implementation took the second position followed by strategy evaluation and finally strategy formulation. Nevertheless, from all the three studies, environmental scanning (or analysis) took the top position meaning that, among the four independent variables within strategic management practices, environmental scanning should be given highest consideration.

Other scholars that have arrived at similar conclusions regarding the importance of environmental scanning include Ogolla (2020) who emphasised that, every management has a duty to continually and closely monitor both the organisation’s internal situation and outside developments that could have an impact on performance of the organisation. Equally, Maina (2020) who focused on the influence of strategy formulation on performance of state corporations in Kenya concluded that overall, environmental scanning had the highest positive influence on performance followed by leadership.

The current study further established through the analysed descriptive statistics that, for greater effectiveness during environmental scanning processes, organisations should ascertain high level of stakeholder inclusivity particularly the employees who are the internal stakeholders.

With regard to strategy implementation, Ntombura et al. (2020) who evaluated the influence of strategy implementation on the performance of private universities revealed a mixed range of

outcomes, from intermediate to strong relationship between strategy implementation and performance. Nevertheless, consistent with the current study, it was concluded that strategy implementation has value in organisational performance. Further on strategy implementation, Mrongo (2024) emphasized the need for effective integration of technology, optimization of resource allocation, and enhanced stakeholder engagement for better performance. These recommendations are consistent with the findings of the current study which considers the key performance drivers in water provision as resource optimization and stakeholder engagement.

On the element of strategy control, this study considered that variable as the second most important step in strategic management practices. This importance is echoed by Enzema (2020) who emphasise that, to ensure success, all employees must be involved during execution of strategy control since they are the ones who are in the best position to identify performance gaps and propose necessary changes that can be put in place as part of corrective action or adjustments. Descriptive statistics of this study revealed that strategy control can be more effective if organisations demonstrate that they valued their employees more than process through equitable and meritocracy-based rewards noting that employees are key internal stakeholders of their organisations. A study by Nyagaki (2021) also demonstrates the importance of strategy control and recommends that organisations particularly profit-making institutions should evaluate their strategic management plans regularly in order to monitor their consistency with the organisational goals and enable them set their performance and standards that need to be met. Finally, Mohammed and Rugami (2019) states that strategy control practice significantly influences competitive academic performance in secondary schools.

This study analysed further the Multiple Regression Model by considering the resultant Regression Weights of the four independent variables (Environmental Scanning, Strategy

Formulation, Strategy Implementation and Strategy Control) when acting concurrently. The findings showed that only the constant ($\beta_0 = 1.061$, $P < 0.001$), Environmental Scanning (X_1 , $\beta_1 = 0.309$, $P < 0.001$) and Strategy Control (X_4 , $\beta_4 = 0.283$, $P < 0.05$) were significant under combined relationship. However, the roles of Strategy Formulation (X_2 , $\beta_2 = -0.048$, $P = 0.596$) and Strategy Implementation (X_3 , $\beta_3 = 0.176$, $P = 0.155$) in a combined relationship were found not significant since their p-values were more than 0.05. Consequently, their individual roles were taken over by Environmental Scanning (X_1) and Strategy Control (X_4). This in practical settings implies that strategic management practices collectively have more influence on the performance of water service providers through environmental scanning (X_1) and strategy control (X_4) processes.

In conclusion therefore, when an organization undertakes environmental scanning very well it gets all the information necessity to help it make good strategies hence this step casts a very strong foundation that determines how well the next two steps (Strategy Formulation and Strategy Implementation) will be undertaken. Finally, when strategies are controlled very well then, the organization resolves all the deviations arising from strategy implementation ensuring that formulated strategies work very well. Nevertheless, descriptive statistics for this study revealed that the effectiveness of these two steps is dependent on how organizations embrace high level inclusivity of employees in the strategic management activities and how the employees perceive fairness and meritocracy is practiced in their organization's reward policy.

This study also evaluated role of the moderating variable (Z) in two models. Firstly, with the

model taking the format: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_i Z_j + \varepsilon$ ----- (1)

where $\beta_i Z_j$ is the moderator as an independent variable and secondly in the format:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_i Z_j + \beta_{ij} X_i Z_j + \varepsilon \quad \text{----- (2)}$$

where $X_i Z_j$ are the interaction terms while B_{ij} is the coefficient of the interaction term.

It was noted that, in the first case when the moderator was added to the four independent variables the value of R^2 for the model increased from 0.39 to 0.512 hence the model improved from 39% to 51.2%. The Resultant R^2 of 0.512 confirmed a very strong relationship between the predictors and the dependent variable. Nevertheless, this Moderated Multiple Linear Regression resulted in the β_i values being all positive but only predictors X_1 and Z were significant. In that case therefore, Strategy Formulation (X_2), Strategy Implementation (X_3), and Strategy Control (X_4) did not play any role and their roles were all taken over by Environmental Scanning (X_1) and Water Demand (Z). From this outcome, it is noted that, water demand influenced the relationship between strategic management practices and the performance of water service providers. Further, Environmental Scanning (X_1) was the only independent variable that remained relevant in influencing performance when water demand was considered as the moderator for strategic management practices. At this point, the Null Hypothesis H_{05} that stated that, water demand does not significantly moderate the relationship between strategic management practices and performance of water service providers was rejected. On the contrary, it was concluded that demand for water significantly moderated the relationships between the independent variables and the dependent variable.

In the second scenario, when the concurrent interactions of each independent variable with the moderator was considered, the value of R^2 value changed by very little i.e. from 0.512 to 0.524 thus resulting in an improvement from 51.2% to 52.4%. This change was small and not statistically significant as confirmed by ANOVA statistics where on the contrary, the Adjusted R^2 reduced by 0.002. This reduction in the Adjusted R^2 was an indication that the direct interaction effect of the moderator with each independent variable was weak and insignificant. A further look at the coefficients under second scenario with interactions of the moderator taken into account, it emerged that only the moderator (Z) was significant, meaning that water demand

took over the roles of all other variables and played no role as a moderator. In this scenario, ANOVA statistics yielded $F_{(4,149)} = 0.866$ and $P = 0.486$ that was more than the critical $P=0.05$ confirming that the model was not valid. It was therefore concluded that water demand did not act as a moderating variable but played the role of the independent variables.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Kothari (2014) guides that, in a good scientific research, conclusions made should be based and limited to only those justified by the data of the research. This chapter therefore contains the conclusions made from the findings of the study based on the research objectives, design and methodology validated by the results of the analysis of data collected. Further, the researcher has made recommendations that were considered useful and possibly impactful to the audience of the study in line with the significance of the study as set forth in chapter one.

This study examined the influence of strategic management practices on the performance of water service providers in the Lower-Eastern Counties of Kenya as the core objective and considered water demand as the moderating variable. At the end of the chapter, suggestions are included on areas for further research on the account of the delimitation and limitations pertaining to the study. Further, proposals are included that identify areas where the study's findings yielded results that did not adequately reinforce the theories advanced.

5.2 Summary of Findings

5.1.1 To determine the influence of environmental scanning on performance of water service providers in Lower Eastern Kenya.

Environmental scanning is about finding out intensively the internal and external factors that could impact positively or negatively the objectives and wellbeing of an organisation. This is usually undertaken through the assessment of the Strengths, Weaknesses, Opportunities and Threats (SWOT) associated with the organisation. All stakeholders should be involved in this process.

The results of descriptive analysis based on data collected using a questionnaire with respect to this variable showed that most respondents were in agreement with the statements in the questionnaire with a mean score above 3.4 out of 5 on the Likert's scale. This testing instrument was first confirmed to have high reliability hence data collected using the questionnaire were considered to be fairly reliable for testing the hypothesis. The Null Hypothesis under this variable H_{01} was that Environmental Scanning does not significantly influence the performance of water service providers in the Lower-Eastern Kenya. The bivariate regression analysis and the ANOVA test gave rise to a contrary finding since a very high F-statistic value of 50.73 was obtained at a significance level $p = 0.000$. As the p-value was much less than the critical p-value of 0.05 then the Null Hypothesis H_{01} was rejected and the alternative hypothesis H_{a1} was accepted. The finding therefore was that environmental scanning significantly influences performance of water service providers in the Lower-Eastern, Kenya.

Additionally, this variable (X_1) had a strong positive correlation with the dependent variable Y (performance of water service providers) since the Pearson Correlation Coefficient (R) was 0.503. Furthermore, the Unstandardized Beta value for this variable was $\beta=0.473$ meaning that, every unit change in the value of this variable resulted in 0.473 change in performance of water service providers. Additionally, R Squared for this variable was 0.253 implying that this variable alone explained 25.3% of the performance of water service providers in the Lower-Eastern Kenya. This was a substantial contribution by one independent variable on performance of water service providers. In this regard therefore, environmental scanning positively and significantly influenced performance of water service providers in the Lower-Eastern, Kenya.

This finding is consistent with the Dynamic Capabilities Theory on consideration that, environmental scanning is a continuous process that evaluates the dynamic operating

environment of an organisation so as to prepare the organisation for deployment of effective capabilities in its systems to respond quickly to the environmental dynamics in order to remain competitive.

5.1.2 To establish the influence of strategy formulation on performance of water service providers in Lower Eastern Kenya.

Strategy Formulation was the second independent variable of the study and in this regard the objective was to establish if Strategy Formulation significantly influenced performance of water service providers in the Lower-Eastern Kenya. The reliability of the testing instrument based on this independent variable was very high at a Cronbach's Alpha value of 0.914 which greatly exceeded the reliability threshold Alpha of 0.6. The descriptive analysis under this variable showed that most respondents were in agreement with the statements in the questionnaire.

The Null Hypothesis under this variable H_{02} was that Strategy Formulation does not significantly influence the performance of water service providers in the Lower-Eastern Kenya. Analysis of the bivariate regression of the variable with the dependent variable resulted in a contrary outcome as the ANOVA test yielded F-statistic value of 33.302 that was very high and exceeded by far the critical F-value since the significance level p-value was 0.000. Consequently, the Null Hypothesis H_{02} was rejected and the alternative hypothesis H_{a2} was accepted. Thus, Strategy Formulation significantly influenced performance of water service providers in the Lower-Eastern counties of Kenya.

Strategy Formulation (X_2) as an independent variable had a moderate positive correlation with the dependent variable Y (performance of water service providers) since the Pearson

Correlation Coefficient (R) was 0.426. Furthermore, for this variable the Unstandardized Beta value was $\beta=0.365$ hence every unit change in the value of this variable resulted in 0.365 change in performance of water service providers. Additionally, R^2 for this variable was 0.182 meaning that 18.2% of the performance of water service providers in the lower Eastern Kenya arose from Strategy Formulation alone. However, the significance of the influence of Strategy Formulation (X_2) diminished when considered as part of the collective combination of the four independent variables (X_1 to X_4) acting together on the dependent variable. This means that other steps in strategic management practices play a higher role in influencing performance of water service providers compared to strategy formulation.

5.1.3 To determine the influence of strategy implementation on performance of water service providers in Lower Eastern Kenya.

The objective of including Strategy Implementation as the third independent variable of the study was because it is one of the key elements of strategic management practices hence, it was necessary to establish if this variable significantly influenced performance of water service providers in the Lower-Eastern counties in Kenya. The reliability of the testing instrument based on this variable was quite high at a Cronbach's Alpha value of 0.896.

The Null Hypothesis under this variable H_{03} was that Strategy Implementation does not significantly influence the performance of water service providers in the Lower-Eastern Kenya. However, through statistical tests, it was established that Strategy Implementation significantly influenced performance of water service providers in the Lower-Eastern Kenya. This was confirmed from the results of bivariate linear regression analysis between this variable and the dependent variable where the ANOVA test yielded an endogenous F-statistic value of 58.213 and significance level p-value of 0.000. At the same degrees of freedom ($df = 1$ and 152), that

F-value of 58.213 exceeded by a wide margin the critical F-value ($F=3.8915$) at the threshold p-value at 0.05. Consequently, the Null Hypothesis H_{03} was rejected and the alternative hypothesis H_{a3} was accepted.

Strategy implementation as an independent variable (X_3) produced a Pearson's Correlation Coefficient (R) of 0.526 indicating a fairly strong positive correlation with the dependent variable Y (performance of water service providers). Additionally, the Unstandardized Beta value at $\beta = 0.491$ implying that every unit change in the value of this variable resulted in 0.491 change in performance of water service providers. Finally, R Squared for this variable was 0.277 meaning that 27.7% of the performance of water service providers considered in the study was determined by Strategy Implementation alone. Nevertheless, as a combined set of the four variables constituting strategic management practices, it was established that Strategy Implementation had lower and insignificant influence on performance of water service providers compared to Environmental Scanning or Strategy Control.

5.1.4 To determine the influence of strategy control on performance of water service providers in Lower Eastern, Kenya.

The fourth independent variable of the study was Strategy Control and the specific objective was to find out if this variable significantly influenced performance of water service providers in the Lower-Eastern counties of Kenya. Accordingly, it was first established that the reliability of the testing instrument based on this variable met the necessary threshold for further analysis of the data. This was confirmed since the Cronbach's Alpha value for this variable was 0.902 which far above the acceptable minimum of 0.6.

The Null Hypothesis (H_{04}) under this variable was that Strategy Control does not significantly influence the performance of water service providers in the Lower-Eastern Kenya. Following statistical tests, this Null Hypothesis was rejected and the alternative Hypothesis H_{a4} was accepted meaning that Strategy Control significantly influenced performance of water service providers in the Lower-Eastern Kenya. This was grounded on the result of bivariate regression analysis between this variable and the dependent variable where the ANOVA test yielded a high F-statistic value of 66.757 at a significance level p-value of 0.000; the arising p-value of 0.000 was much less than the critical p-value of 0.05.

Strategy Control (variable X_4) produced a Pearson's Correlation Coefficient (R) of 0.554 indicating a fairly strong positive correlation with the dependent variable Y (performance of water service providers). Additionally, the Unstandardized Beta value at $\beta = 0.483$ implied that every unit change in the value of this variable resulted in 0.483 change in performance of water service providers. R Squared for this variable was 0.302 meaning that 30.2% of the performance of water service providers considered in the study arose directly from Strategy Control.

5.1.5 To establish whether water demand moderated the relationship between strategic management practices and performance of water service providers in Lower Eastern, Kenya.

Demand for water was considered as the moderating variable of the study. It was intended to establish if this variable significantly moderated the relationships between the four independent variables discussed above and the performance of water service providers in the Lower-Eastern Kenya. The reliability of the testing instrument based on this variable was high at a Cronbach's Alpha value of 0.764 which exceeded the threshold of 0.6.

The Null Hypothesis under this variable H_{05} was that: demand for water does not moderate the relationship between strategic management practices and performance of water service providers in Lower Eastern Counties, Kenya. Under Model 2 of the multiple regression analysis with the moderator included, the β_i values were positive for all variables but only environmental scanning (X_1) and the moderator (Z) were significant meaning that in a combined model performance of water service providers is strongly and positively correlated with both environmental scanning and water demand and not the other independent variables.

Model 3 considered the overall influence of the combination of all the four independent variables together with the moderating variable as well as the moderator's interactions with each independent variable on the dependent variable Y and taking into account the statistical error ε arising from sampling. This resulted in the value of R^2 increasing from 0.512 to 0.524 which was a small and statistically insignificant change. The pertaining F -value of 0.866 and p -value of 0.486 that was much bigger than critical $p=0.05$ confirmed that the model was not statistically significant. Further, although the R^2 increased by 0.012, the adjusted R^2 reduced by 0.002 (from 0.495 to 0.493). This minor reduction of the adjusted R^2 was an indication that the effect of the interactions of the moderating variable in the model was weak and added insignificant value to the model. Further, results of the interactions of the moderator (Z) under Model 3 with all the independent variables indicated that Z is the only one that is significant. This meant that water demand took over the roles of all other variables and played no role as a moderator.

From the foregoing results, it is evident that, even though water demand enhanced the influence of strategic management practices on performance of water service providers, the variable (Z) does not moderate but it takes the role of all other independent variables. Consequently, the

Null Hypothesis H_{05} was upheld meaning that water demand does not moderate the relationship between strategic management practices and performance of water service providers in Lower Eastern Counties in Kenya.

5.2 Conclusions

The general objective of the study was to establish the influence of strategic management practices on performance of water service organisations in Lower-Eastern Kenya. Specific findings of this study based on the results of analysis of various qualitative and quantitative data led to conclusions discussed below.

5.2.1 Environmental Scanning

With the ANOVA statistics for this variable showing $F=50.73$ and $p=0.000$ the Null Hypothesis H_{01} was rejected and the alternative hypothesis H_{a1} was accepted concluding that environmental scanning significantly influences performance of water service providers in the Lower-Eastern, Kenya. Additionally, the Pearson Correlation Coefficient (R) being 0.503 and $\beta=0.473$ confirmed that environmental scanning had a fairly strong correlation with performance of water service providers in the region. Most importantly, based on the results of multiple regression analysis of the four independent variables (X_1 to X_4) the findings showed that Environmental Scanning had the highest significance under combined relationship. Thus, Environment Scanning as part of the strategic management practices plays the most significant role in influencing the performance of water service providers. Consequently, water service providers should devote more resources both tangible and intangible to build capabilities that support environmental scanning process in order to enhance their organizational performance.

However, results of descriptive analysis pointed at two weak areas that undermined effectiveness of environmental scanning process in the organisations in the region. First, adequate tools were not provided to collect required data as part of environmental scanning process. Secondly, the organizations did not regularly benchmark with other water service providers in the region. To achieve higher performance therefore, water service providers should provide ample resources and build capacity to undertake both the internal and external environmental scanning through SWOT and PESTEL analyses.

5.2.2 Strategy Formulation

The Null Hypothesis under this variable H02 was rejected after the bivariate regression analysis and the ANOVA test yielded $F = 33.302$ and $p = 0.000$. Accordingly, Alternative hypothesis Ha2 was accepted indorsing that Strategy Formulation positively and significantly influenced performance of water service providers in the Lower-Eastern Kenya. However, strategy formulation had a moderate positive correlation with performance of water service providers with $R^2 = 0.182$. Furthermore, the results of multiple regression analysis of the four independent variables for this study showed that strategy formulation had the least significance under combined relationship model. Therefore, it was concluded that, strategy formulation was an important aspect within strategic management practices but its influence on performance of water service providers in the region of study was weakest compared to the other four independent variables.

The descriptive analysis of data collected under this study pointed at two weak areas supporting strategy formulation. Firstly, that, staff do not go for retreats regularly for planning, budgeting and policy formulation; and secondly, that not all staff participate during strategic planning

process. These issues could arise on one hand due to inadequate financial provision by the organisations for strategy formulation process, and on the other hand, due to organisations attaching little importance on strategy formulation as a key contributor to enhancement of their performance. Strategy formulation requires commitment and inclusivity to earn employee ownership of the formulated strategies.

5.2.3 Strategy Implementation

The Null Hypothesis H03 of the study was that strategy implementation does not significantly influence the performance of water service providers in the Lower-Eastern Kenya. However, through statistical tests, it was established that this Null Hypothesis could not hold because the bivariate regression analysis yielded very high F-value of 58.213 and $p = 0.000$ that was much less than the $p = 0.05$. Consequently, the alternative hypothesis Ha3 was accepted confirming that strategy implementation positively and significantly influenced performance of water service providers in the Lower-Eastern Kenya.

Further, values of $R^2 = 0.277$ and Unstandardized Beta $\beta = 0.491$ signified that the correlation between strategy implementation and performance was fairly strong and positive. Nevertheless, results of multiple linear regression analysis that measured the combined effect of the four independent variables acting together on performance showed that strategy implementation was among the two independent variables that were not significant. Additionally, descriptive statistics on this variable pointed at three areas that could affect organizational performance. First, the organizations did not have adequate tools, equipment and technology to get work done; secondly, staff were not trained regularly; and lastly employees were not rewarded often for good work. It was therefore concluded that water service providers did take strategy implementation processes seriously since they did not invest sufficiently on assets that could

build superior capabilities to enable them achieve higher organizational performance and competitive advantage. Further, employees were not adequately motivated to encourage them to deploy their full potential on strategy implementation and service delivery.

5.2.4 Strategy Control.

The study had hypothesised under this objective that strategy control does not significantly influence the performance of water service providers in the Lower-Eastern Kenya. Following statistical tests, this hypothesis was rejected and on the contrary it was concluded that strategy control had positive and significant influence on performance of water service providers in the region. This conclusion was based on the results of bivariate regression analysis between this variable and the dependent variable where the ANOVA test results were significant at $F = 66.757$ and $p = 0.000$. Further, on its own, strategy control (variable X_4) produced R^2 of 0.302 and Unstandardized Beta value $\beta = 0.483$ indicating a fairly strong positive correlation with performance of water service providers. Additionally, Multiple Regression Analysis involving the combination of the four independent variables, confirmed that strategy control was one of the two independent variables that were significant in the combined model. It was therefore concluded that, Strategy Control as one of the strategic management practices should be given central consideration and all its associated activities should be effectively supported.

However, results of the analysis of descriptive data identified five areas that could negatively impact organisational performance. First, was clarity and fairness in the reward policy; second was that the level of staff satisfaction with the organization's recruitment and reward system; third was the level of meritocracy during the award of promotions; fourth was whether weak areas identified were remedied; and finally, the fifth was timeliness in correcting performance deviations. Management should therefore demonstrate commitment, fairness and transparency in their operations as well as policy implementation so as to motivate and earn the support of their employees. These employees are key stakeholders of those organizations and so they can

influence organizational performance. Furthermore, devoid of effective strategy control, strategies that consume time and resources to formulate and implement may not yield intended results leading to reduced performance.

5.2.5 The collective influence of the Independent Variables (X₁ to X₄) on Performance

The general objective of the study was to establish the influence of strategic management practices on performance of water service organisations in Lower-Eastern counties of Kenya. Strategic management practices encompass the combination of the four steps that constitute the four independent variables of this study. From the data analysed, the collective influence of the four independent variables combined and working together on performance resulted in only Environmental Scanning (X₁) and Strategy Control (X₄) being significant while Strategy Formulation (X₂) and Strategy Implementation (X₃) exhibited no significance in influencing performance of water service providers in this combination. Further, the ranking based on the significance level of the influence of each variable starting with the one with the highest influence to the one with the least influence emerged as X₁, X₄, X₃ and finally X₂. This finding was consistent with that of Nyagaki (2021) except that in the current study X₂ and not X₃ took the last position. It is therefore concluded that, in strategic management practices, Environmental Scanning (X₁) and Strategy Control (X₄) should be given more weight compared to strategy formulation (X₂) and strategy implementation (X₃). In others words, when an organisation undertakes environmental scanning and strategy control very well, it sets a good base for effective strategy formulation and strategy implementation that assures the organisation superior performance.

5.2.6 Water Demand as a Moderating Variable

The objective of the study under this variable was to examine the moderating effect of water demand on the relationship between strategic management practices and the performance of

water service providers. The pertinent Null Hypothesis (H_{05}) was that: demand for water does not moderate the relationship between strategic management practices and performance of water service providers in Lower Eastern Kenya. However, from the results of statistical data analysis $F=0.866$ and $p=0.486$ confirmed that the model was not statistically significant. Thus, the Null Hypothesis was upheld concluding that water demand does not moderate the relationship between strategic management practices and performance of water service providers in Lower Eastern Kenya.

However, the descriptive analysis of data collected under this variable indicated that most respondents disagreed with majority of the statements in the questionnaire leading to a conclusion that requirement for water was unmet by the water service providers in the region. The eight propositions that most respondents disagreed in the questionnaires concerned - organization satisfactorily meeting customer water demand over time; organization's water supply system always meeting customers' demands; infrequent rationing of water; organization having few monthly water disconnections and few water bill defaulters; organization having few illegal water connections; organization having modernized their water supply lines to meet customer demands; and finally, organizations' ability to meet water demand.

With regard to the statement about organizations' capability to meet water demand, there were contradictory responses. Some responses were interpreted to mean that the respondents considered their organisations as being completely capable of meeting customer demand for water; other responses implied organisation were capable of meeting water demand but had not deployed the necessary machinery to achieve that goal. Additionally, it was concluded based on the negative responses to many statements on the questionnaire on water demand that both internal and external factors contributed to the failure of the organisations to meet water demand

for their customers. Firstly, and most importantly, both the secondary data as well as responses obtained from the open-ended questions of the questionnaires revealed that Non-Revenue Water (NRW) was fairly high and that wastage contributed to low performance in water service delivery. A good example in support of this observation was from Nithi Water and Sanitation Company Limited which in its published financial report of 2023, management considered NRW as a major problem that needed to be tackled. Thus, as part of its 2022/27 strategic plan, the company aimed at reducing the Non-Revenue Water levels from 65% to 35% by 2027 plan period. Nevertheless, by international standards, 35% NRW is still high.

Secondly, the data confirmed that water service providers encountered many illegal connections together with water bill defaulters resulting in frequent disconnections of water to customers. This was an indication of external threat to the resources of the organisations affecting their performance. Further, it was concluded from some of those statements that water service providers had been operating with inadequate, technologically outdated and inefficient water installations. These were considered as internal weakness that the organisations needed to address for higher performance and service delivery.

5.2.7 Realisation of the the Object of the Study

The general objective of the study was to establish whether strategic management practices moderated by water demand significantly influenced performance of water service organisations in Lower-Eastern Kenya. The study realised this objective fully as all variables tested yielded affirmative results.

5.2.8 Realisation of the Significance of the Study

This study identified areas in strategic management practices which were more impactful on performance of water service providers. More specifically, water service providers should emphasise the importance of environmental scanning and strategy control in their strategic management practices and prioritise the need for addressing water demand when undertaking their strategic management processes. From the start, this was what the study aimed at establishing.

5.4 Recommendations

This study recommends that water service providers should fully adopt strategic management practices in their operations covering environmental scanning, strategy formulation, strategy implementation, and finally strategy control. Specifically, with regard to the findings under the four independent variables of the study, it is recommended that:

First, organisations should consider environmental scanning as the most important step in strategic management practices and during that process inclusivity of each member of the organisation and key stakeholders should be highly prioritised. Environmental scanning is not only about finding what is known, but more importantly what is unknown. This can be achieved through SWOT analysis process. To undertake this process more effectively, water service providers should ascertain and demonstrate through commitment and action that they valued people above processes or product. Accordingly, the contribution of all individuals in the organisations towards achieving the organizational goal should not only be obtained but should also be fairly recognised and rewarded through a meritocracy-based process. Involving all stakeholders expands the likelihood of finding hidden opportunities that could be of strategic value to the organization. Further, inclusivity creates trust, loyalty and confidence among employees encouraging them to full utilise their skills, knowledge and creativity which are immeasurable intangible assets of the firm. Finally, organisations should endeavour to build robust capabilities

to undertake environmental scanning so as to enable them perceive and navigate the turbulence of the dynamic operating business environment.

Secondly, strategy formulation should be considered as an important aspect within strategic management practices as it has value in influencing organisational performance. Consequently, organisations should provide adequate financial resources for strategy formulation processes and ensure commitment of top-level management to spearhead strategy formulation and permit unlimited inclusivity of employees in the processes so as to cultivate ownership of the formulated strategies.

Thirdly, strategy implementation should not be given equal consideration because this process enhances organisational performance. To undertake strategy implementation more effectively, the organizations should invest adequately on tools, equipment and technology that get work done more efficiently. Further, employees should be trained regularly to provide them with necessary skills to run the operations and be rewarded fairly for good work. Investing sufficiently on tangible and intangible assets will enable the firm to achieve better sustainable performance and competitive advantage.

The fourth recommendation is that, water service providers should consider strategy control as a critical step in their strategic management practices. Effective strategy control ascertains that strategies that consume time and resources to formulate and implement achieve the intended objectives. For higher effectiveness, organisations should therefore build superior capabilities that will enable them to quickly identify weak operational areas and take timely remedial actions.

The fifth recommendation is on diversification of water supply for various functions. First, water service providers should within the prevailing regulations endeavour to achieve global water usage ratios that indicate that agriculture consumes about 50% of water supply, industrial activities take 40% while domestic activities including sanitation, cooking and drinking take about 10%. As confirmed from data collected in this study, about 83% of water supplied in the region is for domestic use. Water service providers in the region of study have therefore focused virtually all of their energy and resources on delivering water for domestic functions only. This is a very small and less demanding area of focus consisting of only 10% of water demand. Furthermore, the Water Act 2016 and the subordinate regulatory regimes of the county governments in Lower-Eastern Kenya permit water service providers, subject to their ability, to supply water for all functions as long as they provide clear identification of supply systems for each function such as domestic and irrigation for hygiene reasons. It is through this way the organisations can contribute effectively towards the aspirations of Kenya's Vision 2030 and the key Sustainable Development Goals (SDGs) prescribed by the United Nations. Additionally, such diversification will easily expand the scale of operations of the organisations with less infrastructural investments considering that the distribution lines for water for domestic uses are reticulated through agricultural lands which are at the moment not proportionately provided with water. Subject to regulatory constraints, product diversity could also be adopted where the service providers could consider branding and bottling their water for domestic use and direct consumption. This is another possible source of revenue.

The sixth recommendation is on diversification of water sources. Water service providers should within the regulatory framework under the Water Act 2016 explore other potential sources of water to supplement their current water sources. In response to the questionnaires, almost all the respondents had in mind that damming of water and drilling of boreholes were

the only main potential water sources. Water service providers should consider rainwater harvesting as an alternative potential water source considering that researchers have established that rainwater collected directly over standard roofs is cleaner compared to water from all other sources (Gakungu, 2013).

The seventh and final recommendation concerns efficiency of water distribution. Water service providers are faced with a great challenge of high Non-Revenue Water (NRW). With NRW in Kenya rising above 45%, high financial performance of water service providers that are profit making bodies will remain a mirage. Secondary data of this study on financial performance of the water service providers indicated that their profitability has been declining over the last five years with hardly any making profit in the last two years (see Appendix L). Water service providers will benefit more by investing on processes and systems designed for reduction of NRW rather than avoiding the attendant cost. Water service providers can take a cue from a country like Israel which has been identified as one of the most water-efficient countries in the world.

5.5 Suggestions for Further Research

This study was confined to water service providers in the counties of the Lower-Eastern region of Kenya covering 12% of all counties in Kenya and around 11.5 % of licensed water service providers in the country. A similar study can be conducted based on different delimitation.

Secondly, the moderating variable of the study was demand for water which upon analysis failed to serve as a moderator. This study can be replicated using another moderator or intervening variable such as regulatory framework or stakeholder engagements.

Thirdly, this was a cross-sectional study based on positivist philosophy where data was collected in one dry season. A longitudinal study could be considered adopting different methodology.

Finally, noting that water service providers in the Lower-Eastern Kenya have only concentrated on 10 % of water uses, a study can be undertaken to evaluate the relationship between innovation, regulations and business diversity in water services sector.

REFERENCES

- Armstrong, M. (2009). *Armstrong's handbook of human resource management practice* (11th ed). Kogan Page.
- Atheru, K., J., T., Gichohi, P., M. & Ngige, F., J. (2021). Neo - Pentecostal Churches Advocacy and Alleviation of Domestic Water Scarcity in Tigania West Constituency, Meru County, Kenya. *Journal of Religious Studies*, 3(3), 43-53. <https://doi.org/10.53819/81018102t3004>.
- Barney, J.B. (2002). *Gaining sustaining competitive advantage* (2nd ed). Pearson Prentice Hall.
- Barney, J. B. (2013). *Gaining and Sustaining Competitive Advantage* (4th ed). Pearson Education Limited
- Bessette, G. (ed.). (2006). *People, land and water: Participatory development communication for natural resource management*. Earthscan/International Development Research Centre
- Boon-itt, S. & Wong, C.Y. (2011). The moderating effects of technological and demand uncertainties on the relationship between supply chain integration and customer delivery performance. *International Journal of Physical Distribution & Logistics Management* 41, 253-276. <https://doi.org/10.1108/09600031111123787>
- Botkin, D.B. & Keller, E.A. (2007). *Environmental science- Earth as a living planet*. (6th ed). John Wiley & Sons Inc.
- Botkin, D.B. & Keller, E.A. (2011). *Environmental science- Earth as a living planet*. (8th ed) John Wiley & Sons Inc.
- Brooks, D. B, & Mehmet, O. (2000). *Water balances in the Eastern Mediterranean*. International Development Research Centre (IDRC).
- Cameron, S. (2005). *Econometrics*. McGraw-Hill
- Christopherson, R.W. & Baekeland, G. (2018). *Geosystems - An introduction to physical geography* (10th ed). Pearson Education Inc.
- Christopherson, R.W. (2009). *Geosystems - An introduction to physical geography* (7th ed). Pearson Education Inc.
- Cole, G.A. (2004). *Management Theory and practice* (6th ed). BrookPower - Cengage Learning.
- Coulter, M. (2005). *Strategic Management in Action* (3rd ed). Pearson Prentice Hall.
- Creswell, J. W., & Creswell, J. D. (2022). *Research Design: Qualitative, Quantitative, and Mixed Methods Approach*. SAGE Publications Ltd
- Creswell, J.W.& Creswell, J.D. (2018). *Research Design – qualitative, quantitative, and mixed methods approaches* (5th ed). SAGE Publications Ltd
- Cunningham, W.P., Cunningham, M. A. (2019). *Principles of Environmental Science: Inquiry & Application*. McGraw-Hill Education.
- David, F.R. & David, F. R. (2017). *Strategic management concepts and cases- A competitive advantage approach* (16th ed). Pearson's education Limited.
- Dess, G.G., Lumpkin, G.T., & Eisner, A.B. (2008). *Strategic management - text and cases* (4th ed). McGraw-Hill
- Dess, G.G., Lumpkin, G.T., McNamara G., Eisner, A.B., & Lee, S.H., (2021). *Strategic management - text and cases* (10th ed). McGraw-Hill.
- Donaldson, L.& Davis, J. (1991) Stewardship Theory or Agency Theory. *Australian Journal of Management*, 16, 49-64. <http://dx.doi.org/10.1177/031289629101600103>

- Enzama, B. (2020). *Strategic Management Practices and Performance at Amref International- a Case Study of Amref- Kenya*. [Masters Thesis University of Nairobi] <http://erepository.uonbi.ac.ke/handle/11295/154253>
- Gagai, G. (2022). *Relationship between strategic contingency factors and organisational performance of commercial banks in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1348>.
- Gakungu, J. N. (2013). Qualitative assessment of rain water harvested from roof top catchments: Case study of Embakasi, Nairobi County. *International Journal of Soft Computing and Engineering (IJSCE)*, 3(4), 263. <https://doi.org/10.35940/ijscce.D1834.093413>
- García Ávila, F. F., Guanoquiza-Suárez, M., Guzmán-Galarza, J., Cabello-Torres, R., & Valdiviezo-Gonzales, L. G. (2023). Rainwater harvesting and storage systems for domestic supply: An overview of research for water scarcity management in rural areas. *Results in Engineering*, 18, 101153. <https://doi.org/10.1016/j.rineng.2023.101153>
- Gasson, P., Alemi, M. & Bowling, C. (2019). *Water Market USA*. Media Analytics Ltd.
- Getis, A., Getis, J., & Fellmann, D. (2009). *Introduction to geography* (12th ed). McGraw-Hill International.
- Groebner, D.F., Shannon, P.W., & Fry, P.C. (2024). *Business statistics – A decision-making approach* (11th ed). Pearson Education Limited.
- Guerrini, A., Romano, G. & Campedelli, B. (2011). "Factors affecting the performance of water utility companies", *International Journal of Public Sector Management*, 24 (6) 543-566. <https://doi.org/10.1108/09513551111163657>
- Hennink, M., Hutter I. & Bailey, A. (2011). *Qualitative research methods*. SAGE Publications Ltd.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Johnson, G., Scholes, K. & Whittington, R. (2009). *Exploring Corporate Strategy – Text and cases* (7th ed). Pearson Education Limited.
- Kairu, J.K. (2022). *Influence of managerial cognition on firm performance of textile and leather firms in Kenya - moderating roles of competitive dynamics*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1342>
- Kamau, J.G. (2020). *Organizational strategic capabilities, compliance with regulations and competitive advantage of commercial banks in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/853>
- Karanja J.G. (2019). *Credit risk and lending performance of commercial banks in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/806>.
- Keroti, R.O. (2022). *Sustainable Entrepreneurship Factors Influencing Performance of Clearing and Forwarding Firms in Nairobi, Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1432>
- Kerubo, N. L., Wachiuri, E., & Namusonge, E. (2025). Demand management and performance of food and beverage manufacturing firms in Kenya. *Journal of Applied Social Sciences in Business and Management (JASSBM)*. 4(1) , 1-12. <https://grandmarkpublishers.com/index.php/JASSBM>
- Kiambi, J. T. A., Gichohi, P. M., & Njoroge, J. N. (2021). Neo-Pentecostals' Religious Practices and Alleviation of Domestic Water Scarcity in Tigania West Constituency, Meru County, Kenya. *International Journal of Professional Practice*, 9(3), 89–99. <https://ijpp.kemu.ac.ke/ijpp/index.php/ijpp/article/view/116>.

- Kibet, C. C., Rintari, N., & Moguche, A. (2023). Assessment of the effect of organisational innovation on performance of small and medium enterprises supermarkets in Laikipia County, Kenya. *International Journal of Professional Practice*, 11(2), 68–77. <https://doi.org/10.1234/ijpp.v11i2.332>.
- Kihara, P.M., (2016). *Influence of strategy implementation on the performance of manufacturing small and medium firms in Kenya*. [Doctoral Dissertation, Jomo Kenyatta University of Agriculture and Technology (JKUAT)]. <http://ir.jkuat.ac.ke/bitstream/handle/123456789/2415/>.
- King'oriah, G. K. (2004). *Fundamentals of applied statistics*. The Jomo Kenyatta Foundation.
- Kinyua, R. F. (2023). Quantitative research designs, a review of extant literature. *Journal of Technology & Socio-Economic Development*, 11(1), 192-203. <https://doi.org/10.5281/zenodo.8331844>
- Kipkemoi, K. E. (2022). *Strategic management practices and academic performance in public secondary schools in Belgut Sub-County, Kericho County, Kenya*. [Masters Thesis Kenyatta University]. <http://ir-library.ku.ac.ke/handle/123456789/26620>
- Kipkorir, J. J., Mutea, F., & Moguche, A. (2023). Business Process Reengineering Effects on Financial Performance of Commercial Banks in Meru County, Kenya. *International Journal of Professional Practice*, 11(4), 1–11. <https://doi.org/10.71274/ijpp.v11i4.315>
- Kothari, C.R. (2010). *Research methodology – methods and techniques* (2nd ed.). New Age International (P) Limited.
- Kothari, C.R., & Garg, G., (2014). *Research methodology – methods and techniques* (3rd ed.). New Age International (P) Limited.
- Krishna, S.B. & Ram, G.D (2013). Insights on strategic management practices in Nepal. *South Asian Journal of Global Business Research*. 2(2)191- 2010. <https://doi.org/10.1108/SAJGBR-03-2012-0025>: Emerald Group Publishing Limited.
- Kumar, R, (2011). *Research methodology - a step-by-step for beginners* (3rd ed.). SAGE Publications India Pvt Ltd.
- LaBranche, A., Wack, H.-O., Crawford, D., Crawford, E., & Brand, C. (2007). *Virginia rainwater harvesting manual*. The Cabell Brand Centre.
- Laiboni, S. N., Senaji, T. A., & King'oriah, G. K. (2022). Relationship between Resources and Value Creation in the Kenyan-owed Mining Enterprises in Kenya. *International Journal of Professional Practice*, 10(2), 1–14. <https://doi.org/10.71274/ijpp.v10i2.137>
- Maina, P.N. (2020). *Influence of strategy formulation on performance of state corporations in Kenya*. [Masters Thesis Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/982>
- Mambo, S. N. (2018). *Operational status of community-based health management information system and its use in selected counties in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1148>.
- Mankiw, N.G. (2000). *Macroeconomics* (4th Edition). Worth Publishers.
- Mathooko, J.M., Mathooko, F.M., & Mothooko, P.M. (2011). *Academic proposal writing* (2nd ed.) GRAMS.
- Mawia, C., & Kalunda, E. (2021). The influence of utility efficiency on financial sustainability of water service providers in Kenya. *Kabarak Journal of Research & Innovation*, 11(1), 103–113. <https://doi.org/10.58216/kjri.v11i1.98>
- Mbithi, M., Kihara, P., & Omanwa, C. N. (2024). Operational processes and performance of private chartered universities in Kenya. *Reviewed Journal International of Business Management*, 5(1), 344–351. <https://doi.org/10.61426/business.v5i1.222>,
- Mbithi, M.N. (2024). *Operational capabilities, sponsorship and performance of private chartered universities in Kenya*. [Doctoral Dissertation, Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1833>

- Mbuvi, D. (2012). *Utility reforms and performance of the urban water sector in Africa*. [Doctoral dissertation, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20121019dm>
- McGee, J., Thomas H., & Wilson, D. (2010). *Strategy analysis and practice* (2nd ed). McGraw-Hill.
- Miller, D.C., & Salkind, N.J. (2002). *Research design and social measurements* (6th ed). Sage Publishers.
- Miller, G.T. (2002). *Living in the environment* (12th ed.). Jack Carey Thomson Learning Inc.
- Miller, G.T., & Spoolman S.E. (2020). *Living in the environment* (20th ed). Cengage Learning.
- Mohammed, R. A., & Rugami, J. (2019). Competitive strategic management practices and performance of small and medium enterprises in Kenya: A case of Mombasa County. *International Journal of Current Aspects*, 3(VI), 193–215. <https://doi.org/10.35942/ijcab.v3iVI.85>
- Mrongo, L.O. (2024). *Strategy implementation, corporate governance and performance of road projects under Rural Roads Authority in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1852>
- Mugenda, A.G. (2008). *Social science research - theories and principles*. ACTS Press.
- Mugenda, O. M., & Mugenda, A.G. (2003). *Research methods, a quantitative and qualitative approach*. ACTS Press.
- Muigua, K., Wamukoya, D. & Kariuki, F. (2015). *Natural resources and environmental justice in Kenya*. Glenwood Publishers Limited.
- Muriuki, N. M. (2023). *Influence of marketing strategies and stakeholder's engagement on sales growth of coffee export in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1561>
- Muthuma, E.W. (2011). *Economic cooperation in Kenyan credit cooperatives- Exploring the role of social capital and institutions*. [Doctoral Dissertation University of the Witwatersrand]. <http://hdl.handle.net/10539/11075>
- Mutiso, E.W.N (2022). *Influence of strategic managerial practices on competitive advantage at Family Bank in Kenya*. [Masters Thesis United States International University]. <http://erepo.usiu.ac.ke/11732/7292>
- Mwangi, C.G. (2020). *Influence of customer relationship management dimensions on performance of classified accommodation facilities in Coast Region of Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/846>.
- Nachmias, C.F., & Nachmias, D. (2015). *Research method in the social sciences* (8th ed). Hodder Education.
- Ndege, J. M., Tenambergen, W., & Njoroge, K. (2022). The role of organizational culture in moderating corporate governance practice influence on faith-based hospitals performance in Kenya. *OALib*, 9(7), 1–17. <https://doi.org/10.4236/oalib.1108785>
- Newbold, P. (1995). *Statistics for business & economics* (4th ed). Prentice Hall, Inc.
- Ngueyim Nono, K. J., Mvongo, V. D., & Defo, C. (2024). Assessment of non-revenue water in the urban water distribution system network in Cameroon (Central Africa). *Water Supply*, 24(5), 1755–1767. <https://doi.org/10.2166/ws.2024.123>
- Ngure, E. G., Mutea, F., & Muema, W. (2018). *Relationship between financial structure and financial performance of listed firms in Nairobi Securities Exchange in Kenya* [Doctoral dissertation Kenya Methodist University Repository. <http://repository.kemu.ac.ke/handle/123456789/94>
- Njeru, K.G. (2015). *Strategic management practices and performance of small and medium sized enterprises in Kenya*. [Masters Thesis University of Nairobi]. <https://erepository.uonbi.ac.ke/bitstream/handle/11295/94782/>

- Njeru, P.N. (2022). *Promotional strategies, government policies and sales performance of state corporations in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1475>
- Ntombura, O., Baimwera, B., & Munga, J. (2020). Influence of strategy implementation on the performance of private universities in Kenya: A survey of universities in Nairobi County, Kenya. *South Journal of Business and Commerce Management*, 7(4). <https://doi.org/10.61426/sjbcm.v7i4.1808>
- Ntongai, D; Senaji, T. A & King'oriah, G. K. (2019). Relationship between Organizational Culture and Organizational Performance. *Journal of African Interdisciplinary Studies*. 3(7), 41 – 60. https://cedred.or.ke/jais/images/journal_articles/13/PDF
- Nyagaki, B. K., Munga, J., & Nzioki, S. (2021, August). *Influence of strategic management practices on organisational performance: A survey of commercial based parastatals in Nairobi County* [Masters Thesis, Kenya Methodist University Repository]. <http://repository.kemu.ac.ke/handle/123456789/1548>
- Ogolla Atieno, J., & Senaji, T. A. (2017). *Relationship between strategic agility and organization performance* [Doctoral dissertation, Kenya Methodist University]. Kenya Methodist University Institutional Repository. <http://repository.kemu.ac.ke/handle/123456789/1013>.
- Ogolla, J. A. (2020). *Transformation leadership, Strategic agility and performance of state corporations in Kenya*. [Doctoral Dissertation Kenya Methodist University] <http://repository.kemu.ac.ke/handle/123456789/848>
- Okongo, F.O. (2024). *Influence of strategic leadership on organizational performance: the moderating role of digital capability in the government sponsored youth empowerment organizations in Kenya*. [Doctoral Dissertation Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1856>
- Omalanga, L. S., & Onyari, E. K. (2025). Management of Water Resources in South Africa: A Systematic Review. *Limnological Review*, 25(4), 50. <https://doi.org/10.3390/limnolrev2504005>
- Organisation for Economic Co-operation and Development (2023). *OECD Environmental Performance Reviews*. OECD Environmental Performance Reviews, OECD Publishing. <https://www.oecd.org/water>.
- Otieno, T. A. (2022). *A thesis submitted in partial fulfillment of the requirements for the award of Doctor of Education degree in educational administration* [Doctoral dissertation, University of Nairobi]. University of Nairobi. <https://erepository.uonbi.ac.ke/bitstream/handle/11295/162081/>
- Patil, A.K., & Patil G.K., (2006). Rain water harvesting techniques. *National seminar on rainwater harvesting and management strategies for urban and rural sector*. National Consultancy in water resources & irrigation.
- Pearce, J. A. & Robinson, R. B. (2013). *Strategic Management- planning for domestic & global competition* (13th ed). McGraw- Hill.
- performance of private universities in Kenya. A survey of universities in Nairobi County, Kenya. *The Strategic Journal of Business & Change Management*, 7(4), 551 – 571. <https://doi.org/10.61426/sjbcm.v7i4.1808>
- Raimondi, A., Quinn, R., Abhijith, G. R., Becciu, G., & Ostfeld, A. (2023). Rainwater Harvesting and Treatment: State of the Art and Perspectives. *Water*, 15(8), 1518. <https://doi.org/10.3390/w15081518>
- Kinyua, F. R. (2023). Strategic control and competitive academic performance in selected secondary schools in Meru, Embu, Tharaka Nithi, Kitui and Machakos counties in

- Kenya. *Journal of Technology & Socio-Economic Development*, 11(1), 205–216.
<https://doi.org/10.5281/zenodo.8331336>
- Robson, W. (1997). *Strategic management & information systems* (2nd ed.). Prentice Hall.
- Russo, M.V. (2008). *Environmental management- readings and cases* (2nd ed). Sage Publications, INC.
- Shaban, N.N. (2021). *Strategic management practices and performance of National Government Constituency Development Funded Projects in Taveta Constituency, Kenya*. [Masters Thesis, Kenyatta University]. <http://ir-library.ku.ac.ke/handle/123456789/22931>
- Sivanappan, R.K (2006). Rainwater Harvesting, Conservation and management strategies for urban and Rural Sectors.
International Journal of Multidisciplinary Research (IJMR) 10(6)| DOI: 10.36713/epra2013 .
- Sterner, T. (2003). *Policy instruments for environmental and natural resource management*. Resource for the future.
- Tharaka-Nithi County. (2021). *Tharaka-Nithi County Water Services Act, 2021*. Kenya Law. <https://www.kenyalaw.org/>
- Thomson , A.A., Strickland III, A.J. (1998). *Strategic management – concepts and cases* (10th ed). McGraw-Hill.
- Thomson, A.A., Peteraf, M.A., Gamble, J.E., & Strickland, A.J. (2022). *Crafting & executing strategy - The quest for competitive advantage* (23rd ed) McGraw-Hill.
- Wan, J., Wang, L., Saade, R., Guan, H., & Liu, H. (2022). Empirical Analysis of Strategic Management in Inter-Governmental Organization. *Administrative Sciences*, 12(3), 83. <https://doi.org/10.3390/admsci12030083>
- Water Services Regulatory Board. (2022). *A performance report of Kenya’s Water Services Sector – 2020/21* (Impact Report, Issue 14). WASREB. https://wasreb.go.ke/wp-content/uploads/2023/08/Wasreb_Impact_Report_14.pdf/
- Weetman, P. (2006). *Financial Management and accounting - An introduction*. (4th ed.), Prentice Hall.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180. <https://doi.org/10.1002/smj.4250050207>
- World Bank Group (2022). *Performance of water utilities in Africa*. <https://thedocs.worldbank.org/en/doc/197501544810224462-0090022018/related/Session040Meas10on0Utilities0160413.pdf>
- World Health Organization (2020). *Rainwater collection and storage*. Water, Sanitation, Hygiene and Health. www.who.int/water_sanitation_health .
- World Health Organization. (2022). *Guidelines for drinking-water quality* (4th ed., incorporating the 1st and 2nd addenda). World Health Organization. <https://apps.who.int/iris/handle/10665/354218>

APPENDICES

Appendix A : Questionnaire

PART 1: BIO-DATA

1. What is the name of your organisation? (Optional) _____
2. Indicate the region (s) your organisation provide water services?

3. How long have you been working in your current position? _____
4. Please indicate your gender? Male [☐] Female [☐] Other [☐]
5. What is your age bracket?
18-25 years [☐]
26-35 years [☐]
36-50 years [☐]
Over 50years [☐]
6. What is your highest level of education?
Primary [☐]
Secondary [☐]
Tertiary/TVET [☐]
Degree [☐]
Postgraduate degree [☐]
Other (Specify) _____
7. How many years have you served in this organisation?
Below 1 year [☐]
1-5 years [☐]
5-10 years [☐]
Over 10years [☐]
8. Your current position is?
 - i. Management [☐]
 - ii. Operations [☐]
 - iii. Engineer [☐]

- iv. Marketing []
- v. Ordinary employee []
- vi. Other (Specify) _____

PART 2: STRATEGIC MANAGEMENT PRACTICES

(i) Environmental scanning

- a) In a scale of 1 to 5 for each of the statements in the tables below, indicate with a tick (✓) in the spaces provided the option that you consider most appropriately applies to your organisation where 5 is the most favourable and 1 is the least favourable.

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

	Statement	1 SD	2 D	3 N	4 A	5 SA
1.	We regularly gather information in the environment based on customer views and suggestions					
2.	Our new strategies are always based on information we collect from environment					
3.	We have adequate tools to collect data required					
4.	The information we gather helps us to understand our market better					
5.	We regular benchmark with other water service providers in the region					
6.	We often train our staff on how to obtain relevant and quality information from our clients					
7.	The information obtained from the environment enables us to come up with superior strategies					
8.	We continually monitor our supply lines to ensure they are serving customers well					
9.	We have built overtime a reliable water supply sources to avoid rationing/shortages					
10.	We often conduct meetings to evaluate usefulness of new information from market					
11.	We have adequate personnel who gather information needed by the organization					
12.	We have accumulated adequate experience on how to serve our clients better					
13.	We use data to revise our strategies regularly					
14.	Our customers often rate our services highly					

- b) Indicate various data sources your organization uses to make strategies?

- c) I am aware that our organization is involved in data collection to make new strategies.

Aware [] Not Aware []

- d) Our managers always consult all the stakeholders when reviewing and making new strategies. **Yes [] No [] No idea []**

- e) In your own opinion, indicate whether you feel you are adequately involved in data gathering and strategy formulation.

Not involved []

Partially involved[]

Highly involved []

- f) Indicate two main tools used in data gathering in your organization in the recent past

1) _____

2) _____

(ii) Strategy Formulation

- a) In a scale of 1 to 5 for each of the statements in the tables below, indicate with a tick (✓) in the spaces provided the option that you consider most appropriately applies to your organisation where 5 is the most favourable and 1 is the least favourable.

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

	Statement	1 SD	2 D	3 N	4 A	5 SA
1.	We involve Board of Directors in strategy formulation					
2.	Management regularly clarifies vision and mission statements to staff and customers					
3.	Our vision and mission statements are well aligned to the changes in the environment					
4.	Meetings are held on a regular basis to review our plans/strategies					
5.	We have good plans and budget for our activities					
6.	We set strategic objectives periodically with clear goals and targets					
7.	Our policies are crafted collectively by staff members and approved by top management before being implementation.					
8.	We regularly go for staff retreats for planning, budgeting and policy formulation					
9.	All members of staff always participate during strategic planning process.					
10.	Our organization conducts SWOT analysis					
11.	Our organization use SWOT analysis feedback to evaluate and make new strategies					
12.	Our manager consults opinion of staff when formulating strategies					
13.	We normally include quality standards for our water in our plans					
14.	During planning we usually evaluate the scope of our water coverage by area and quantity.					

- b) Indicate the problems your organization experiences during strategy formulation stage_____

- c) In your opinion, please indicate how you can improve strategies used in your organization

(iii) Strategy Implementation

- a) In a scale of 1 to 5 for each of the statements in the tables below, indicate with a tick (✓) in the spaces provided the option that you consider most appropriately applies to your organisation where 5 is the most favourable and 1 is the least favourable.

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

	Statement	1 SD	2 D	3 N	4 A	5 SA
1.	Our leaders meet regularly to review and steer on-going activities					
2.	Our organization matches the existing structure with the new strategy being implemented					
3.	Our organization doesn't keep vacant positions open					
4.	We have a clear reporting authority					
5.	We have adequate knowledge, experience and skills to do jobs					
6.	There is good communication to all staff					
7.	A central Command Unit coordinates strategy implementation					
8.	We work within our rules, regulations and policies					
9.	Management provides adequate resources to do every job					
10.	There is adequate supervision of all activities					
11.	Teamwork is encouraged					
12.	We have adequate tools, equipment and technology to do our work					
13.	We train our staff regularly					
14.	Our employees are often rewarded for good work					

- b) In your opinion, please indicate what have not been done well when implementing our strategies

(iv) Strategy Control

- a) In a scale of 1 to 5 for each of the statements in the tables below, indicate with a tick (✓) in the spaces provided the option that you consider most appropriately applies to your organisation where 5 is the most favourable and 1 is the least favourable.

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

	Statement	1 SD	2 D	3 N	4 A	5 SA
1.	We regularly review our performance against set standards					
2.	Action is taken on weak areas of operations					
3.	We undertake staff performance appraisals regularly					
	Statement	1 SD	2 D	3 N	4 A	5 SA
4.	We have a clear reward policy					

5.	Most of staff are satisfied with the organisation's recruitment and reward system					
6.	Promotions are merit based					
7.	Weak areas are identified and remedied					
8.	We use the feedback on evaluation to make new strategies or review the existing ones					
9.	Disciplinary cases are handled quickly and amicably					
10.	Timely solutions are provided on existing performance gaps					
11.	Performance deviations are corrected in a timely version					

- b) Indicate areas that need improvement in your organization so that you can match demand of water to your customer requirements
-
-

PART 3: WATER DEMAND

(a) In a scale of 1 to 5 for each of the statements in the tables below, indicate with a tick (✓) in the spaces provided the option that you consider most appropriately applies to your organisation where 5 is the most favourable and 1 is the least favourable.

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

	Statement	1 SD	2 D	3 N	4 A	5 SA
1.	We have satisfactorily met our customer demand for water overtime					
2.	Our water supply system always meets customers' demands					
3.	We rarely ration water supply by zones					
4.	Customers are normally satisfied with our water quality					
5.	Our pricing policy is fair to our customers					
6.	We have few monthly water disconnections					
7.	We have few water bill defaulters					
8.	We have few illegal connections in our system					
9.	We face supply changes due to restricted wayleaves					
10.	We have modernised our supply lines in line with customer demand					
11.	The demand of our water services have been rising overtime					
12.	We are unable to meet our customer's demand for water					

(b) In your opinion, indicate three areas which you think your organization should improve to meet water demand for your customers

PART 4: Organizational Performance

(a) In a scale of 1 to 5 for each of the statements in the table below, indicate with a tick (✓) in the spaces provided the option that you consider most appropriately applies to your organisation where 5 is the most favourable and 1 is the least favourable.

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

	Statement	1 SD	2 D	3 N	4 A	5 SA
1	In the last five years, our customers feedback has been positive and are satisfied with our services					
2	Customer complaints have reduced in the last five years					
3	The number of customers in our organisation has increased significantly in the last five years					
4	We have connected more customers as planned in the last five years					
5	Our organisation has been making good profits in the last five years					
6	Our revenue collected has increased significantly in the last five years					
7	Our audited accounts have shown high ROA in the last three years					
8	Our audited accounts have shown high ROE in the last three years					
9	We finance most of our operations from revenue collected					
10	Our geographical area that we serve has expanded significantly in the last five years					
11	We are able to finance our capital expenditures from revenue collected without taking loans					
12	Our employee base has increased in the last five years					
13	We have acquired latest equipment and technology in the last five years					
14	The organization's research funds have been increasing overtime in the last five years					
15	We have diversified and expanded our water supply sources in the last five years					

END: Thank you very much for your participation

Appendix B: Introduction letter to respondents

Miriti Erastus Mwongera
Kenya Methodist University (KeMU)
NAIROBI
13th February, 2025

Dear Respondent,

**RE: ACADEMIC RESEARCH ON STRATEGIC MANAGEMENT PRACTICES,
DEMAND AND PERFORMANCE OF WATER SERVICE PROVIDERS IN THE
LOWER-EASTERN COUNTIES OF KENYA**

I am undertaking a research on the above title as a PhD. student at Kenya Methodist University. This research is expressly for academic purposes but the findings are expected to benefit in various ways many stakeholders in the water sector including the water services providers in Kenya. My proposed source of data for the research is the licensed water service providers in the Lower-Eastern Counties of Kenya. I have obtained the requisite permit to conduct this research from the National Commission for Science Technology and Innovation (NACOSTI) being the institution that promotes, regulates, advises and coordinates research undertakings in Kenya.

As your organisation is among those I am authorised to draw data from, I am requesting you to kindly spare your precious time to answer for me the attached questionnaire within a short time to facilitate my timely compilation of the analysis. Kindly note that I am not looking for any specific answer to any question. There is therefore no correct answer to any question and the only right answers are those that you will provide honestly and objectively on the questionnaire. I am therefore requesting you to fill the entire questionnaire completely, honestly, objectively and at your own free will, without influence or bias. On my side, I assure you of total confidentiality and protection of the integrity of your personal and the institutional information that you will provide through this questionnaire.

Finally, let me thank you in advance most sincerely for agreeing to participate in this research as one of the respondents. Your effort and time is highly appreciated.

Yours Sincerely,

MIRITI ERASTUS MWONGERA
PhD Researcher
Reg. BUS-4 -2250-1/2012
KENYA METHODIST UNIVERSITY (KeMU)

Appendix C: Introduction letter to Embu Water & Sanitation Company Ltd

Miriti Erastus Mwongera
Kenya Methodist University (KeMU)
NAIROBI
erastus.miriti457@gmail.com
27th February, 2025

The Managing Director,
Embu Water & Sanitation Company Ltd
P.O. Box 2142,
EMBU.

Dear Sir,

**RE: ACADEMIC RESEARCH ON STRATEGIC MANAGEMENT PRACTICES,
DEMAND AND PERFORMANCE OF WATER SERVICE PROVIDERS IN THE
LOWER-EASTERN COUNTIES OF KENYA**

I am undertaking a research on the above title as a PhD. student at Kenya Methodist University. This research is expressly for academic purposes but the findings are expected to benefit in various ways many stakeholders in the water sector including the water services providers in Kenya. My proposed sources of data for the research are all licensed water service providers in the Lower-Eastern Counties of Kenya. Accordingly, I have obtained the requisite permit (Copy attached) from the National Commission for Science Technology and Innovation (NACOSTI) being the institution that promotes, regulates, advises and coordinates research undertakings in Kenya.

Embu County is among the counties that I am authorised by NACOSTI to collect data from and **Embu Water & Sanitation Company Ltd** is the only institution that qualifies for this study in EMBU County.

I am therefore requesting you to kindly authorise me to collect data from your esteemed company using the attached questionnaire. I propose to issue 20 questionnaires to your top cadre staff and assure you of total confidentiality and protection of the integrity of all personal and the institutional information that will be provided through the questionnaire and of my total cooperation and compliance with your conditions with regard to this exercise.

Yours faithfully,

MIRITI ERASTUS MWONGERA
PhD Researcher
Reg. BUS-4 -2250-1/2012
KENYA METHODIST UNIVERSITY (KeMU)

Attachments:

Appendix D: Introduction Letter to Kitui Water & Sanitation Company Ltd

Miriti Erastus Mwongera
Kenya Methodist University (KeMU)
NAIROBI
erastus.miriti457@gmail.com
0722207212
9th March, 2025

**The Managing Director,
Kitui Water & Sanitation Company Ltd
P.O. Box
KITUI.**

Dear Sir,

**RE: ACADEMIC RESEARCH ON STRATEGIC MANAGEMENT PRACTICES,
DEMAND AND PERFORMANCE OF WATER SERVICE PROVIDERS IN THE
LOWER-EASTERN COUNTIES OF KENYA**

I am undertaking a research on the above title as a PhD. student at Kenya Methodist University. This research is expressly for academic purposes but the findings are expected to benefit in various ways many stakeholders in the water sector including the water services providers in Kenya. My proposed sources of data for the research are all licensed water service providers in the Lower-Eastern Counties of Kenya. Accordingly, I have obtained the requisite permit (Copy attached) from the National Commission for Science Technology and Innovation (NACOSTI) being the institution that promotes, regulates, advises and coordinates research undertakings in Kenya.

Kitui County is among the counties that I am authorised by NACOSTI to collect data from and **Kitui Water & Sanitation Company Ltd** is the only institution that qualifies for this study in Kitui County.

I am therefore requesting you to kindly permit me to collect data from your esteemed company using the attached questionnaire. I propose to issue 25 questionnaires to your top cadre staff and assure you of total confidentiality and protection of the integrity of all personal and the institutional information that will be provided through the questionnaire and of my total cooperation and compliance with your conditions with regard to this exercise.

Yours faithfully,

MIRITI ERASTUS MWONGERA
PhD Researcher
Reg. BUS-4 -2250-1/2012
KENYA METHODIST UNIVERSITY (KeMU)

Attachments:

Appendix E: Introduction Letter to Mbooni Water & Sanitation Company Ltd

Miriti Erastus Mwongera
Kenya Methodist University (KeMU)
NAIROBI

erastus.miriti457@gmail.com

0722 207212

21st March, 2025

**The Managing Director,
Mbooni Water & Sanitation Company Ltd
P.O. Box 77- 90113 - Tawa
MBOONI.**

Dear Sir,

**RE: ACADEMIC RESEARCH ON STRATEGIC MANAGEMENT PRACTICES,
DEMAND AND PERFORMANCE OF WATER SERVICE PROVIDERS IN THE
LOWER-EASTERN COUNTIES OF KENYA**

I am undertaking a research on the above title as a PhD. student at Kenya Methodist University. This research is expressly for academic purposes but the findings are expected to benefit in various ways many stakeholders in the water sector including the water services providers in Kenya. My proposed sources of data for the research are all licensed water service providers in the Lower-Eastern Counties of Kenya. Accordingly, I have obtained the requisite permit (Copy attached) from the National Commission for Science Technology and Innovation (NACOSTI) being the institution that promotes, regulates, advises and coordinates research undertakings in Kenya.

Makueni County is among the counties that I am authorised by NACOSTI to collect data from and **Mbooni Water & Sanitation Company Ltd** is one of the three institution that qualifies for this study in Makueni County.

I am therefore requesting you to kindly authorise me to collect data from your esteemed company using the attached questionnaire. I propose to issue 15 to 20 questionnaires to your top cadre staff and assure you of total confidentiality and protection of the integrity of all personal and the institutional information that will be provided through the questionnaire and of my total cooperation and compliance with your conditions with regard to this exercise.

Yours faithfully,

MIRITI ERASTUS MWONGERA

PhD Researcher

Reg. BUS-4 -2250-1/2012

KENYA METHODIST UNIVERSITY (KeMU)

Attachments:

Appendix F: Introduction Letter to The County Secretary, Head of County Public Service, Makueni.

Miriti Erastus Mwongera
Kenya Methodist University (KeMU)
NAIROBI
erastus.miriti457@gmail.com
24th February, 2025

**The County Secretary,
Head of County Public Service,
P.O. Box 78-90300
MAKUENI.**

**RE: ACADEMIC RESEARCH ON STRATEGIC MANAGEMENT PRACTICES,
DEMAND AND PERFORMANCE OF WATER SERVICE PROVIDERS IN THE
LOWER-EASTERN COUNTIES OF KENYA**

I am undertaking a research on the above title as a PhD. student at Kenya Methodist University. This research is expressly for academic purposes but the findings are expected to benefit in various ways many stakeholders in the water sector including the water services providers in Kenya. My proposed sources of data for the research are all licensed water service providers in the Lower-Eastern Counties of Kenya. Accordingly, I have obtained the requisite permit (Copy attached) from the National Commission for Science Technology and Innovation (NACOSTI) being the institution that promotes, regulates, advises and coordinates research undertakings in Kenya.

Makueni County is among the counties that I am authorised by NACOST to collect data from and the following Licensed Water Service Providers are my target institutions:

1. WOWASCO in Wote
2. KIBWASCO in Kibwezi
3. MBOWASCO in Mbooni

I am therefore requesting you to kindly authorise me to collect data from the above companies which are within your County using the attached questionnaire. I assure you of total confidentiality and protection of the integrity of all personal and the institutional information that will be provided through the questionnaire and of my total cooperation and compliance with your conditions with regard to this exercise.

Yours Sincerely,

MIRITI ERASTUS MWONGERA
PhD Researcher
Reg. BUS-4 -2250-1/2012
KENYA METHODIST UNIVERSITY (KeMU)

Appendix G: KeMU Letter of Clearance to Undertake Research



KENYA METHODIST UNIVERSITY

P. O. Box 267 Meru - 60200, Kenya

Fax: 254-64-30162

Tel: 254-064-30301/31229/30367/31171

Email: deanrd@kemu.ac.ke

BOARD OF POSTGRADUATE STUDIES

Our Ref: KeMU/NACOSTI/BUS/54/2024

December 16, 2024

Commission Secretary
National Commission for Science, Technology and Innovations
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: MIRITI ERASTUS MWONGERA (REG. NO. BUS-4-2250-1/2012)

This is to confirm that the above named is a bona fide student of Kenya Methodist University, in the Department of Business Administration, undertaking a Doctoral Degree in Business Administration and Management. He is conducting research on; "Strategic Management Practices, Demand and Performance of Water Service Providers in the Lower-Eastern Counties of Kenya".

We confirm that his research proposal has been defended and approved by the University.

In this regard, we are requesting your office to issue a research license to enable him collect data.

Any assistance accorded to him will be highly appreciated.

Yours sincerely,


Dr. Nancy Rintari (PhD)
Director, Board of Postgraduate Studies

Cc: Dean, KeMU Business School
CoD, Business Administration
Postgraduate Coordinator - BA
Supervisors

Appendix H: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 847510	Date of Issue: 13/February/2025
RESEARCH LICENSE	
	
This is to Certify that Mr. Erastus Mwongera Miriti of Kenya Methodist University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Embu, Kitui, Machakos, Makueni, Meru, Tharaka-Nithi on the topic: Strategic Management Practices, Demand and Performance of Water Service Providers in the Lower-Eastern Counties of Kenya for the period ending : 13/February/2026.	
License No: NACOSTI/P/25/415842	
Applicant Identification Number 847510	 Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION	
Verification QR Code	
	
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See overleaf for conditions	

Appendix I: The World's Water Supply

Location	Percentage
Oceans	97.2
Atmosphere	0.001
Rivers and Streams	0.0001
Ground water	0.31
Lakes (fresh water)	0.01
Ice caps and glaciers	2.15

Source: Botkin, D.B. & Keller, E.A. (2011). *Environmental science- Earth as a living planet* (8th Edition): John Wiley & Sons Inc.

Appendix J : Breakdown of global freshwater

Location	Percentage
Ice caps/sheets and glaciers	99.357
Lakes(fresh water)	0.33
Lakes (saline)	0.28
Atmospheric Moisture	0.03
Rivers and Streams	0.003
Total	100

Source: Christopherson, R.W. (2009). *Geosystems - An introduction to physical geography (7th Edition)*. Pearson Education Inc.

Appendix K : Comparative Usage of Water

Item	Description of the item	Unit of count or	Amount of water need in
No.	produced	measure	litres to produce one unit
4.	Automobile	1 No.	400,000
5.	Cotton	1kg	10,500
6.	Aluminium	1kg	9,000
7.	Grain-fed beef	1kg	7,000
8.	Rice	1kg	5,000
9.	Corn	1kg	1,500
10.	Paper	1kg	880
11.	Steel	1kg	220

Source: Miller, G.T. (2002). *Living in the environment* (12th Edition). Jack Carey Thomson Learning Inc.

Appendix L : Summary of Published Annual Financial Reports for Water Service Providers in the Lower-Eastern Counties of Kenya.

No.	Organisation	Attribute	2020	2021	2022	2023	2024
1.	Kibwezi-Makindu Water and Sanitation Services Company Limited (KIBMAWASCO)	Revenue (KShs)	58.61m	65.81m	120.2m	87.2m	86.8
		Net Profit	(4.25m)	(3.46m)	13.3m	(23.2m)	(19.3m)
		Total Assets	36.13m	43.16 m	61.6m	85.8m	118.7m
		Equity	(33.78m)	(37.24m)	(24.15m)	(48.52m)	(68.83m)
		ROA	Negative	Negative	21.6%	Negative	Negative
		ROE	Negative	Negative	Negative	Negative	Negative
2.	Nithi Water and Sanitation Company (NIWASCO)	Revenue	70.7M	104.5m	94.7m	87.5m	82.6m
		Net Profit	(276,451)	(6.07m)	(13m)	(19.4m)	(18.95m)
		Total Asset	278.4m	285m	275m	279m	282m
		Equity /Reserves	205.8m	248m	239m	226m	207m
		ROA	Negative	Negative	Negative	Negative	Negative
		ROE	Negative	Negative	Negative	Negative	Negative
3.	Meru Water and Sewerage Services (MEWASS)	Revenue	205.9m	216.6m	240.1m	N/A	N/A
		Net Profit	16.0m	8.34m	1.02m	N/A	N/A
		Total Assets	212.0m	234.9m	232.6m	N/A	N/A
		Equity/Fina ncing	196.3m	204.5m	205.4m	N/A	N/A
		ROA	7.55%	3.55%	0.44%	N/A	N/A
		ROE	8.15%	4.08%	0.5%	N/A	N/A
4.	Kitui Water and Sanitation Company Ltd (KITWASCO)	Revenue	268.lm	279.2m	356.3m	233.5m	279.9m
		Net Profit	2.461m	762,322	37.2m	(42.8m)	(32.8m)
		Total Asset	244.7m	333.9m	304.5m	295.9m	281.7m
		Equity/ Reserves	133.9m	185.9m	172.4 m	129.6m	96.8m
		ROA	1.0%	0.23%	12.2%	Negative	Negative
		ROE	1.84%	0.41%	21.6%	Negative	Negative
5.	Embu Water and Sanitation Company Limited (EWASCO)	Revenue	364.97m	721.6m	(Q3) 316.9m	438.3m	450.4m
		Net Profit	4.59m	10.67m	1.63m	(93.41)	(66.62)
		Total Asset	1.175b	1.074b	1.018b	968.9m	950.1m
		Equity	362.3m	568.6m	547.1m	487.3m	456.4m
		ROA	0.39%	1.0%	0.16%	Negative	Negative
		ROE	1.3%	1.9%	0.3%	Negative	Negative
6.	Wote Water and Sewerage Company Limited (WOWASCO)	Revenue	N/A	41.19m	46.8m	42.6m	N/A
		Net Profit	N/A	(1.21m)	(586,416)	(7.94m)	N/A
		Total Asset	N/A	15.1m	20.67m	31.57m	N/A
		Equity/Rese rves	N/A	(9.565m)	(6.229m)	(958,421)	N/A
		ROA	N/A	Negative	Negative	Negative	N/A
		ROE	N/A	Negative	Negative	Negative	N/A
7.	Machakos Water and Sewerage	N/A	N/A	N/A	The 2022	N/A	N/A

	Company (MAWASCO)				accounts received a qualified opinion.		
8.	Meru County Rural Water and Sanitation Company Ltd (MERUWASCO) Formerly known as Imetha WASCO	Revenue	58.5m	58.4m	54.3m	51.5m	N/A
		Net Profit	7.95m	2.23m	(5.68m)	(6.76m)	
		Total Asset	33.7m	41.6m	80.0m	88.4m	
		Equity/Reserves	33.703m	12.8m	23.1m	16.3m	
		ROA	23.59%	5.36%	Negative	Negative	
		ROE	23.59%	17.4%	Negative	Negative	
9.	Mbooni Water and Sanitation Company Limited (MBONWASCO)	Revenue	1.264m	3.834m	5.718m	4.073m	N/A
		Net Profit	(344,064)	(91,351)	423,911	(1.183M)	
		Total Asset	2.467m	2.624m	3.062m	3,074m	
		Equity/Reserves	N/A	N/A	(2.595m)	(3.78m)	
		ROA	Negative	Negative	13.8%	Negative	
		ROE	N/A	N/A	Negative	Negative	
10.	Murugi Mugumango Water Service Provider (Society)	Revenue	14.01m	14.88m	18.3m	17.94m	18.80m
		Surplus or loss	(4.72m)	(6.227m)	(3.72m)	(5.25m)	(6,16m)
		Total Asset	85.93m	88.32m	84.9m	82.28m	78,18 m
		Equity/Reserves	49.33m	51.98m	48.6m	45.98 m	41.88 m
		ROA	Negative	Negative	Negative	Negative	Negative
		ROE	Negative	Negative	Negative	Negative	Negative

Source: Adopted from the published Digital Repository of the Parliament of Kenya, Embu County Government Repository and the annual accounts of Murugi-Mugumango Water Society Records.