

**FINANCIAL RESOURCE MOBILIZATION STRATEGIES, INTELLECTUAL
CAPITAL AND FINANCIAL SUSTAINABILITY OF UNIVERSITIES IN
KENYA**

HUMPHREY MWENDA MURUGU

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE CONFERMENT OF DEGREE OF DOCTOR OF
PHILOSOPHY BUSINESS ADMINISTRATION AND MANAGEMENT
(FINANCE) OF KENYA METHODIST UNIVERSITY**

OCTOBER, 2025

DECLARATION

I hereby declare that this thesis is my original work and has not been presented in any university for a degree.

Signature

Date

Humphrey Mwenda Murugu

BUS-4-0120-1/2022

Recommendation

We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

Signature

Date.....

Dr. Clemence Omanwa, PhD

Kenya Methodist University

Signature

Date.....

Dr. Wilson Muema, PhD

Kenya Methodist University

DEDICATION

This thesis is dedicated to my dear wife Agnes Mwenda whose dedication, unwavering support and encouragement enabled me to achieve this dream. I also dedicate this thesis to my dear parents David Murugu, and Hellen Murugu, who have passionately sacrificed for my education since childhood and encouraged me throughout this academic journey. The thesis is additionally dedicated to my children; Goodness, Precious and Giftmine for their understanding during my absence to study for the PhD.

ACKNOWLEDGEMENT

I would like to thank the Almighty God for giving me the opportunity and strength to pursue my education to the highest level. It is through His abundant grace that this research has come to fruition. This work would not have been possible without the unfailing scholarly patronage from my Supervisors, Dr. Clemence Omanwa and Dr. Wilson Muema, who possess the most incredible combination of decisive wit and intellect, boundless energy and commitment that helped me shape this thesis to a meaningful academic document.

Appreciation is extended to my wife Agnes and my three children Goodness, Precious and Giftmine. Thank you for your unwavering love, encouragement and support throughout my thesis studies. You have been steadfast with emotional, financial and intellectual support and for being a source of inspiration throughout the long demanding period of this research.

To my longtime friend and researcher Prof. Geoffrey Muchiri Muketha, I express my appreciation for your love and prayers and in mentoring me throughout the entire process and the useful insights that you willingly gave. Special thanks go to my brother and mentor Mr. Moses Ikiara for his unwavering support and encouragement throughout my PhD Journey. Finally, my appreciation goes to the Dean, KeMU Business School and all the Lecturers who diligently took me through the course work and gave continuous guidance throughout the thesis journey.

ABSTRACT

Universities in Kenya, both public and private, are increasingly facing financial distress arising from declining government capitation for public universities, delayed or non-remittance of funds for government-sponsored students in private universities, rising operational costs, growing debts, and deteriorating infrastructure. These challenges have made financial sustainability a central concern in the higher education sector. Achieving this sustainability requires universities to diversify revenue sources while maintaining educational quality and institutional stability. This study examined the influence of financial resource mobilization strategies on the financial sustainability of universities in Kenya and the moderating effect of intellectual capital. The specific objectives were to determine the influence of business units, financial management practices, endowment fund mobilization, and investment in technology-enhanced learning on financial sustainability. Anchored in Resource Mobilization Theory and supported by Modern Portfolio Theory, Resource Dependency Theory, and Intellectual Capital Theory, the study adopted a positivist philosophy and employed a mixed-methods approach. A sample of sixty-four universities comprising of thirty-four public and thirty private was drawn from seventy-six chartered universities in Kenya using Yamane's formula and stratified sampling. Data were collected from two hundred and ninety senior university officers through structured questionnaires and from audited financial statements covering the period 2018–2022. Instrument reliability was confirmed with a Cronbach's alpha coefficient above 0.9, exceeding the acceptable 0.7 threshold. Data were analyzed using descriptive and inferential statistics, with hypotheses tested through binary logistic regression at a 95% confidence level ($\alpha = 0.05$). The findings revealed that business units, financial management practices, endowment fund mobilization, and investment in technology-enhanced learning each had a positive and significant effect on financial sustainability ($p < 0.05$). Intellectual capital significantly moderated these relationships, enhancing the predictive strength of financial resource mobilization strategies. The study concludes that integrating financial resource mobilization with intellectual capital development is vital for institutional resilience and long-term financial stability. It recommends that universities should strengthen entrepreneurial ventures, adopt prudent financial governance, institutionalize endowment management, and invest strategically in technology and knowledge assets to ensure sustainable growth and competitiveness within Kenya's higher education sector.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
LIST OF TABLES.....	x
LIST OF FIGURES.....	xiii
ABBREVIATIONS AND ACRONYMS.....	xiv
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Background of The Study	1
1.2 Statement of The Problem.....	9
1.3 Purpose of the Study	11
1.4 Objectives of the Study	12
1.5 Research hypothesis.....	12
1.6 Justification of the Study.....	13
1.7 Scope of the Study	15
1.8 Limitation of the Study	15
1.9 De-limitation of the Study.....	16
1.10 Significance of the Study	17
1.11 Assumptions	19

CHAPTER TWO.....	20
LITERATURE REVIEW.....	20
2.1 Introduction.....	20
2.2 Theoretical Review	20
2.3 Empirical Review	40
2.4 Theoretical Framework.....	108
2.5 Conceptual Framework	109
2.6 Operational Framework.....	122
2.7 Research Gaps	123
2.8 Summary of Literature review.....	129
CHAPTER THREE.....	130
RESEARCH METHODOLOGY	130
3.1 Introduction	130
3.2 Research philosophy	130
3.3 Research Design	132
3.4 Target Population.....	133
3.5 Sampling Frame	134
3.6 Sampling technique and sample size.....	135
3.7 Data collection instruments	136
3.8 Data Collection Procedure.....	137
3.9 Pre-test.....	138
3.10 Data analysis and Presentation	141
3.11 Diagnostic Tests.....	144

3.12 Ethical Considerations.....	150
CHAPTER FOUR	151
RESULTS AND DISCUSSION.....	151
4.1 Introduction	151
4.2 Response Rate.....	151
4.3 Reliability Analysis.....	151
4.4 Demographic Information.....	152
4.5 Frequency Analysis of Study Variables	155
4.6 Analysis of Secondary Data	190
4.7 Analytical Model Diagnostic Tests.....	196
4.8 Chi-Square Tests and Hypothesis Testing.....	198
4.9 Binary Regression Analysis	206
4.10 Testing the Moderation Effect of Intellectual Capital on the Relationship Between Financial Resource Mobilization Strategies and Financial Sustainability	215
4.11 Summary of Hypothesis.....	228
CHAPTER FIVE	230
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS.....	230
5.1 Introduction	230
5.2 Summary of Results.....	230
5.3 Conclusion	235
5.4 Contribution to the body of knowledge	239
5.5. Recommendations.....	241
5.6 Suggestions for further research	241

REFERENCES	243
APPENDICES	264
Appendix I: Research Questionnaire	264
Appendix II: Secondary Data Collection Sheet.....	271
Appendix III: List of Public and Private Universities in Kenya.....	272
Appendix IV: Ethical Clearance Letter	275
Appendix V: Introduction Letter to NACOSTI	277
Appendix VI: NACOSTI Research Permit.....	278

LIST OF TABLES

Table 2.1: Financial ratios for measuring financial sustainability.....	120
Table 2.2: Summary of Research Gaps	127
Table 4.1: Reliability of Research Instruments	152
Table 4.2: Gender of the Respondents.....	153
Table 4.3: Age Bracket of the University	154
Table 4.4: Business units	156
Table 4.5: Financial management practices	162
Table 4.6: Endowment Funds Mobilization.....	167
Table 4.7: Investment in Technology Enhanced Learning	173
Table 4.8: Intellectual capital.....	179
Table 4.9: Financial Sustainability.....	185
Table 4.10: Tests of Normality	197
Table 4.11: Chi-Square Analysis for Business Units and Financial Sustainability.....	199
Table 4.12: Business units and financial sustainability cross tabulation	199
Table 4.13: Chi-Square analysis; financial management practices and financial sustainability.....	200
Table 4.14: Financial management practices and financial sustainability cross tabulation	201
Table 4.15: Chi-Square Analysis; Endowment Funds Mobilization and Financial Sustainability	202
Table 4.16: Endowment Funds Mobilization and financial sustainability cross tabulation	

.....	202
Table 4.17: Chi-Square Analysis; Technology enhanced learning and Financial Sustainability	203
Table 4.18: Investment in Technology Enhanced Learning and financial sustainability cross tabulation	204
Table 4.19: Summary Chi-Square Test Analysis for Measuring the Association between each Variable and Financial Sustainability	205
Table 4.20: Model Summary	207
Table 4.21: Variables in the equation	207
Table 4.22: Model Summary	208
Table 4.23: Variables in the equation	208
Table 4.24: Model Summary	209
Table 4.25: Variations in the Equation	210
Table 4.26: Model Summary	210
Table 4.27: Variations in the Equation	211
Table 4.28: Model Summary of Binary regression analysis accounting for each variable contribution to Financial Sustainability	211
Table 4.29: Relationship Between Independent and Dependent Variables and The Extent of Their Likelihood In Influencing Financial sustainability (Binary logistic Regression Variables In The Equation)	213
Table 4.30: Summary of Multivariate Logistic Regression determining the influence of financial resource mobilization strategies on financial sustainability (without moderating variable)	216

Table 4.31: Summary model without moderating variable (Intellectual Capital).....	218
Table 4.32: Summary of Multivariate Logistic Regression determining the influence of financial resource mobilization strategies on financial sustainability (with moderating variable)	219
Table 4.33: Model Summary with moderating variable (Intellectual Capital)	220
Table 4.34: Comparison between the model without moderating variable (Intellectual Capital) and the model with moderating variable	222
Table 4.35: Comparison between summary model with moderating variable (Intellectual Capital) and the one without125.519a.....	224
Table 4.36: Model with Interaction Terms	225
Table 4. 37: Comparison of Model Fit Statistics at Each Moderation Step	227
Table 4.38: Summary of Hypothesis.....	229

LIST OF FIGURES

Figure 2.1: Conceptual Framework.....	111
Figure 2.2: Operational Framework	122
Figure 4.1: Total Assets Turnover.....	191
Figure 4.2: Debt Ratio	192
Figure 4.3: Net Profit Ratio	193
Figure 4.4: Current Asset Ratio.....	194
Figure 4.5: Debt to Equity Ratio	195

ABBREVIATIONS AND ACRONYMS

CEE	Capital Employed Efficiency
CSOs	Civil Society Organizations
CUE	Commission for University Education
DUC	Differentiated Unit Costs
DVC	Deputy Vice Chancellor
GoK	Government of Kenya
HC	Human Capital
HCE	Human Capital Efficiency
HELB	Higher Education Loans Board
IC	Intellectual Capital
ICT	Information Communication Technology
IGUs	Income Generating Units
K-R	Kunder-Richardson
MFIs	Micro-Finance Institutions
MoEVT	Ministry of Education and Vocational Training
NGOs	Non-Governmental Organizations
PPP	Public-Private Partnerships
RC	Relational Capital
SACCO	Savings and Credit Co-operative Organization
SCE	Structural Capital Efficiency
TEL	Technology Enhanced Learning

TVETs	Technical and Vocational Education and Training
UDSM	University of Dar-es Salaam
UNES	University of Nairobi Enterprise Services
USA	United States of America
USAID	United States Agency for International Development
VAIC	Value Added Intellectual Capital
VIF	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Financial resource mobilization strategies: Actions an institution undertakes to obtain new/additional resources and to use existing resources more efficiently.

Financial sustainability: The ability to continuously maintain or improve an institution's financial viability so it can achieve its mission, goals, and objectives over the long term.

Technology Enhanced Learning: Using technology particularly contemporary, computer-based tools such as smartphones and other smart devices to support learning on-campus or remotely.

Endowment funds mobilization: Raising and investing pooled gifts typically from alumni, well-wishers, businesses, etc. into an endowment whose income supports the university's education and research mission in perpetuity.

Intellectual capital: The bundle of skills, knowledge, data, and intellectual property that the university can apply to generate value and income.

Business Units: University-run commercial and academic enterprises established to generate additional revenue beyond government capitation and tuition.

CHAPTER ONE

INTRODUCTION

1.1 Background of The Study

The ability of an organization to diversify its revenue streams while recognizing and evaluating all of the costs required to run its business both now and in the future is known as financial sustainability (Afriyie & Oppong, 2015). According to Wachira (2018), an institution is deemed financially sustainable if it can bring in sufficient finances to pay for its current and future commitments without sacrificing those endeavors. Financial sustainability refers to the state of an institution's finances, highlighting a favorable ratio of income to expenses and effective resource management in operational operations while taking standard environmental considerations into account (Oganisjana & Koleda, 2015).

Universities in wealthy and developing nations alike have realized that money from trade and industry is growing in importance and gradually making up a larger share of overall revenue. The perception of universities as purely educational institutions is gradually being replaced by the perception that they are crucial centers of economic advancement (Saha et al., 2020). A rise in the number of students enrolled has been observed in several countries worldwide. During the past two decades, there has been a twofold increase in the student population in the United Kingdom. Nonetheless, this doubling has been in contrast to the funding per student, as the former is not commensurate with the latter's enrollment (Institute for Fiscal Studies, 2017). According to Kikutadze and Tabatadze (2017), Australia's main stream financing has been decreasing, forcing the country to look for alternate funding sources. Public universities in many countries are under pressure to

find alternative sources of funding to ensure their financial sustainability in the modern world, as government funding is becoming less and less available. Competition for funds from other objectives including, healthcare, infrastructure, and poverty reduction programs is directly tied to government funding (Chumba, 2023).

Universities in Iraq can only be financially sustainable over the long run if 35% of total revenue comes from government subsidies, 12% comes from private donations, and roughly 53% comes from self-generated income (Almagtome et al., 2019). According to social movement theory, universities must reengineer their financial resource structures in light of the US federal government's and state governments' declining resources if they are to remain financially sustainable over the long run and continue to be at the forefront of technological and scientific innovations that help the global academia in research and advancement of the society (Vasi & King, 2012).

The operating budgets of Malaysian public universities were drastically reduced in 2016 by 16%, and then again by 20% in the following years, which had a significant negative impact on the universities' ability to remain financially stable (Kowang et al., 2018). The Malaysian government cut public university financing to 70% in 2017, which meant that 30% of the budget had to come from self-generated income, leaving unmet financial responsibilities (Ahmad et al., 2019).

Al-Youbi et al. (2021) offered insights into the many strategies outlined in the bylaws at the start of 2020 that Saudi Arabian universities use to achieve increased financial sustainability. With the implementation of the bylaws, colleges were able to justify their need to use tuition money in addition to funds from research and other consulting services.

The University of Dar es Salaam in Tanzania saw reduction of the government's approval rate from 93.2% in 2015/16 to 63% in 2016/17 when compared to the university budgets approved by the council (Kossey & Ishengoma, 2017). Because the state has not provided enough financing, universities in Zambia face difficulties maintaining their financial viability. This has compelled the university council to embrace more sustainable finance methods.

Ethiopian universities have found it most difficult to remain financially viable, even if doing so is essential to their long-term ability to fulfill their objectives, implement policies, accomplish goals, and serve their constituents. The majority of colleges across the country have experienced a rise in enrolment, which has put pressure on their finances and reduced the quality of instruction (Tamrat & Teferra, 2020).

Rwanda is facing financial sustainability issues because the government has cut university financing. The University of Rwanda's operating budget was reduced by 50% by the Rwandan government in 2016, leaving the universities to cover the remaining costs (Rwira, 2017). An analysis of private institutions in Uganda by Nalwoga (2021) found that just 19% of them are financially viable. These colleges fit into one of two categories: normal or absolute financial sustainability. Eighty-one percent of universities might be classified as unstable or as having essential financial sustainability (Nalwoga, 2021). Tuition fees, government grants, and other locally generated income provide the majority of funding for the University of Zambia. Currently, tuition fees account for 59% of the funds to the University while 33% is financed by government and only 8% generated through internal revenue. In comparison to its potential revenue generation and

government funding, the University of Zambia's overall operating expenditures are significantly higher (Kalomo & Chama-Chiliba, 2022).

According to a 2018 study by Kenya's auditor general, most public institutions do not have enough funding to operate their programs, which has a detrimental impact on the standard of instruction. Research has revealed a few issues that add to Kenyan colleges' financial difficulties. The primary cause is the pressure on enrollment brought on by the large number of secondary school dropouts vying for scarce spots in colleges and universities at a time when these institutions are already having trouble accommodating large student bodies and subpar infrastructure (Midiwo, 2016).

Public universities and national polytechnics are facing an overwhelming debt of Sh. 67.81 billion. The figures show that some of Kenya's largest and most respected universities are at risk of collapsing under the weight of financial mismanagement and chronic underfunding (Controller of Budget, 2023). According to the 2022 report by The Kenya Institute for Public Policy Research and Analysis (KIPPRA) it was observed that although public universities receive government funding, there is an increasing fiscal mismatch. In recent years, there has been a more than twofold growth in the budget gap at public universities. Government support for universities under the DUC model has been steadily decreasing over the past few years, falling as low as 48.11 percent in 2022 from 66.4 percent in the fiscal year 2018–19. Public universities are therefore unable to fulfill their legal obligations, such as filing taxes, providing for health insurance, and remitting payments to pension schemes, as a result of a build-up of outstanding bills of Ksh65 billion as of February 2022. Institutions of higher learning have resorted to raising tuition and

housing fees in order to close the affordability gap (KIPPRA report, 2022).

1.1.1 Business Units

Since their establishment in the 1990s, business units have been a part of public universities. Their purpose was to protect these institutions from the impact of the government's decreasing capitation to fund their capital and recurrent expenditures. Higher education could only be funded by the Kenyan government until 1991. However, this financial distress forced the universities to find new ways to generate extra revenue to supplement the government's ever-decreasing capitation (Murage & Onyuma, 2015).

Business units to deliver consistent surpluses, strong managerial systems are essential. Pragmatically, this includes a monitoring-and-evaluation regime that tracks economic performance including cost structures, working-capital cycles, receivables turnover and produces periodic financial reports for decision support (Miranda et al., 2016). Universities need capable executives who can steer profitable ventures while balancing complex stakeholder expectations so that revenue generation does not erode teaching and learning quality (Kipkoech, 2018).

Positioning business units within an entrepreneurial-university orientation helps them capitalize on ideas and knowledge assets. Entrepreneurial universities act as innovative agents, translating capabilities into marketable offerings; yet cultivating such a culture and the enabling environments for entrepreneurial behavior remains challenging (Bodunkova & Chernaya, 2012; Hannon, 2013). Moreover, weak pipelines for research commercialization and fragmented guidance on supporting creative/entrepreneurial institutions can impede revenue realization (Petlenko et al., 2021).

Since the 1990s, universities expanded business units (IGUs) to raise third-stream income; however, audits and case studies show that existence alone does not guarantee sustainability. In Kenya, the Auditor-General (2021/22) explicitly reported loss-making IGUs across public universities, while unit-level audits at the University of Eldoret recorded recurring losses in catering and farm operations like catering Ksh. 4.98m in 2018/19, KSh 0.86m in 2019/20 , and media syntheses note significant 2022/23 business units losses sector-wide.

1.1.2 Finance Management Practices

Financial management practices refer to the application of financial knowledge, expertise, and techniques to optimize an organization's resource utilization (Baitov & Grin, 2014). Universities can thus use the technique of income generation through financial management, regardless of how much or how little money is generated. According to Kamanzi and Neema-Abooki (2018), universities that have strong financial management practices are essential to their financial sustainability. Only these institutions, with stable income streams and sound financial structures, will be able to carry out their various missions and address the issues of today's increasingly complex and global environment. In practice, finance management practices converge in public and private universities because both must apply the same core disciplines such as annual budgeting linked to plans, cash-flow management around fee cycles, internal controls ,asset registers, and auditable financial reporting so that resources are acquired, allocated, and accounted for efficiently across comparable revenue streams like tuition, grants, consultancies and risks including fee arrears and liquidity gaps. These shared routines arise from common

frameworks of financial management covering capital decisions, forecasting, budgeting, and reporting and institutional control systems governing assets, liabilities, revenues, and expenses, which make day-to-day tools and governance like finance/audit committees look similar regardless of ownership (Ali & Isak, 2019; Demba, 2013).

1.1.3 Endowment Fund Mobilization

Academic institutions' endowments are so essential that their magnitude can serve as a reliable indicator of their overall health. In periods when tuition revenue is lower, they allow colleges and universities to maintain a certain level of stability by drawing on accumulated endowment assets to cover operating expenditures. Because they have found out how to fund themselves sustainably through endowment funds, some of the world's best colleges, like Yale, Columbia, and Harvard, excel in teaching, financial aid, scholarship and research.

1.1.4 Investment in Technology Enhanced Learning

While education remains a fundamental entitlement for all citizens, the COVID-19 epidemic has altered the playing field, benefiting those with sufficient access to information and communication technology (ICT) and disadvantageous those from disadvantaged circumstances (Jachna, 2021). Online ICT equipment and gadgets are necessary for virtual study modalities. Universities must set up the required rules, infrastructure, facilities, hardware, software, internet services, and strategies for online teaching and learning in order for it to be successful. For the purpose of participating in virtual learning, lecturers and students also need gadgets like laptops, tablets, cellphones, and earphones.

1.1.5 Intellectual Capital

The financial performance of non-financial enterprises is mostly driven by their intellectual capital. Companies can enhance their financial performance by optimizing resource usage through investments in intellectual and physical capital. Financial resources, a strong infrastructure, and cutting-edge technology are nearly useless without skilled labor (Tran et al., 2024).

In a world where resources are limited and competition is growing, IC measures could give firms a competitive edge. Measuring intellectual capital makes it feasible to plan and manage intangible assets as part of the corporate strategy for creating value addition, which also brings about changes in management, culture, and organization. Enhancing the evaluation of intangible assets, performance metrics, resource allocation, and benchmarking exercises could be advantageous for universities (Todericiu & Șerban, 2015).

Public institutions tend to host larger cadres of senior scholars, broader postgraduate mandates, and national research roles advantages for supervision and grant capture. Yet they face heavier teaching loads and funding pressures that limit research time and support; recent reporting linked to the Commission for University Education (CUE) shows worsening student–staff ratios in public universities, signaling rising workload for lecturers (Nation Media, 12 Sept 2025). Targeted HRM practices work-life balance supports, fair workload models, and performance management are associated with better employee outcomes in Kenyan public HEIs (Agunda et al., 2024)

Private universities often display faster recruitment/promotion cycles and market-

responsive hiring that can enhance teaching quality and student services. However, staff retention is a salient risk where career progression and rewards are unclear. Recent Kenyan studies in private chartered universities identify workload assignment, talent management, and HRIS-enabled practices as levers that improve faculty performance and reduce turnover (Mugo & Siagi, 2024; Otieno et al., 2025).

Consequently, the purpose of this study is to determine the degree to which Kenyan institutions have employed this mobilization strategy to preserve their financial viability.

1.2 Statement of The Problem

With insufficient funding, universities have increasingly turned to tuition fees as their primary revenue source. However, many students face financial challenges, resulting in delayed fee payments and subsequent cash flow problems for universities. Additionally, the government's push to cap fee increases and student body opposing increase of fees have limited universities' ability to generate more income, further squeezing their budgets (Okoth, 2024).

These financial struggles facing Kenyan public institutions have negatively impacted their day-to-day operations and raised concerns about their durability. Kenya has led the way in promoting higher education since the country's universities rose from 10,000 students in 1990 to 562,925 students in 2022 (Republic of Kenya, 2022).

Kenyan universities are facing a myriad of difficulties. With massive debts from underpaid staff salaries, unremitted statutory deductions, pensions, SACCO dues, bank loans, and unpaid suppliers, the majority of universities are collapsing. Universities owe

KSh. 60.2 billion in total, and that amount is increasing every month (Republic of Kenya, 2023).

Aside from these issues, Kenyan Universities have been overly dependent on one financing source, have few resources, and few funding opportunities (Chumba, 2023). Furthermore, university operating expenditures have been rising at a faster rate than government funding (Wolff, 2021). According to a Mungathia (2020) study, the numerous internal and external difficulties that private colleges confront prevent the policies that were implemented from producing enough revenue to address financial sustainability. According to the finance directors surveyed for the study, funding university budgets is difficult, thus they typically prioritize different priorities because there is never enough money.

Furthermore, actual data obtained from Universities Fund (UF) revealed that within Kenyan universities, the budget shortfall between 2020 and 2021 was around KSh27 billion. The eventual closure of some of these institutions could result from a failure to handle the growing problem of financial instability. The audit also revealed that, during the year under review, the capitation per student had decreased by KSh35,616. This led to calls for higher tuition and living expenses in an effort to close the money gap.

Many universities have accumulated significant debts due to creditors and are even unable to remit statutory deductions courtesy of competing institutional interests. Private universities with government sponsored students found themselves in an unfamiliar territory, where they were allocated a lump-sum to share amongst themselves, in an apportioning done by the Universities Fund (UF). Delayed government remittances, such

as capitation for students and payments for services rendered, have created cash flow problems for universities. These delays have led to difficulties in meeting financial obligations on time, further straining university operations (Okoth, 2024).

Private universities are also financially exposed because of unpaid government obligations relating to legacy DUC commitments for continuing government-sponsored students totaling about KSh 31.4 billion, with ripple effects such as delayed clearance of graduation certificates and mounting liquidity strain. The COVID-19 pandemic added another layer of complexity to the financial struggles of universities. Disruptions in fee collection, reduced enrollment, and the additional costs associated with health protocols and remote learning infrastructure all took a toll on university finances. Furthermore, the introduction of the New Funding Model (NFM) in 2023 aimed to address these financial woes but has fallen short. The new Funding model faces a substantial funding deficit of Ksh 37.09 billion, jeopardizing the education of over 843,000 students who rely on government scholarships and loans (Okoth, 2024).

1.3 Purpose of the Study

Given that the education industry is expanding in an effort to bring education closer to the people, the financial viability of Kenyan universities has garnered a lot of attention. Nevertheless, there is now a need to achieve financial sustainability due to large reductions in government financing and rising educational expenses. The current study has provided data and timely advice on financial resource mobilization strategies that will greatly improve the financial sustainability of Kenyan universities.

1.4 Objectives of the Study

The general objective of this study was to evaluate the influence of financial resource mobilization strategies and intellectual capital on financial sustainability of universities in Kenya.

The study was guided by the following specific objectives;

- i. To determine the Influence of Business Units on financial sustainability of universities in Kenya.
- ii. To establish the Influence of Finance Management Practices on financial sustainability of universities in Kenya.
- iii. To determine the Influence of Endowment funds mobilization on financial sustainability of universities in Kenya.
- iv. To establish the Influence of Investment in Technology Enhanced Learning on financial sustainability of universities in Kenya.
- v. To determine the moderating influence of Intellectual Capital on the relationship between financial resource mobilization strategies and financial sustainability of universities in Kenya.

1.5 Research hypothesis

This study was guided by the following research hypotheses:

H₀₁: Business Units have no statistically significant influence on the financial sustainability of universities in Kenya.

H₀₂: Financial management practices have no statistically significant influence on

financial sustainability of universities in Kenya.

H₀₃: Endowment funds mobilization has no statistically significant influence on financial sustainability of universities in Kenya.

H₀₄: Investment in Technology Enhanced Learning has no statistically significant influence on financial sustainability of universities in Kenya.

H₀₅: Intellectual Capital has no moderating influence on the relationship between revenue generation strategies and financial sustainability of universities in Kenya.

1.6 Justification of the Study.

Vice-Chancellors, finance officers, Deans of faculties, Heads of revenue-generating departments and centers within universities, including Ministry of Education policymakers will find value in the study's conclusions. It will identify and disseminate best practices for fostering an atmosphere that facilitates efficient financial resource mobilization in Kenyan universities because it is a practice-oriented study. In addition, it will open up fresh discussions about best practices for fostering the development of an environment that facilitates efficient financial resource mobilization at various levels of the higher education sector for readers and other academics. As a result, the universities can face pressure to enhance how they carry out financial resource mobilization by fostering a supportive environment.

In the end, the higher education industry may gain from more chances and the opportunity to produce a sizable amount of additional money for improved financial sustainability. Ensuring long-term sustainability of operations is a critical component for all universities. The purpose of this research is to determine how financial resource mobilization tactics

affect Kenyan institutions' ability to remain financially sustainable. The research will help institutions implement efficient resource mobilization plans that will sustain government funding as well as student fees and ultimately assure their sustainability.

Investing in technology enhanced learning and intellectual capital, endowment funds, income generating units, finance management techniques, and their impact on financial sustainability in universities are all areas that this study aims to expand upon. These factors' effects on financial sustainability has been investigated, identified, and analyzed in this study, and relevant recommendations have been made. In order for universities to accomplish their aims and objectives, the study's suggestions and recommendations will help them work successfully and efficiently.

The study will assist Kenyan university policy makers in addressing the financial sustainability challenges. The results of this study will also add to the corpus of literature already in existence because they provide new insights. However, it is still unclear whether the methods and outlets for mobilizing current and future financial resources have any bearing on the financial sustainability of universities. In order to guarantee their financial sustainability, universities have developed a variety of tactics for resource mobilization, which this paper aims to critically examine. Unquestionably, financial sustainability ensures that the institution meets its objectives by ensuring that it generates enough revenue to fund future research projects and courses as well as on-time bill payments (Mynewsgh, 2018; Sazonov et al., 2015).

The study appropriately covers both public and private universities in Kenya because both categories face complementary but interrelated financial sustainability challenges and

share similar operational, governance, and funding dynamics. Secondly financial stress affects both sectors, albeit from different sources. Public universities experience declining government subventions and rising debts, while private universities face reduced enrolment, delayed government reimbursements for sponsored students, and high dependency on tuition as their main income stream.

1.7 Scope of the Study

The study focused on 64 public and private Kenyan universities accredited by the CUE by December 2022. The study focused on financial resource mobilization strategies applied by both public and private Kenyan universities. The Senior management comprised Finance Officer, Registrar Administration, ICT Manager, HR Manager and Resource Mobilization officer. The researcher started giving out the self-administered questionnaires to the respondents in August 2024. The data collection exercise was concluded in December 2024.

1.8 Limitation of the Study

Numerous restrictions may apply to a researcher's work, particularly when gathering data. It is anticipated that these restrictions won't, however, materially affect the study's conclusion in any way. Since financial information is essential and is regarded as highly confidential for third parties to obtain, gathering data from Universities may not be simple. By promising that the provided information would only be used for academic reasons, this was resolved.

It's also possible that fewer people than anticipated answered the questionnaire. Still, the

researcher administered the questionnaire in an understandable and user-friendly manner. Reminders sent out with kindness and courtesy also increased response rates.

The secondary data collected and analyzed could not be subjected to Binary Logistic regression because of the limitation of independent variables that could be applicable from the financial data observed.

1.9 De-limitation of the Study

According to Tlali (2018), delimitations of the study are boundaries that the researcher imposes on the study's objective and extent. According to Ferguson (2019), the distinct contexts and time periods in which a particular research study is done, as well as the type and size of the sample employed in the study, all play a role in defining the study's boundaries. According to Bastola (2021), the delimitations of a study can also be understood as a set of boundaries established by the researcher to restrict the study's scope. This is consistent with the finding of Owens and Suh (2024), who opined that a study's delimitation is virtually everything that the study will intentionally omit. Determining the boundaries of the different parts of the current investigation was thus attempted.

The resource mobilization theory, modern portfolio theory, resource dependency theory, intellectual capital theory are the four theories that served as the study's theoretical foundation. The stakeholders in education were quite interested in this field of study. As a result, considerable cooperation was required when gathering data from universities. Government entities like the Office of the Auditor General (OAG and the Kenya National Bureau of Statistics (KNBS) have easily accessible secondary data from public universities.

1.10 Significance of the Study

The goal of bringing education closer to the people and the expansion of the education sector have raised concerns regarding Kenyan universities' financial sustainability. However, the administration of the universities now needs to strive toward establishing financial viability due to large reductions in government financing and rising instructional costs. The current study will be useful in that it will offer proof and recommendations on financial resource mobilization tactics that have the potential to greatly improve Kenyan universities' financial sustainability.

The study's findings provide primary data and an intellectual foundation for upcoming researchers and scholars, financial institutions, funders, the Kenyan government, management teams at universities, and students at different universities around the country. The results of this study would add to the body of knowledge regarding university financial sustainability and methods for mobilizing financial resources for use by future researchers and academicians. The study's conclusions would also include vital information about the ways in which different financial resource mobilization tactics support universities' capacity to pay their debts on time. Additionally, this study recommends additional fields for scholarly investigation to close pertinent research gaps that will fall outside the scope of this study.

The study's conclusions provides university management teams with practical and efficient resource mobilization ideas for their organizations, improving their financial sustainability and stability. The management would be guaranteed to fulfill the financial institutions' responsibilities on time and in full by using the most effective resource

mobilization plan. Furthermore, it is expected that the Kenyan Government, a major stakeholder in institutions of higher education, would find the study's findings useful as it develops and puts into practice the laws that control the nation's higher education budget. In order to create rules that would guarantee the financial viability of universities, the study would attempt to emphasize the difficulties that management teams in these institutions face.

Additionally, the study throws some light on areas that have not been studied before. It is obvious that universities require financial resources to operate because of the government's inadequate support. It also goes without saying that institutions require resources in order to expand. It is unclear, meanwhile, how academic institutions find resource mobilization programs that, in addition to advancing instruction and research, bring in enough money to maintain their financial viability. The theories of resource mobilization, modern portfolio theory, resource dependency theory, intellectual capital theory, that are applied in the HEI sector will be strengthened and enhanced by the study's findings. From the perspective of resource mobilization theory, it is expected that this study would increase awareness of the necessity for universities to mobilize and improve their financial resources in order to maintain their financial viability. The outcomes of the research will impact how universities weigh the benefits and dangers that are inherent in the process of mobilizing financial resources. Universities would be able to create knowledgeable and practical policies about university finances thanks to the results. The public in the actual statistics about how financial resource mobilization arrangements affect Kenyan universities' long-term survival would likewise benefit the country.

1.11 Assumptions

All universities included in the study are assumed to have financial resource mobilization plans in place by the study. Additionally, information about the field of study was freely provided by the target population. No significant change in policy had the intended negative impact on the research. The study's goals can be met using the data that has been gathered. Finally, secondary data for the five-year period of 2018–2022 was readily available and sourced from the universities' audited financial statements and reports.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter concentrates on research carried out by various academicians and researchers who offer data for the research objectives of the current study. The first section of the chapter reviews the theoretical foundations of the research, outlining various schools of thought and how the study fits into them. Before going over the variables and empirical literature, it explains the conceptual framework and makes clear which parts form the independent and dependent variables. In addition, the chapter provides an overview of the evaluated literature, emphasizing the knowledge gaps that motivate the current study.

2.2 Theoretical Review

The theories that the study is based on are discussed in this section. The resource mobilization theory, modern portfolio theory, intellectual capital theory and resource dependency theory are all particularly covered. The following is a detailed discussion of these theories:

2.2.1 Resource Mobilization Theory

Resource Mobilization Theory was proposed by Oberschall in 1973. Drawing from the research on socio-economic movements, this theory asserts that social movements with the ability to effectively utilize resources such as money, time, and skills—are more likely to succeed. As the idea moved social-economic movements out of psychology and into sociology, it was hailed as revolutionary when it first emerged. In essence, it was a strong

theory that explained not only the organic, illogical, chaotic, and emotionally charged nature of social movements but also the performance of social-economic movements when resources were held constant. This included the support and generosity of various organizations, including governments (Crossman et al., 2019).

The concept of mobilization of resources holds that social movements arise due to opportunities for group action, sustained modifications to an organization's organizational structure, and resources made accessible to them (Edwards & Gillham, 2013). As per the resource mobilization theory, an individual's decision to participate in social-economic movements is based on their assessment of the benefits and drawbacks, rather than being a psychological tendency towards marginalization and discontent. The resource mobilization theory of social movements, as explained by Jenkins (1983), describes how social movements use resources from both internal and external movements to achieve their objectives.

Resource mobilization theory essentially states that social-economic movements are successful when resources are successfully mobilized and chances for political and economic growth are created for those involved. Social-economic movements can mobilize both material and non-material resources. Finances, human capital. Technology, organizations, communication channels and mass media are examples of material resources. Conversely, non-material resources consist of authority, moral commitment, solidarity, networks, social relationships, legitimacy, loyalty, and personal connections in addition to public attention (McCarthy & Zald, 1977).

Resources include money, human labor and experience, media access, and material goods

like machinery and furniture. For social movements to succeed, outside support is crucial. For instance, the endorsement of political and economic elites increases the likelihood of reform movements succeeding (Ohcrschall, 1973). Based on the premise that members of social movements are reasonable individuals, resource mobilization theory was developed. Sociologist Charles Tilly (1978) asserts that movements arise and fall, become mobilized and inactive, based on logical choices regarding the objectives of the organization and its available resources.

The price of organizing and taking a group action. According to resource mobilization theory, for a movement to succeed, its members must possess some level of financial and political resources. Put another way, mass unhappiness by itself cannot create a social movement; rather, coordinated social action requires both motivated individuals and sufficient resources (Aminzade, 1973; Gamson, 1990).

Critics point out that this theory does not take into consideration the social changes brought about by resource-poor populations. As we move into the twenty-first century, researchers are still modifying the idea of resource mobilization and creating new methods to look at the variety of movements that existed at the time (Buechler, 2000). As an illustration, new viewpoints grounded in resource mobilization theory place equal emphasis on the material resources of movements as well as their ideology and legitimacy (McCarthy & Zald, 1988). To understand how activists in other countries raise funds and organize support for issues like environmental conservation, more insights into social movements in those countries are also required.

According to Turner and Further (2012), the tenet of the resource mobilization theory is

that organizations serving beneficiaries who are low on resources require outside funding and assistance in the context of social-economic movements. A careful analysis of the idea is made possible by the social-economic movement organization's binary membership structure, which categorizes participants as either conscience or beneficiary constituents. Conscience constituents are organizations or people who are not part of the social-economic movement but who agree with its goals, causes, or purposes. In terms of labor, expertise, time, and even intellectual resources, they serve as the primary focus of the social-economic movements. In order to appeal to the conscious constituents, the social movement must, either independently or in conjunction with the mainstream media, present its message and character in an appealing manner. When communications regarding social-economic movements highlighted commonalities with conscientious citizens, Eltantawy and Wiest (2011) found that contributors donated more than beneficiaries.

Within the framework of this theory, it clarifies how the mobilization of resources results in the financial sustainability of entities. Universities are precisely these kinds of institutions, thus this theory is pertinent to current study since it will clarify the funding community's and donors' socially liberal support-based funding policies for academic institutions as well as their initiatives and programs. As a tactic employed by the chosen universities to raise money, endowment funds mobilization will be one of the study objectives that the theory will help to address.

This theory has occasionally been used in empirical research to explain how businesses might make the most of financial resources to maintain their financial viability. For

instance, Sharma and Davcik (2016) used the resource mobilization theory to predict how marketing resources and the company's financial viability would interact. To comprehend how the institution's ability to remain competitive and resource mobilization relate to each other (Casanueva et al., 2015).

Regarding the kinds of resources that are significant, there is no agreement. Several analysts have put up classification schemes that take into account the degree to which particular resources are useful in controlling the actions of targets. (Rogers, 1974) has distinguished between infra-resources that place restrictions on the use of instrumental resources and instrumental resources that are used in sincere attempts to influence. Power resources, which give the means of regulating the activities of targets, are different from mobilizing resources, which include facilities that facilitate the mobilization of power resources, according to Jenkins (1983).

Resource mobilization theory has primarily contributed by drawing attention to the part that outside donations play as well as the ways in which contemporary social movements have commandeered institutional resources. Since movements don't fit into the established political system, observers have frequently believed that the people pursuing the social reforms they are pursuing are the ones who provide the funding for them. The 1960s and 1970s movements, according to McCarthy and Zald (1977), appropriated institutional resources from corporations, academic institutions, social welfare organizations, the media, private foundations, and even government agencies. A conscience group of middle-class and rich people was also established by them.

Notwithstanding the theory's usefulness, detractors point out that it falls short of

explaining the common aspect of social-economic movements, particularly presence of other organizations and people supporting and collaborating with the movements. Furthermore, how socioeconomic movements with little funding or those that are unable to gather sufficient funds might succeed in bringing about social and economic change is not explained by the resource mobilization theory. In addition to the expanding tendencies in which movements rely on microfinance sources of funding and the backing of movements that are solely economic with little to no attention to social issues, the theory undervalues a number of important sociological issues, including culture, identity, and grievances.

Just like social movements anchored in this theory, universities need to mobilize resources to survive and grow. They must actively seek and organize financial resources through business units, finance management practices , investment in technology enhanced learning and intellectual capital. The Universities should not just rely passively on government funding or tuition fees. Resource Mobilization Theory is applicable to this study because it suggests that the more strategic and organized a university is in accessing, pooling, and deploying resources, the more financially sustainable it will be.

Resource Mobilization Theory highlights that resources are not only money but also include human resources. According to the theory, sustainability isn't automatic; it depends on a university's ability to continually access and use resources efficiently.

Universities in Kenya that can mobilize both its intellectual capital and financial strategies effectively is more likely to maintain long-term financial health. Intellectual capital which is a moderating variable in this study is a key non-financial resource that can be

leveraged to attract financial resources for sustainability.

This theory suggests that universities, like any organization, cannot achieve financial sustainability by passively waiting for resources like government funding or Placement of government sponsored students in private universities. Instead, they must actively and strategically mobilize financial resources through deliberate strategies which are the subject of this study. In this study therefore the universities must have strong resource mobilization strategies like business units, finance management practices, endowment funds mobilization, investment in technology enhanced learning and intellectual capital to ensure steady funding streams.

Business units (IGUs) operationalize Resource Mobilization Theory by purposefully organizing and deploying tangible like cash, facilities, equipment and intangible like managerial skill, networks, legitimacy resources to generate “third-stream” income. In this lens, universities shift from passively awaiting capitation to actively structuring ventures, monitoring costs and cash cycles, and translating knowledge assets into marketable offerings thereby improving the probability of financial sustainability.

2.2.2 Modern Portfolio Theory

Markowitz created this theory in 1952 in an effort to shed light on how investment decisions are made by individual in order to maximize expected returns subject to a particular level of portfolio risk. Reducing the of risk at a specific level of projected return is another way to accomplish this goal. This is accomplished by carefully choosing the various asset proportions. In other words, the goal is to minimize risk at every stage of return while always maximizing returns. Investors should aim for nothing more than the

efficient set. If this is accurate, then the optimal investment portfolio's decreased investment risk and maximized profits would have a positive relationship with universities' sustainability (Shipway, 2009). A university must decide what to invest in order to find additional funding for its objectives because it is a genuine organization. The project returns will be added to the monies the government gives public colleges as well as the money collected from student fees. The money that private universities need to operate comes from their investment projects as well as the fees they charge and collect. The predicted risk and return associated with a particular investment can thus be estimated by investors using the essential tools provided by this theory.

It has been demonstrated by numerous academics, including Shipway (2009), that the notion that investors behave rationally is false. The notion that every investor has a perfect understanding of possible returns has also been contested by behavioral finance researchers, who point out that investor expectations are typically skewed.

According to the law of large numbers, well-diversified portfolios made up of a variety of non-positively correlated portfolios should not only boost investment income but also aid in lowering idiosyncratic risk, making market risk the only significant risk to be considered when making investments (Markowitz, 1952). This theory posits that investors are presumed to weigh all projected rates of return over a designated holding time when offered with a range of options, and their judgments are mostly driven by risk-return evaluations

Investors will almost always choose portfolios with greater expected returns over those with lower returns for a given level of risk. Conversely, investors will probably favor

lower-risk portfolios over higher-risk ones for any given predicted return level.

Conversely, efficient portfolios are those that have the best anticipated return at the same or lower risk level. Furthermore, it is assumed that the correlation among the constituent assets establishes the portfolio's volatility and that the portfolio return is the proportionately weighted sum of the returns of the constituent assets (Markowitz, 1952).

The little research that is currently available, according to Byers et al. (2015), is insufficient to provide dynamic, theory-based methods for gauging the effects of sharing capital. They go on to offer more details that illustrate the process by which portfolio principles work. They involve the use of less resources to realize both individual and group demands. This directly affects how long-term a firm or other organization may remain financially viable. One effective strategy for pooling resources to fulfill erratic demands from various asset pool stakeholders is to avoid "putting all your eggs in one basket." The benefits of portfolio diversification are most likely to accrue from this.

Portfolio theory has been criticized by several, while being widely used in the financial setup. First off, it appears that the theory's notion of risk is implausible. The definition appears to be based on the idea that unpredictability, which may be expressed as either beta or standard deviation, is what distinguishes risk. Although this metric is quite reasonable, a more thorough study would investigate the fundamental qualities of securities in order to ascertain the foundation upon which to make investment decisions. Second, from the theory's point of view, investors are thought to be logically averse to risk, with the goal of limiting risk and optimizing returns.

This suggests, logically, that investors are unaffected by fluctuations in return volatility,

both upward and downward. This misses the stylized reality that while investors would prefer upward swings in returns and cash flows, they would probably wish to prevent downward swings in portfolio returns. In addition, behavioral biases such the endowment effect, loss aversion effect, and limited framing are likely to influence investors when they make investing decisions (Byers et al., 2015).

Moreover, the theory states that volatility in investments is rarely fixed, which means that unless one has future information of projected volatility, one cannot utilize it to make meaningful changes to a portfolio. This is because risk, when defined as volatility and return, is not permanently correlated. Only after an ex-post analysis can volatility be clearly seen. To sum up, a few limiting assumptions underpin portfolio theory. A few of these are the absence of transaction costs, the ability of investors to hold positions in investment security, their lack of knowledge of taxes when making decisions, the belief that risk is uniform among investors, the fact that risk can only be managed through risk diversification, the unrestricted capability to borrow money at the risk-free rate, and the assumption of a normal distribution of the returns. These assumptions aren't always accurate in the real markets.

Resource mobilization strategies' importance to financial sustainability has been reaffirmed by the modern portfolio theory (MPT). If universities choose the right combination of assets depending on their risk tolerance, they can achieve optimal financial outcomes, according to the MPT (Francis & Kim, 2013). A portfolio's overall risk and return should be taken into consideration while evaluating an investment, according to the theory (MPT). According to Lee et al. (2016), an investor can achieve higher returns

without taking on more risk by assembling a portfolio of several assets.

According to the tenets of contemporary portfolio theory, academic institutions ought to provide an ideal financial portfolio. Rather than concentrating solely on tuition costs, mobilization techniques should be implemented to reduce the risk of financial difficulty while improving returns. All of the elements that make up a wide finance mix for sustainability are supported by this idea.

This theory relates to the study because universities in Kenya must diversify their financial resource base and not rely solely on tuition fees or government funding. They should strategically mobilize a portfolio of financial sources like research grants, consultancy services, alumni donations, partnerships, investments, and entrepreneurial activities. Secondly the universities must embrace risk management practices for Financial Sustainability. Just like investors manage risk, universities must manage financial risks for financial sustainability. Depending on only one or two income sources is risky for universities because if government funding drops or student enrollment falls, the institution faces a financial crisis. Thus, building a diversified resource portfolio reduces financial vulnerability, ensuring better sustainability.

Endowments fit to Modern Portfolio Theory that guides prudent, diversified investment of the corpus to balance risk and return, smoothing operating support across cycles and protecting intergenerational equity. Together, mobilization plus portfolio discipline turns episodic gifts into steady, sustainable income. Investing in TEL mobilizes non-financial resources like digital infrastructure, platforms, pedagogical technologies, and skills to expand access, resilience and new service offerings.

2.2.3 Resource Dependency Theory

Weber (1947) first presented the resource dependency hypothesis, which was later refined by Pfeffer (2005) and Salancik (1978). According to the thesis, institutions depending on financial resources for sustainability cannot succeed without adequate resources. The theory states that a company may contain a range of resources that, when used to their full potential, can enhance the company's success. Therefore, depriving someone of their fundamental financial resources leaves them vulnerable and lowers their performance. When resources are scarce, an institution must look for other sources of funding, which presents risks and obstacles (Odhiambo, 2020). Continuous funding from various sources should be ensured for institutions to finance their day-to-day activities in order to mitigate this risk.

According to the resource dependency theory, a university is better off using several sources of income because it is less dependent on a single source of funding. Moreover, a significant budget deficit might result from a fall in revenue if funding is concentrated in a single source. A decrease in funding from one source, however, can be balanced by an increase from another if revenue is derived from several sources that do not exhibit a strong positive correlation. Subsequently organizations with a variety of revenue streams, where the actual revenue is quite close to the estimated revenue, are less likely to face absolute risk (Mamo, 2015). Universities' capacity to diversify their sources of income is a major factor in determining their financial health (Johnstone & Schot, 2023). Thus, the impact of money mobilization tactics on Kenyan universities' financial sustainability is examined in this study. This idea states that universities achieve strategic goals for

sustainability by optimizing their autonomy and managing their resource base. Resources are reliant on how organizations operate both internally and externally, which is only known by those in positions of authority, as David and Cobb (2010) highlight in support of this theoretical paradigm.

Higher education's resources are always shifting as a result of declining government support, which puts institutions under more and more pressure to function in tighter spaces. Due to the resulting heightened rivalry and desire for cooperation, institutions are forced to deal with conflicting and incompatible demands (Pilbeam, 2012). Since universities, like other institutions, depend on the outside world for sustenance, this view encourages the mobilization of endowment funds. In this sense, an organization's overall sustainability and a university's specific sustainability depend on the resources at their disposal. Only with strong backing from a range of organizational resources, including capital, human, and other, can university administration strive to meet short-, medium-, and long-term academic and financial goals.

In the event that this fails, the organizations' ability to maintain their financial viability is diminished. Furthermore, an organization may encounter financial difficulties as a result of an excessive reliance on a one revenue stream. A state funded university that receives government support could encounter delayed disbursements, thus negatively impacting the institutions operations (Mitchelle, 2018). This is emphasized by the situation in Kenya, where colleges rely on government funding and delays cause projects to halt and staff dues to be paid later than expected.

The theory of resources dependence is used to explain how institutions behave when they

create business initiatives to generate extra revenue to help them achieve their budgetary requirements. To determine the informational, financial, and resource requirements from an institution that relies on external resources, the features of the resource dependence theory are necessary. According to the theory, the organization depends too much on outside resources, which leads to insufficient control over the external environment and might impede the accomplishment of organizational objectives. Consequently, it eventually poses a threat to the organization's continued existence (Mahmud et al., 2022).

Resource Dependency Theory (RDT) posits that organizations are not self-sufficient and must obtain resources from their external environment to survive and thrive. This dependence on external resources creates vulnerabilities, prompting organizations to develop strategies to manage their dependencies and reduce uncertainty. In the context of the thesis, RDT directly supports the exploration of how universities in Kenya mobilize financial resources and leverage intellectual capital to ensure financial sustainability.

Kenyan universities rely on external sources like government funding, tuition fees, donor contributions, and partnerships. According to RDT, this dependence compels institutions to adopt resource mobilization strategies to manage and diversify these dependencies, ensuring continuity and stability. Pfeffer and Salancik argue that organizations engage in strategic actions to manage external constraints. The thesis aligns with this by investigating financial resource mobilization strategies, which are deliberate actions universities take to reduce dependence and gain greater autonomy.

RDT emphasizes that resource acquisition influences power dynamics. Universities that effectively mobilize financial resources and utilize intellectual capital enhance their

bargaining power and reduce susceptibility to external pressures thus fostering financial sustainability. The thesis highlights intellectual capital (human, structural, and relational capital) as part of the strategy to enhance resource acquisition. This aligns with RDT's principle that organizations can use internal competencies to negotiate their position and secure needed resources. Organizational Adaptation: As per RDT, organizations adapt to their environments to secure essential resources. Kenyan universities may modify governance, introduce entrepreneurial ventures, or form partnerships all of which are explored in the thesis as adaptive mechanisms driven by resource dependence.

Resource Dependency Theory provides a robust theoretical framework for this study. It explains why and how Kenyan universities mobilize financial resources and leverage intellectual capital to mitigate dependency risks and ensure financial sustainability in a constrained funding environment.

Sound financial management practices including budgeting, cash-flow management, internal controls, auditable reporting are strategic actions to manage and reduce environmental dependence. Resource Dependency Theory predicts that institutions facing volatile external funding diversify revenue, tighten governance over assets and liabilities, and build internal capabilities to restore autonomy and bargaining power stabilizing operations despite delayed remittances or policy shifts.

2.2.4 Intellectual capital Theory

In 1969, John Kenneth Galbraith released the first edition of Intellectual Capital. Intellectual capital, in his view, was more akin to a "intellectual action" than merely "intellect as pure intellect." Intellectual capital is thus more of an ideological process and

a means to an aim than a fixed asset or thing of value.

In 1969, Kenneth Galbraith proposed the concept of intellectual capital, defining it as the "using" of knowledge and abilities. Cabrita and Bontis (2008) agree that this definition is the first. Hence, the idea of intellectual capital has given rise to numerous theories. The challenges academicians face in defining intellectual capital are highlighted by Bontis (2012).

A more thorough understanding of the elusive intangible has been attempted, utilizing existing theories. Furthermore, it is noted that there has been a general trend toward emphasizing certain subcomponents of intellectual capital. The theoretical underpinnings of the resource theory perspective, social capital theory, and human capital theory have all been implicated in the delineation of the concepts of intellectual capital. While there have been advancements in our comprehension of the constituents of intellectual capital, as noted by Bontis and referenced in Cabrera and Bontis (2008), we still lack a comprehensive interpretation of intellectual capital and the connection to business performance.

In his doctoral dissertation, Bontis reinterpreted intellectual capital as the culmination of all the knowledge that each employee in a business possesses and which provides it with a competitive advantage. He pointed out that intellectual capital is the result of group cooperation and shared learning between a business and its clients, which creates a relationship and keeps the client coming back (Bontis, 2012). With increased interest from academics and management consultants, the theory of intellectual capital has developed (Chahal & Bakshi, 2014; Chan, 2009; Edvinsson & Lin, 2013).

According to Priscila et al. (2014), a crucial component of the intellectual capital hypothesis is the relational capital that serves as the organization's common link. Human and structural Capital are the knowledge assets which generate value in a company (Bontis & Fizenz, 2012). The latter is what remains once employees leave. There are three ways that intellectual capital is developed and used over time, according to Dyakona (2015). As a prized resource and source of national income, the first approach is examined from an economic standpoint.

Studies by Sullivan, Edvinsson, Stewart, Brooking, and Malone, among others, are listed in Dyakona (2015) and demonstrate the economic approach. The second method views intellectual capital as being composed of information, abilities, and real-world experiences applied via intellectual endeavors. It is suggested that intellectual capital activities could manifest as culturally aware, morally grounded, and intellectually stimulating abilities in the production of new knowledge. The knowledge produced boosts an organization's performance by generating competitiveness and rents. In summary, Guthrie et al. (2012) suggests that the integrated approach defines intellectual capital as the collective knowledge of all members of an organization that maintains its competitiveness.

According to Curado et al. (2011), intellectual capital is a complex, integrated system that uses people's combined, inventive, intellectual and creative capacities to promote competition. Dyakona (2015), argues that intellectual capital is understood to comprise intellectual property, experience, information, knowledge and development of value. The organizational structure, information technology in use, and commercial reputation of the enterprise are also considered components of its intellectual capital. According to

Brookings, cited in Curado et al. (2011), human capital, infrastructure, market assets and intellectual property are all components of intellectual capital. Significant questions have been raised in relation to intellectual capital and offered hope for improved economic outcomes down the road.

The fact that intangible assets, which are less valuable than tangible assets in today's enterprises, may or may not be supported by references in the accounting records forms the basis of intellectual capital theory (Dyakona, 2015). The thesis is based on the belief that an organization's structural, relational, and human capital determine its wealth (Bontis, 2012). Value creation, according to the notion, occurs when one type of capital interacts with another type of capital.

The idea that the theory is essentially intangible is one of its main characteristics. As stated by, intellectual capital is an intangible asset that lacks both clear monetary worth and physical shape similar to properties (Ahangar, 2011). According to Fizenz and Bontis (2012), intellectual capital is an intangible asset whose value could be difficult for other businesses to determine and replicate. This is due to the fact that value is created when people's human capital interacts with structural capital to create relational capital.

There are several facets to the idea of intellectual capital, which add to the diversity of applications and theories of the intellectual capital practice ideology (Fizenz & Bontis, 2012). Particular conceptions have been emphasized and weighted as the many historical stages of study have developed over time, resulting in the dominant approach. There is no agreement on a comprehensive theory or common methodology for measuring intellectual capital.

According to Wang (2011), Intellectual capital can be measured in various ways, which uses several theories to support it, is the result of researchers from a variety of fields, including accounting, economics, finance, strategy, and human resources. Previous research findings have demonstrated that human, structural, and consumer capital must constantly interact for firms to use their knowledge base efficiently. This implies that knowledge that is retained in isolation within individuals' thoughts has no bearing on quality unless it is incorporated into an organizational structure.

According to Mhedhbi (2013), the theory of resources and the idea of intellectual capital began to gain traction. According to this idea, the corporation is viewed as a singular mix of tangible and intangible resources rather than through its actions on the product or service market. This viewpoint was reinforced by a classification of Intellectual Capital provided by Ricceri (2008), which was based on multiple studies that distinguished the two viewpoints on this matter: This financial method, also referred to as the stock approach, which entails determining the amount of intellectual property that a business possesses. Facilitating the performance's piloting is the flow approach, which is a more qualitative method that addresses the evaluation of performance in relation to intellectual capital.

The focus of addressing intangibles has shifted over the last 10 years from corporations to public institutions like universities (Sánchez & Elena, 2006). Higher education and research institutions in Europe are working to improve universities' competitiveness, comparability, adaptability, and transparency as key institutional actors in innovation. This study shows that intellectual capital positively impacts value creation in Kenya's

public universities. Strong positive correlations between the human, relational, and structural capital constructs and value creation as well as a moderately strong correlation between the latter two constructs and value creation—found in Kenyan public universities serve as evidence of the significance of the intellectual capital constructs. universities in Kenya need to implement strategies for using the concepts of intellectual capital theory and management practice because of the significant influence that these constructs have in the process of creating value.

Intellectual Capital Theory emphasizes that an organization's intangible assets such as knowledge, skills, innovation capacity, organizational systems, and external relationships which are critical to value creation and long-term sustainability. Universities can leverage intellectual capital to attract funding from donors, industry collaborations, and consultancy services. Relational capital like alumni networks, partnerships with industry and government can open new avenues for resource mobilization beyond traditional funding models.

Human and structural capital enable universities to develop innovative programs, entrepreneurial activities, and knowledge-based services that generate revenue. Efficient internal systems and a skilled workforce reduce operational costs and improve financial management, contributing to sustainability. The theory suggests that organizations with strong intellectual capital are more adaptable and competitive, giving universities the capacity to sustain themselves financially even in a constrained funding environment. Incorporating intellectual capital into strategic planning allows universities to align resource mobilization strategies with their internal strengths, creating a holistic approach

to financial sustainability.

Intellectual Capital Theory clarifies why TEL investments deepen human and structural capital like skills, systems, content to improve efficiency and quality, and open new revenue possibilities including online programs and partnerships, thereby reinforcing long-run financial sustainability. Intellectual Capital Theory supports this study by explaining how universities can harness intangible assets namely people, processes, and relationships to mobilize financial resources more effectively and achieve long-term financial sustainability. It provides a lens for evaluating how knowledge-based assets contribute not only to academic goals but also to institutional survival and growth.

2.3 Empirical Review

The section outlines an evaluation of the research study that has already been done on Kenyan university financial resource mobilization tactics and predicted financial sustainability. The aforementioned pertains to the investigators, the extent of the investigations, their goals, techniques, and the analysis and interpretation of the results. Gaps in empirical research can be identified in this way.

More so than anywhere else in the world, Africa faces a major university funding crisis. The government, donor support, and cost-sharing model are the sources of funding for these universities (Kathomi et al., 2022). The amount of funding provided to universities has not kept pace with the overall enrollment of students at these institutions (World Bank, 2017). A company's capacity to generate consistent net income, increase its net asset base, and carefully manage its asset and liability portfolio is known as its financial sustainability (Nalwoga, 2021).

Financial sustainability, as defined by Akeel et al. (2019), is the ability of an organization to satisfy its short- and long-term financial obligations while offering the proper caliber of service delivery. Kobugabe and Rwakihembo (2022) claim that the most reliable measure of a university's financial health is financial sustainability. The capability of universities to consistently maintain long-term financial stability is critical to their sustainability, since they provide crucial education, research, and extension services to communities with strong demand for these services (Kathomi et al., 2022).

Universities reach financial sustainability when their revenue streams are big enough to support their research and academic endeavors (Sazonov et al., 2015). The challenge of financial un- sustainability will be met by universities with stable revenue streams, such as tuition fees, governmental financing, and internal revenue (Estermann & Pruvot, 2014).

Nalwoga (2021) examined the financial viability of Uganda's private universities from a broad sustainability viewpoint in light of the Covid-19 pandemic. 34 universities met the study's qualifying criteria out of a list of 39 registered institutions as of December 2019, using a population of universities accredited with the Commission for University Education (CUE). A composite financial sustainability index was used to identify the four distinct financial sustainability groups in the study. Financial, regular, unstable, and absolute sustainability were the four categories that were distinguished. Based on the data, about 19% of Ugandan private universities are financially stable, while the remainder universities are classified as unstable or unsustainable. The findings provide insight into a broad range of issues that many institutions face globally, necessitating the use of techniques including Revenue diversification, financial restructuring, and government

support to increase their financial viability.

According to Sifuna (2017), public universities have faced financial shortages recently as a result of enrollment growth outpacing the government's allotment for these schools. Reduced government financing led to a deficit, which forced public universities to develop revenue-generating ventures in order to both ease their financial burden and preserve their ability to continue as sustainable institutions for research and teaching. Since the 1990s, universities have seen a decrease in funding since their actual spending has exceeded their budgets. This has caused delays in paying suppliers and service providers, which has finally resulted in debt buildup (Chumba, 2023).

Cernostana (2017) conducted a study with an emphasis on the financial viability of HEIs in Europe. Through a case study, it was determined that an institution's financial sustainability defines its long-term stability. About 75% of an institution's budget comes from public financing which is the primary funding source for European universities; the remaining 25% comes from other sources to keep the school operating (Marginson, 2017). Due to financial difficulties, universities have had to close some of their campuses. Tuition income has also decreased, which is thought to be related to low enrolment (Sarai, 2013). Despite their expertise in most areas, universities have not taken a proactive approach to diversifying their sources of income. One strategy to increase the sustainability of universities is resource mobilization (World Bank, 2010). According to Manuh et al. (2007), research grants, investment revenue, philanthropic sponsorship, and university student fees are some of the increasingly common sources of financial resources.

Leal-Filho et al. (2018) noted that one of the difficulties in achieving financial sustainability in universities is insufficient resources. Therefore, initiatives to increase financial sustainability are legitimate and support the idea that universities should devise strategies to gather the funds required to achieve financial sustainability. In Kenya, self-sponsored or module II students make up a smaller portion of the total revenue base for both public and private universities, which puts their survival in jeopardy. Due to this, public colleges have accrued debt and have been slow to pay their vendors and service providers. However, private institutions are facing severe financial challenges that make it impossible for them to meet their responsibilities. As a result, Kenyan institutions are having difficulty meeting the nation's academic demands and managing their finances (Wanzala, 2017).

The cost of funding higher education is rising globally, therefore in the twenty-first century, their missions' ability to remain financially viable will surely be a challenge (Jaafar et al., 2023). Universities can pay for their operations in a variety of ways, including through tuition fees, direct governmental funding, commercial or entrepreneurial services, and philanthropic donations. The goal of these revenue sources is to improve financial sustainability, which is essential to efficacy and efficiency.

Governments are a major source of funding for universities in the majority of developed and developing nations (Kathomi et al., 2022).

Money for each student was never sufficient, and payments to Kenyan universities have always been made later than expected. Public university sector has a debt of KES5.4 billion (Republic of Kenya, 2020). Numerous public universities have seen a decline in the quality of their

services as a result, including diminished training and research activities, staff layoffs, deteriorating buildings, and mounting debt. Private universities are no different, since they are also having financial difficulties that prevent them from fulfilling their responsibilities in full (Ngenoh, 2020).

According to Mandanici and Pace (2016), small and medium-sized universities in Italy have the worst financial sustainability prospects. Sherstobitova et al. (2021) offer approaches for assessing universities' financial viability. They note that there are few financial resources available to universities worldwide, with South Africa being a case in point where this is especially true. With the help of a policy framework on financial resource mobilization, the University of Eldoret launched a number of initiatives aimed at leveraging funding. These initiatives included the creation of an endowment fund, bilateral ties, Strategic partnership, improved internal savings, and public-private partnerships (University of Eldoret, 2015).

A resource mobilization directorate was also established by Karatina University with the intention of raising money for operations. Providing consulting and advising services in addition to charging for training to both individuals and businesses is one such approach to the idea. To raise funds for the institution, one strategy in this direction is the establishment of the Karatina institution Business Unit (KUBUNI), whose goal provision of training and consulting services (Karatina University, 2022). Assessing a project's financial sustainability involves determining its capacity to meet its financial and resource requirements regardless of the availability of ongoing donor support. According to Miriti (2016), the project is deemed to have satisfied the requirements to continue functioning

and benefiting the communities for which it was intended. The ever-evolving political, social, economic, and historical settings must be taken into account while addressing financial sustainability concerns. According to Scholes and Johnson (2017), organizations which are capable of achieving financial viability are capable to expand, evolve and function successfully over an extended length of time.

An essential factor in assessing an institution's capacity to weather any storms in their operational environment is its financial sustainability. Numerous researches on resource mobilization and its impact on organizations' overall performance have been carried out globally. Abbas et al. (2013), for instance, studied the variables that had a major influence on organizations' financial performance of textile sector in Pakistan from 2005 to 2010. A significant influence on the total financial outcomes reported was the way in which each firm addressed the several factors that determine financial performance. The public universities in Kenya are less able to carry out their functions, especially the traditional tasks of teaching and research, as a result of the government's decreasing financing priorities for higher education (Archuleta et al., 2013).

In order to survive the growing competition and declining enrollment, Kenya's public institutions have to adapt. Public universities have continued to get smaller government funding allocations than their predicted costs since 1990. Among other things, this has led to the accrual of debt and late payments to suppliers and service providers. A 2005 Ministerial Public Expenditure Review report indicated unequivocally that the government could no longer adequately pay public universities (Republic of Kenya, 2005).

The financial crisis that Kenyan institutions are currently experiencing has affected operations and cast doubt on their long-term viability. There are two main drivers of this crisis: institutional financial governance issues and changes in national policy that affect the system as a whole. An immediate financial infusion is necessary for a short-term fix, but a multifaceted reform in higher education financing at the institutional and national levels is necessary for a long-term plan. Due to enrollment growth outpacing the government's ability to provide proportionate funding, deficits in public institutions have long been reported. Government funding has not been sufficient to help universities become sustainable in teaching and research, thus income-generating activities were established to help public universities with their financial difficulties (Munene, 2019).

Public universities, however, are clearly still facing a number of financial difficulties, such as the inability to pay service providers on time and mounting debt and; late purchase of project materials, the delayed payment of salaries and putting Collective Bargaining Agreements into effect; the reduction of research grants; the curtailment of book purchases; and the few number of academic conferences, among others (Chumba et al., 2019).

Fee collecting is not entirely inelastic as a method of revenue mobilization. A massive price rise might actually lower rather than raise tuition since it would make a university degree unaffordable for the majority of aspiring college students. According to him, tuition rises are making education unaffordable for a large number of potential university students since they are surpassing inflation and the growth in median middle-class salaries (Dumestre, 2016).

Raising tuition costs might not be a workable way for institutions to increase their revenue. This is due to the fact that the majority of students attending public colleges are not wealthy. If tuition is raised over a certain point, the majority of impoverished students will be forced to drop out of school, and the few who can afford it might not contribute enough to the institution's financial survival. This is particularly true given that university students typically pay a high price per unit and that economies of scale and scope are only available to universities once a certain critical mass is reached. If not, it becomes more difficult to attain financial sustainability (Niki et al., 2017).

Ahmad et al.'s (2019) study looked at administrators' perceptions of Malaysian Public Universities' long-term financial viability. Senior officers were given questionnaires to complete in order to collect primary data. According to the analysis, raising tuition is not a practical strategy for enhancing university sustainability. The study suggested that in order to increase income, officers should critically use resources and take part in additional revenue-generating activities. The primary challenge facing 21st-century universities is fulfilling their mission both now and in the future. For this reason, financial sustainability is the process of ensuring that an institution meets its objectives by providing enough revenue to support its ongoing academic and research endeavors. To do this, universities must pursue sustainability, especially with regard to their financial status (Umutesi, 2019).

Auditor General's report of 2016 indicates that the majority of public universities recorded a Z-score of less than 1.81, indicating that they are in such severe financial trouble that they are unable to cover their overhead expenditures, supplier payments, and staff operational costs. According to Altman (2017), a company is performing well if its

Z-score is more than 2.99; if it is less than 1.81, the company is considered to be in difficulty and on the verge of bankruptcy.

For universities to be financially sustainable, they concentrate on three main areas: Revenue diversification, administrative and financial restructuring. The impact of fees, donor money, investments, and other routes of resource mobilization on financial performance and financial sustainability is one of the main themes of this examination of empirical literature's methodologies (Baligidde, 2010)

This concept aligns with the definition provided by Michael et al. (2021), who defined resource mobilization as a series of actions taken to get new and more resources for an entity. According to Mohsin et al. (2022), resource mobilization also refers to the actions made in order to raise more money to support development initiatives. It is possible to summarize the aforementioned concepts to say that financial resource mobilization is the process by which organizations work together to improve their financial standing and attain financial sustainability (Chumba, 2023).

The long-term sustainability of Ugandan private universities and financial resource mobilization strategies were the subjects of a study carried out by Kobugabe and Rwakihembo (2022). The study found a favorable association between financial sustainability and techniques for mobilizing financial resources, which accounted for 32% of the variation in Uganda's private universities financial sustainability. The study underscores the importance of triangulating resource mobilization techniques for private organizations by utilizing both external and internal finance sources to endure financial setbacks. In contrast to depending exclusively on internal revenue sources like tuition

fees, the report suggests private institutions maintain an optimal portfolio of financing options that would increase returns while lowering the risk of financial difficulties. The realization of financial resource mobilization within companies is approached from a variety of angles, emphasizing the importance of adopting financial management concepts to ensure the best possible mobilization of financial resources. Mobilizing financial resources effectively necessitates a high degree of professionalism (Gebru, 2020; Rubarema, 2021).

Asawo et al. (2021) make the case that mobilizing financial resources can improve organizational effectiveness. Effective financial resource mobilization strategies also require the application of improved revenue collection and usage techniques (Kiambi et al., 2022). Additionally, a lot of academics agreed that using institutional resources was essential to mobilizing financial resources in the most effective and efficient way possible (Lutempo, 2022). These studies, therefore, provide valuable information about the elements that must be taken into account in order for an organization to successfully mobilize financial resources. To realize judicious use of financial resources within businesses, for example, one key step is to leverage the people and material resources already in place. universities can achieve financial sustainability by implementing several financial mobilization tactics. Emphasis on the need of using entrepreneurial strategies to create revenue through the commercialization of academic services was considered on how Ghana public universities are funded (Bondzi-Simpson et al., 2022).

According to Lutempo (2022), universities must devise creative ways to close the budget gap caused by the government's reduction in support and increase their financial viability.

Tumusiime (2022), conducted a study on the strategies used by Ugandan universities to mobilize financial resources and came to the conclusion that partnerships between academic institutions and the business sector, as well as sponsored research initiatives, are efficient ways to raise money for higher education. The implementation of diverse resource mobilization tactics is not exclusive to Kenyan universities, as shown by Murage and Onyuma (2015). Furthermore, it seems that the financial distress experienced by public institutions is mostly due to the rising demand for higher education as people in Kenya and throughout Africa try to meet the demands of the knowledge-based economy. The quest of financial gain has caused universities to lose focus on their primary missions of teaching and research, which has resulted in subpar deliverables from these areas (Chumba et al., 2019).

Gudo (2014) asserts that the Kenyan government's higher education funding plan is insufficient. After reviewing the situation, Afriyie and Oppong (2015) recommended that more investigation be carried out in order to identify and resolve the problem. The 100% transition plan implemented by the Kenyan government, under which the majority of students receive government sponsorship and direct admission, resulted in a decline in tuition-related revenue. As a result, most universities reported some sort of financial pressure. The intellectual component is not the only one that has suffered. There are numerous abandoned infrastructure projects at public institutions, including lecture halls, labs, offices, and hostels. Even the physical facilities that are already there seem to be neglected (Ayuyao et al., 2017).

Notably, changes in education have heightened awareness of the financial viability of

institutions across the globe (Almagtome et al., 2019). Universities nowadays struggle to maintain their financial viability, which limits their capacity to meet goals, offer top- notch academic programs, and give students the opportunity to realize their full potential in a several contexts (Kobugabe & Rwakihembo, 2022).Consequently, issues related to financial sustainability have taken center stage in the HEIs, and numerous universities across the globe are either closing their doors or experiencing severe difficulties due to a decline in government funding and enrollment (Cernostana, 2017). Furthermore, since 2000, the percentage of aid going for education has stayed relatively constant around 10% worldwide (Sazonov et al., 2015).

Because there has been insufficient bravery to face some unpleasant realities, the issue of university funding has lingered for many years. These are the price of a university education and the people who should pay for it. However, because of conflicting national priorities, financing for the institutions is steadily decreasing as long as procrastination persists. The cuts are the result of a sharp decline in government revenue, mostly from taxes on the back of taxpayer relief payments made to lessen the impact of the COVID-19 pandemic. Due to limited resources brought on by lower-than-expected government capitation, HELB stated that it could no longer meet the demand for loans (Nganga, 2021). By assessing the impact of non-tuition resource mobilization strategies on the long-term financial viability of universities, this research seeks to bridge the apparent empirical gaps.

2.3.1 Empirical literature Critique

Several studies operationalize financial sustainability differently (e.g., revenue sufficiency vs. composite indices), making cross-study synthesis tricky. For instance, Estermann &

Pruvot (2014) emphasize stable revenue mixes for HEIs, while Nalwoga (2021) builds a composite financial-sustainability index for private universities useful, but not directly comparable to single-ratio or budget-gap views used elsewhere. Harmonizing outcome measures or meta-analytic mapping would improve comparability (Estermann & Pruvot, 2014; Nalwoga, 2021).

Much of the African Universities evidence is descriptive with funding cuts, enrollment pressure and debt overhang and are diagnostic rather than causal, which constrains claims about “what works.” Reports on Tanzania, Zambia, Ethiopia, Rwanda, and Kenya mostly document trends or fiscal stress but don’t credibly estimate the effects of specific strategies like endowments, IGUs, TEL on sustainability outcomes. Stronger designs like panel data, and event studies are rare in this stream (Controller of Budget, 2023; Kalomo & Chama-Chiliba, 2022; KIPPRA, 2022; Kossey & Ishengoma, 2017; Rwirahira, 2017; Tamrat & Teferra, 2020).

Kenyan studies on Business units often relies on single-institution case studies or policy narratives. This helps with mechanisms but limits external validity and makes it hard to estimate average effects across universities or to separate business units effects from selection. Stronger universities start better businesses. Multi-site panels with standardized Business units performance metrics would strengthen the evidence base (Murage & Onyuma, 2015).

Endowments are frequently presented as a stable financing lever, but Kenya-specific empirical evaluations of endowment performance like contributions, payout, volatility and governance are sparse; some citations are editorial/column formats rather than peer-

reviewed impact studies. Rigorous Kenyan panels or quasi-experiments on endowment creation and payout rules are needed (Mwanyasi, 2022).

The literature cited are rightly notes COVID-era TEL imperatives, yet few studies quantify TEL's net financial impact like new revenues, cost offsets, and capex/opex retention for African Universities. Without careful cost-benefit and persistence analyses, TEL may be mission-critical but not necessarily a near-term sustainability driver. Studies should model TEL's effect on margins and liquidity not just access (Mori, 2021).

Global and regional surveys advocate "revenue diversification," yet many references are narrative or policy-analytic (World Bank, Manuh et al.) rather than outcome-eval designs that test whether diversification predicts fewer arrears, better liquidity, or lower default risk net of size/quality. Future work should instrument for diversification like exogenous shocks to grant eligibility to address endogeneity (Manuh et al., 2007; World Bank, 2010).

Several Kenyan references pre-date key funding-model changes and the post-2018 debt build-up. More recent government reports (Controller of Budget; KIPPRA) document sharp mismatches and arrears that should be built into the empirical identification (pre/post policy windows) rather than treated as background. Otherwise, conclusions risk being anchored in an older equilibrium (Controller of Budget, 2023; KIPPRA, 2022).

Across themes relating to IGUs, TEL, endowments, FMPs, financially stronger universities may be precisely those able to launch IGUs, invest in TEL, and cultivate endowments so positive correlations can reflect reverse causality. Omitted factors like governance quality, alumni wealth, program mix may most likely confound estimates. The

literature would benefit from instruments like exogenous grants, staggered rollouts, or matched designs to isolate effects (Chumba, 2023; Kinuthia, 2009; Sifuna, 2017).

Many studies summarized are cross-sectional yet sustainability is inherently dynamic (cash-flow timing, arrears cycles, cohort-based enrollment). Panel models tracking the same universities through funding shocks from 2018–2022 would better capture resilience trajectories than single-year comparisons. European studies noting 75% public funding baselines and subsequent diversification give context, but governance, fee regimes, research funding architectures, and alumni-donor bases differ from Kenya's. Empirical work should adjust for these structural differences before recommending similar mixes (Cernostana, 2017; Marginson, 2017).

2.3.2 Influence of Business Units on Financial Sustainability

The rise of higher education in response to the increasing demand for university education and the severity of needs of the knowledge-driven modern economy is the cause of underfunding in Kenyan universities. Even though research and teaching are universities' primary missions, the quality has significantly declined as a result of insufficient funding. In addition, the state of decay of the institutions' physical infrastructure and the prolonged abandonment of major capital projects are clear indicators of the effects of low finance (Chumba et al., 2019).

Murage and Onyuma (2015) asserts that IGUs make up very little of the funding for public university expenses. There needs to be a significant overhaul of the IGU planning and implementation process, as well as the creation of investment corporations to oversee the IGUs, so that there is improved financial performance of the IGUs in

universities. Additionally, public universities should establish precise policies for using money that are generated internally.

Because corporate donor sourcing drives growth, income diversity is important. The information management that impacts the greatest number of people and the preservation of consistent, relevant communications with their donors are indications that donor money management was important.

Systems for financial planning are essential, particularly when it comes to budget management preparation, which makes financial planning an effective instrument for improving sustainability. To ensure equitable financial planning, non-governmental organizations should employ qualified and skilled personnel who has knowledge in financial analysis, plan implementation, and budget control. The NGO's management team should look for additional strategies to boost revenue from their current source in order to diversify their sources of income. To preserve a positive relationship with the contributors, the organization should make sure that information management improves accountability and communication. To improve accountability, the management should also engage in more revenue-generating activities (Mohamed & Makori, 2022).

According to Mange (2013), the following examples show the continuous financial difficulties: limited course offerings, the inability to purchase books, journals, or research materials, insufficient funding for academic conferences, shrinking research funds, growing liabilities, and unfulfilled collective bargaining agreements. It is fair to argue that the revenue-generating initiatives implemented at public institutions over time have only partially alleviated their financial strain.

Higher education business divisions can raise funds to lessen their reliance on government funding. The neoinstitutionalism perspective holds that universities can make academic advancement using revenue generating initiatives, expanding university involvement in and cultural and income changes to the state of organizations, society, and people thereby meeting the demands on financial resources. According to Mahmud et al. (2022), there is a perspective that neo-institutionalism has an impact on the standards and ideals of the educational system as well as the financial objectives of higher education, which include raising income. Omerzel (2021), explored the commercialization of intellectual property in universities. The study found that many universities face challenges in effectively leveraging IP and patents for revenue generation due to limited institutional support, lack of awareness among faculty and staff, and inadequate commercialization strategies. The study found out that universities are not making effective use of IP and patents as a financial resource.

Universities and research organizations are under increasing pressure to identify new financing streams in these times of financial crisis and constrained public finances. Universities and research institutes are receiving less public money. Universities are becoming increasingly business oriented and competitive at the same time. Each organization must develop a unique plan for changing its sources of revenue other than government grants. There are other methods available, including funding and collaborating with industry. In this context, commercialization of research can also play a significant role. Institutions of higher learning and research must demonstrate that their findings are relevant to industry and have an effect outside of the campus.

The establishment of income-generating Units (IGUs) is a result of the government's demand for strategies for mobilization of resources that will boost the university's finances and reduce budget deficits for expenditure (Miranda et al., 2016). A study by Mtonga and Banja (2020), titled "Exploring the Benefits and Challenges of Strategic Alliances in Zambia's Higher Education Markets." examined strategic alliances among three universities in Zambia and found that while such alliances offer benefits, there are significant challenges, including a lack of commitment and awareness among stakeholders, which can impede the realization of financial gains.

A descriptive-correlation research approach was employed in research on revenue-generating initiatives at the University of Eastern Philippines to discover more about the degree of third-stream activity implementation. Staff personnel and implementation committees are important players, according to the report. Implementing third-stream activities required the involvement of staff members. Employee training, expertise, and experience impacted how the operations were carried out. Training individuals in implementation was therefore crucial. As per Miranda et al. (2016), the study's findings indicated that including third-stream activities could improve financial sustainability.

Using a qualitative technique and content analysis, Hussin and Rashid (2017) conducted an alternative study on diversifying income generating in Malaysian public universities. It was discovered that the obstacles to generating revenue include a lack of managerial support, unclear procedures, and a shortage of qualified workers. It recognizes the contribution that revenue-generating endeavors make to improving institutions' financial sustainability. The study showed how collaborations might increase revenue. Therefore,

universities should set up systems to build relationships with outside businesses, starting with management and leadership, to improve revenue production.

A qualitative technique was employed in a related study by Ahmad and Buchanan (2015) on revenue generating initiatives in Malaysian universities to describe the range of activities that the universities had engaged in. The study's conclusions showed that 84% of Malaysian institutions participate in revenue-generating ventures like consultancies. The staff members' participation in increasing profitability was the activities' main accomplishment. Research commercialization is becoming increasingly important to the research standing and reputation of the institution. Thus, maintaining its performance is even more crucial to drawing in researchers, students, businesses, and other outside partners who then add to the institution's overall revenue generating. Moreover, as they guarantee the caliber of their research and increase their own budgets, colleges, faculties, and institutes contribute to the knowledge and technology economy in their own self-interest.

Diversifying one's revenue streams is a challenging process nonetheless. It calls for cooperation amongst a number of distinct components. Personnel not typically involved in managing private funds and corporate partnerships, such as researchers, are also impacted by this. In order to complete their primary responsibilities and maintain the caliber of their teaching and research, they must turn to business and start spin-out enterprises.

According to Mohamed and Muturi (2017), the inability to forecast and manage the budget for many years ahead of time has made the funding models of the institutions riskier. The

burden of utilities, the Kenya Revenue Authority, unpaid debts to vendors and unremitted pension funds led to the establishment of University of Nairobi Enterprises and Services Ltd. (UNES), which is entirely owned by the University, in 1995. Facilitating the operation of parallel programs for self-sponsored students at the bachelors and masters levels was one of UNES's goals, among others. Additionally, it aided in the collecting of money for a range of income-generating activities (IGA) from non-academic sources, including funeral services.

A study by Ghazali et al. (2023) that aligns to the majority of the respondents on the role of asset-driven enterprises in university income generation. This research examined land asset monetization strategies across 12 universities, revealing that all had implemented commercial rentals for student use, such as restaurants and stationery shops, as a means to generate steady income. Additionally, 33% of these universities utilized their facilities for guest accommodations, and 16% ventured into luxury student residences, indicating a strategic approach to leveraging university assets for financial sustainability. The classification of the income created was based on the type of activities, which included teaching, consulting, short courses, and special production units. The income was allocated according to certain schedules. The University of Nairobi managed to gradually establish partial financial sustainability in this fashion. Research, one of the University's primary missions, was severely hindered at that time. Internal sources of funding for research were essentially nonexistent. These days, departments are able to buy computers, connect to the Internet, upgrade and equip their labs, and pay for consumables thanks to their revenue-generating operations (Rodrigues et al., 2008).

The term "diversification of funding sources" refers to a variety of initiatives aimed at minimizing reliance on a particular source of revenue and/or donor, as well as a number of additional concern. A study by UPCEA and MindEdge Learning (2024) titled "Doing More With Less: Strategies for Revenue Growth and Efficiency in universities." supports the notion that professional development centers and short courses significantly contribute to university revenues. Their research indicates that 92% of surveyed institutions identified tuition and fees from these programs as primary revenue sources. Furthermore, 84% of respondents prioritized expanding program offerings, such as short courses and microcredentials, as key strategies for revenue growth over the next 3–5 years. In order to attain this long-term goal, HEIs must decide whether to undertake major income-generating activities or, alternatively, whether to pursue modest self-financing activities (Estermann & Bennetot, 2011; Estermann & Pruvot, 2011).

Colleges and universities in wealthy nations like the United States as well as those in Sub-Saharan Africa are now faced with the major task of maintaining quality and competitive status in the face of looming resource restrictions. Due to the scarcity of state subsidies and tuition income, PHEIs have been aggressively seeking out other sources of income (Rohayati et al., 2016; Teferra, 2016).

According to Hearn and Belasco (2015) and Johnstone and Schot (2023), revenue diversity is a crucial component of financial sustainability because it takes into account both the quantity of sources of primary funding as well as internal income production. An organization is nonetheless very vulnerable even if it has many donors if a sizable amount of its funding comes from just one of them. Any modification to this donor's choice could

trigger a serious emergency. The organization's total budget must originate from at least five sources and account for at least 60% of the total.

Therefore, the number of income streams that support the primary financing source is related to revenue diversification. According to Rohayati et al. (2016), HEIs are dealing with fast increasing costs as well as budget constraints from the government. In light of this, in order for HEIs to continue operating efficiently and being competitive, they require a variety of sustainable funding sources. Therefore, universities—public and private—have focused increasingly on charitable support, for example, in their efforts to pinpoint causes and activities. Therefore, cost pressures that have led to costs exceeding available revenues—as noted by Frølich et al. (2010)—are posing an increasing threat to HEIs, whether they are public or private.

In order to stay nationally and internationally competitive, public universities today face previously unheard-of obstacles, namely in meeting rising costs and matching enrollment to those rising standards. Consequently, the majority of public universities worldwide are looking for methods to reduce expenses, increase efficiency, and create new revenue streams (Woodhall, 2007; World Bank, 2010). A scenario like this indicates that public HEIs diversify their sources of income, which will improve their funding mix and financial sustainability (Rohayati et al., 2016).

In addition to income diversification, key pillars supporting financial sustainability in public universities include strategic planning, solid finance and administration, and own income production (Bell, 2019). Neema-Abooki and Kamanzi (2018) have addressed the remaining pillars; this chapter focuses on the fourth pillar, which is own revenue creation

According to a study by Ahmad and Buchanan (2015), commercialization provided the majority of the university's revenue, whereas research and consulting were the primary sources of income for Malaysian public universities. The primary factor in a university's growth and viability is the revenue produced by its faculty. Eventually, it will assist the university in finding a more effective method to achieve the best outcomes in terms of revenue generating.

Parental strain is lessened, school enrollment is up, academic performance is enhanced, and money from income-generating activities is used to inspire instructors and kids alike. But the revenue was not enough to pay for physical infrastructure, nor did it cover bursaries for students in need. It is vital to motivate IGAs to be in a position to offer support for the academic programs. Additionally, it is advised that measures be taken to increase IGA revenue in order to support underprivileged kids and upgrade school infrastructure. Other Kenyan universities have established consulting divisions that also function as businesses outside of the main campus operations. Jomo Kenyatta University of Agriculture and Technology operates under the name Jomo Kenyatta University of Agriculture and Technology Enterprises. The consultancy offers their services to both the public and private institutions. Given the high caliber of technological expertise offered by universities, this is an essential means of raising income and bridging the knowledge gap between academia and business. Consultancy is important and, when managed well, can lead to several new commercially successful options, according to the institution. Furthermore, it plays a pivotal role bridging the gap between applied research and research output challenges and in upgrading the abilities of academic staff (Akinyemi & Ifijeh,

2013). A study by Mujuru and Obi (2020) examined the impact of cultivated area on smallholder farm profits and food security in South Africa and found that increasing the cultivated area positively influenced farm profits and food security, indicating that agricultural activities can serve as significant income sources including farming and similar production units which can be vital revenue streams for institutions.

Another novel technique for indirectly mobilizing financial resources as a result of relationships and alliances is public-private partnerships (PPPs). PPP funding is accessible for university infrastructure as well as services. A common method of linking these two approaches is through service contracts, wherein the public sector assigns private companies to provide certain services that are typically provided by the government, like cleaning services and/or equipment maintenance, and the services are paid for according to contracts; or through management contracts, wherein the government assigns private entities to undertake capital projects or provide managerial or consultancy services in accordance with contracts.

Due to the necessity of utilizing the efficiency demonstrated by the private sector in delivering economic value for public finances, PPPs have grown in popularity. PPPs are being used by universities more and more to improve their infrastructure, which includes classrooms, offices, dormitories, and laboratories. Public Private Partnership Directorates in Kenya are used to oversee PPPs at the Treasury of the Ministry of Finance. According to GoK (2021), it establishes the rules that public sector organizations, such as universities, must follow when participating in PPP finance.

Universities that rely heavily on student fees run the danger of running into financial

difficulties, according to Omona (2019). Universities were left to foot the bill when Rwebiita (2020) pointed out that marginal cost of providing education that meets quality standards was higher than the fees paid by students. Ahmad et al. (2019) examined officials' opinions regarding the financial sustainability of Malaysia's public universities. Senior officers were given questionnaires in order to gather first-hand information. The analysis found that increasing tuition was not a workable way to improve university sustainability. The study suggested that in order to increase income, officers should critically use resources and take part in additional revenue-generating activities.

Internally generated revenue from commercial operations is referred to as "other revenue." According to Wachter (2012), universities must increase their revenue from entrepreneurial endeavors to overcome the budgetary shortfall left by government subsidies for public education in addition to tuition and fees. An institution is better off having several sources of income since it is less dependent on a single source, according to resource dependent theory.

Afriye (2015) investigated the variables that may affect the long-term sustainability of higher education establishments in Ghana. Whereas the previous study exclusively included Kenyan universities, this study used a random effects model. The expansion of HEIs and internally generated money were found to be positively correlated by the study. In 2015, Ahmed, Soon, and Ting evaluated the activities Malaysian institutions engaged in to generate revenue.

The study employed an interactive model for primary data analysis and an intentional random sampling strategy to achieve a qualitative approach. This study's research

employed a random effect model and took into account a census. The writers pointed out that commercial service revenue, such as that from stores, farms, and rentals, is essential to universities' ability to run efficiently.

Miranda et al. (2016) studied revenue generating activities at the University of Eastern Philippines. To learn the extent to which no tuition revenue generating streams were achieved, the research employed a descriptive-correlation research approach. The study found that increasing revenue-generating activities raises overall revenue. The study found that that producing revenue was a useful method for improving financial sustainability.

Hussin and Rashid (2017) employed a qualitative technique and content analysis in their study on diversifying revenue production in Malaysian public universities. The analysis discovered that revenue from outside sources made a significant contribution to the universities' operations. The research recognized the contribution of revenue-generating endeavors to augmenting the financial stability of Malaysian universities.

Mamo (2015) conducted research on university revenue production initiatives in Sub-Saharan Africa. The study's data collection methods included case studies and interviews, however the sample size was limited to just three universities. The survey found that outside funding made up a larger portion of the university's budget than government recurring grants. In this study, panel data from 55 Kenyan universities were examined. Murage and Onyuma (2015) study evaluated the financial performance of universities' revenue-generating operations using secondary data. The researchers found that public universities can be financially supported by internally generated activities.

Income-generating units have arisen in response to the government's pressing request for the development and implementation of revenue generation initiatives that will improve the university's finances and close any budget deficits. State universities are encouraged to take on revenue-generating projects in order to make the most of their limited resources and eventually become financially sustainable. Due to government budget cuts for public education, universities must improve their financial standing (Miranda et al., 2016).

IGU management ought to create and put into place a staff reward and incentive program that would recognize employees who perform exceptionally well in running the company. Employee morale will rise as a result, and others will be encouraged to follow suit, boosting self-esteem and morale alike. It is recommended that the IGU management create a feasible system for monitoring and evaluating each IGP's economic performance. This system should account for various issues such as operational challenges, fund access and utilization, turnovers of inventory and accounts receivable, periodic financial reports, and other relevant concerns (Miranda et al., 2016).

When a vocational training system is modernized and reformed, the characteristics of entrepreneurial universities lead to the conclusion that these institutions could be viewed as innovative agents equipped with effective instruments for capitalizing on their ideas (Bodunkova & Chernaya, 2012).

Hannon (2013), however, drew attention to the difficulties universities have in fostering an entrepreneurial culture and in trying to provide settings that foster the development of entrepreneurial attitudes and behaviors. According to the statement, the role of the entrepreneurial university is becoming more and more significant in helping students

discover new strategies for succeeding in competitive and uncertain environments as well as for addressing the many issues that must be resolved for the benefit of society as a whole, whether locally or globally.

Numerous colleges provide a range of courses, workshops, and other resources aimed at fostering students' creativity and innovation as well as enhancing their cognitive abilities. In the meantime, HEIs encountered some challenges related to their missions' change. Sadly, no information about the quantitative approaches utilized in HEIs' strategic planning or budgeting when they switched to the new model could be located. Data on statistical indicators that may be used to evaluate the university's efforts to address the financial allocation from the government budget are also not readily available.

Institutions would be further encouraged to go toward research and development and innovative technologies if a unified guiding concept or set of criteria for supporting creative/entrepreneurial institutions were established. Currently, there is a dearth of information regarding funding sources. Additionally, there is no consistent pathway for developing technologies and putting them to use in real-world situations. Of course, there are typical patent instances, but the problems differ substantially based on the nation's general growth, technological advancement, geographical location, and intellectual property rights protection (Petlenko et al., 2021).

A 2015 research by Murage and Onyuma attempted to assess how much the IGUs contributed to the funding of public universities. The results of the investigation, which was carried out at Egerton University showed that the business units were making relatively minimal financial contributions to public university expenses. The report

suggested that the financial performance of IGUs at public universities be improved, and that IGU strategy and implementation be drastically changed, with investment companies being established to oversee the IGUs.

As Kipkoech (2018) noted, universities would need university leadership capable of directing profitable income-generating projects. Additionally, to achieve successful financial resource mobilization, a careful balancing act was needed between the various complicated stakeholder issues and the quality of learning (Kipkoech, 2018). Revenue diversification, including income from research and consultancy, have a positive significant effect on financial sustainability when measured using the sustainability ratio. This indicates that such activities are crucial in enhancing the financial health of these institutions (Kimathi and Irungu, 2024).

Having only one source of income could put a universities' sustainability at risk, hence it is better for them to have several sources. Effective financial resource management and a commitment to revenue diversification are two ways that universities might achieve sustainability, according to Jung et al. (2019).

2.3.3 Influence of Finance Management Practices on Financial Sustainability.

Implementation of financial management practices regulations may constitute a considerable challenge for academic institutions. For a public academic institution to function well, managing the flow of money in respect to the budget is crucial (Demba, 2013). Financial management is the process of overseeing an organization's financial resources. It includes decisions made about capital budgeting, such as whether to buy or lease, issue debt or equity, and manage accounting and financial reporting, forecasting,

and budgeting (Ali & Isak, 2019).

According to Demba (2013), the financial management framework also includes internal controls, processes, systems, and practices that pertain to how the department handles its assets, liabilities, revenues, and expenses. It is made up of its operational and financial systems, budget performance, budget performance tracking, internal and external financial reporting systems. Experience shows that, in comparison to the continuous issue of development plans anchored on financial expenditure, academic institutions' financial management processes more so those of public institutions are typically poor and controlled by resource constraint. Since the government reduced funding, public universities have had difficulty covering their costs, which has resulted in an endless cost center within the institutions (Mathenge & Muturi, 2017).

According to a study by Okuto et al. (2018), obstacles to effective and efficient financial resource mobilization include mismanagement of the resources, non-transparency, accountability issues, inconsistent application of the tax law, tax payer avoidance and noncompliance, corruption, and low stakeholder awareness as a result of insufficient information. A study by Burton and Miroga (2024) on the challenges universities face in managing cash flow to ensure liquidity and operational continuity, identified persistent liquidity issues and budget deficits as significant concerns. The study found that effective accounts receivable and payable management practices are crucial for enhancing financial performance and ensuring sustainability.

Additionally, a study by Minyoso and Musiega (2020) outlined the challenges public universities in Kenya face in managing cash flow to ensure liquidity and operational

continuity. Their research found that working capital management is positively correlated with financial sustainability. The study recommended that more emphasis be put on working capital management to ensure enhanced cash flows, as it affects the sustainability of public universities in Kenya.

According to Riachi (2021), revenue diversification tactics had little impact on Strathmore University's financial sustainability, but cost management techniques and human resource competency did. The study found that revenue diversification methods, human resource skills, and cost management procedures had the biggest effects on Strathmore University's financial sustainability. The study suggested that, in order to maintain Strathmore University's financial sustainability, the Commission of University Education (CUE) and the Ministry of Education should make sure that the institution's policies are in line with cost-management techniques and that an emphasis is placed on human resource competencies (Riachi, 2021).

A public organization's ability to function properly depends on a few key financial management techniques, according to Demba (2013). The study included financial reporting, internal controls, and budgeting processes among its stated procedures. These financial management techniques are consequently essential for any firm, and budgeting becomes a crucial task for these organizations as well. Mwaura et al. (2022) discovered that in Nakuru East Sub County, financial investment had a significant effect on the performance of youth group institutions that receive government funding. Consequently, the study suggested that young fund SMEs avoid having inadequate liquidity management, since this would have a detrimental effect on their performance. It

is impossible to overemphasize the impact of investment decisions on an organization's financial performance because the causes of business failure can be mitigated by employing financial and strategic choices that promote expansion and the accomplishment of organizational goals (Statman, 1988).

The primary factor contributing to financial distress is investment decisions (Memba & Nyanumba, 2013). Investing is done with the intention of making money and building value over time. Any method for securing future revenue might be referred to as an investment (Hayes, 2021). Financial controls ought to enable decision-making on the distribution, utilization, and direction of its financial resources in addition to having an effective control mechanism in place for effective operations. This will allow it to respond fast and with efficiency to the signals from the global scope in order to make good use of investment chances and profit from global trading system. In order to maintain transparency in highly competitive markets, companies must regularly monitor their debt levels. This is because debt tracking provides a means of documenting current liabilities by keeping an eye on assets, expenses and income. This can streamline tax, valuation, and auditing procedures, expedite the completion of necessary financial obligations, and further validate financial compliance (Mwaura et al., 2022).

Prior research on the resource mobilization experience in Kenyan higher education revealed that essential elements of successful resource mobilization were transparency, thorough market research, and feasibility assessments prior to the start of income generation programs (Kipkoech, 2018). A study by Minyoso (2020) on the inadequacy of financial risk management structures in universities. The research found that financial

risk management accounted for 11.18% of the variation in financial sustainability among public universities in Kenya. However, the influence was not statistically significant ($p = 0.600$), indicating that existing risk management practices did not substantially impact the financial stability of these institutions. The study concluded that there is statistical evidence that management of financial risk significantly explains the financial sustainability of public universities in Kenya. The study recommended that sound structures for management of financial risks and cost-cutting measures be put in place to enhance financial sustainability. The need for financial management procedures may place a heavy burden on academic institutions which are public in nature. Effective management of financial resources in accordance with the budget is critical to the operation of public academic institutions. Financial management systems of academic institutions are not enough and are usually dominated by scarcity of resources (Mathenge & Muturi, 2017).

In a different study, Chumba et al. (2019) examined how financial sustainability is affected by financial investment methods on Kenyan universities and found that staff members lacked the necessary skills to participate in third-stream activities successfully. Descriptive statistics included mean, while inferential statistics included Pearson product moment correlation because the research employed a cross-sectional correlational survey and descriptive methodology. According to the report, consultancies were the primary revenue source for the most of the universities. Nonetheless, the study suggested that staff members should be equipped to complete projects successfully. It also made clear that universities must undertake financially sound initiatives that are run profitably and

successfully.

Consequences regarding the protection of the organization's assets, which include both tangible and intangible assets like goodwill and real estate and as well as intellectual property depends on internal control, which is essential for detecting and preventing fraud (McGonagall, 2002). Additionally, timely feedback on the accomplishment of strategic or operational goals, including regulatory and legal compliance, is one of the organizational level's internal control objectives. Another includes accuracy of financial reporting. When it comes to verifying that payments made by the business to third parties are accurate and justified for services provided, for example, transaction-level internal control describes the steps required to accomplish that goal. A study by Mbugua (2023) regarding the quality and dependability of financial reporting in public universities found that adherence to Public Sector Accounting Standards (PSAS) significantly enhances the accuracy, timeliness, and compliance of financial reports in Kenyan public universities. The study concluded that strong financial reporting practices are instrumental in promoting transparency, accountability, and stakeholder confidence within these institutions.

When investment techniques are implemented in a particular institution, the institution can benefit from increased profits that can be used to support its operations. The implementation of audit controls and authorization procedures, among other internal control measures, aids in business valuation by enabling the taking of the required actions to improve performance (Mathenge & Muturi, 2017).

The goal of financial management in public institutions is to give assurance that needed

resources will be available when needed and that they are acquired and applied in the most effective manner possible to serve the general public. Public academic institutions may face severe financial management practices regulations. For a public academic institution to function well, controlling the flow of money with respect to the budget is crucial. This has caused financial difficulties for many Kenyan universities, which has lowered the caliber of services provided (Mathenge & Muturi, 2017).

Public universities financial performance in Kenya was found to be significantly impacted by financial monitoring, investment decisions, annual budget adherence, , and financial planning in a study conducted by Mathenge and Muturi (2017). Financial planning had the least impact, whereas investment decisions had the most. The study came to the conclusion that the factors are a major factor in determining the advancement of the institutions since every element affected financial performance positively. The study's conclusions recommended that the university management focus on the study's objectives and take appropriate steps to improve the universities' financial performance. To fully grasp all the financial management strategies that affect financial performance in Kenya's public universities, more research in the area indicated by the R- square gap can be done (Mathenge & Muturi, 2017).

The impact of financial investment strategies on the sustainability of Kenyan universities was evaluated by Chumba et al. (2019). Questionnaires, linear multiple regression, and descriptive design were used. The paper makes the claim that increasing financial sustainability in universities may need resource mobilization. According to Roy (2016), donations typically provide an organization money to help with initiatives aimed at

achieving a stable financial position.

Organizations can improve their chances of operating for a longer period of time by implementing important financial management techniques such as internal control and budgeting control (Wandera & Sang, 2017). Controlling the budget is also thought to be a crucial task for any firm trying to achieve financial sustainability. For NGOs to run effectively and meet the needs and demands of stakeholders while fulfilling regular operations for an extended length of time, certain financial management methods are critical. Furthermore, Wandera and Sang (2017) contend that several financial management techniques have an effect on sustainability of CSO-initiated projects, including budget control, careful planning, monitoring, and assessment, as well as diversified funding sources. Organizations can improve their chances of operating for a longer period of time by implementing important financial management techniques such as internal control and budgeting control (Wandera & Sang, 2017).

Controlling the budget is also thought to be a crucial task for any firm trying to achieve financial sustainability. For NGOs to run effectively and meet the needs and demands of stakeholders while fulfilling regular operations for an extended length of time, certain financial management methods are critical. Furthermore, Financial management techniques have an effect on the sustainability of CSO-initiated projects, including budget control, careful planning, monitoring, and assessment, as well as diversified funding sources (Wandera & Sang, 2017)

The realization of an organization's financial sustainability can also be substantially aided by financial controls such as information sharing, risk assessment, and monitoring and

evaluation on both the internal and external levels. Adequate and efficient financial management and planning strategies can guarantee that the businesses acquire trust from investors and support from reputable establishments (Chelengat et al., 2018).

A study by Chokaa et al. (2023) on the regularity of financial audits and their contribution to financial transparency in public universities found that a robust institutional framework positively influences financial corporate compliance, which includes regular auditing practices that enhance accountability and transparency. The study recommended that the government implement thorough accountability measures to ensure that every officer in public universities is held responsible for financial activities, thereby promoting transparency,

Financial planning is an essential tool, whether it is done on paper or electronically. Using financial plans, organizations can identify the essential primary actions necessary to achieve the research objectives. Financial plans make it possible to pinpoint exactly who is in charge of making sure the goals are accomplished successfully and within the projected time frame. According to Hassan and Forhad (2013), financial planning includes stakeholder interaction, budget control, financial reporting, setting overhead caps, and analysis of financial ideas.

The importance of financial planning in making sure the long-term financial viability of an institution was recognized by the researcher. Finding out how technology financial systems, stakeholder involvement, computerized operations, , donor policies, management systems and audit affected sustainability was the aim of the study. According to the study, the project finance system significantly affected the sustainability

of the project when quarterly audits were carried out (Chelangat et al., 2018). A study by Kariuki et al. (2022) regarding the effectiveness of budgetary control mechanisms in promoting financial discipline and accountability within universities found that budgetary controls and revenue mobilization have a significant positive effect on the financial sustainability of these institutions. The study recommended aligning budgets within available funding and tightening expenditure controls to enhance budgetary control effectiveness.

2.3.4 Influence of Endowment Funds Mobilization on Financial Sustainability

A fund designated for a particular purpose is known as an endowment fund. Endowment funds typically only distribute interest income; the capital, or the initial amount invested, is kept intact. Though there are variations in the management style, the names, sinking fund, trust fund endowment fund and capital fund refer to comparable financial structures. Mahamood and Rahman (2015) study on endowment finance for universities to elucidate the function of endowments in augmenting university income. The results showed that endowments contributed significantly to institutions' income, improving their sustainability and quality. Universities are allocating a greater amount of money to cultivate positive attitudes among the stakeholders who provide endowments to these schools. A public entity, like a university, can receive contributions of cash or assets that generate income for various purposes, including scholarships or research, through endowment funds. The donated asset is typically preserved, and the only thing used is the income it produces. The only purpose of the endowment is to invest its funds in order to generate an inflation-adjusted principal amount and additional income for new

expenditures and investments.

Endowment funds are significant to the financial sustainability of the organization or network in helping to cover operating expenses, which in turn enables a more strategic focus. The project the finance system of the project had a significant impact on sustainability. CEOs whose salary is covered by the endowment fund are not required to devote all or most of their time to projects; instead, they can work on non-project related activities like advocacy, networking and relationship building, participation in policy- and decision-making bodies and forums, fundraising, and continuous program impact evaluation. None of these activities would be covered by a typical project. McIntosh (2011) said in a similar vein, vice chancellors of universities would prioritize long-term financial mobilization plans provided that operating expenses were adequately supported. Teferra (2016) provides clarification that endowments were established for both developed and poor countries in Africa. For example, the Kibaki Endowment Chair was established in Uganda on February 13, 2015. A contribution to the multibillion-dollar university library was made possible by Kibaki's (Kibaki's) 4.6 billion gift to Makerere University (The Star, 2015). Teferra (2016) explains that endowments are sums of money that colleges invest and then use the interest they receive to fund more institutional and academic programs.

The endowment fund of Harvard University possesses a sum of Sh 6 trillion. Yale University and Columbia University come next, with endowment endowments of Sh5 trillion and Sh1.5 trillion, respectively. Having the largest endowment fund in the world,

Harvard returned Sh250 billion to the university as income in the financial year that ended on 30th June 2022. This sum made up more than 33% of the university's overall operational income, or 77% of its recurrent expenditure. It is the university's main source of income. After costs, just 21% of the university's earnings came from education, leaving a surplus of Sh48 billion (Mwanyasi, 2022).

According to Kathomi et al.'s (2022) observations, endowment trust monies were distributed more to private universities than to state universities. The study concluded that private institutions were more successful than public universities in luring outside partners who had made contributions to trust funds and endowment coffers. Nevertheless, the endowment trust funds' revenue margin indicates that it is insufficient to augment the current financial sources.

Donors who contribute to endowment funds are investing in the institution itself, as opposed to project finance. Universities need to be prepared to work with difficult, long-term issues that may arise over time as a result of declining state financing and a decline in the number of students who are self-sponsored. Endowment funds may help close this funding gap. Philanthropy is a manifestation of human giving, a concept shared by all world religions and cultures. Furthermore, according to Bekkers, people's intents to aid the impoverished are generous because they are driven by a strong sense of compassion, helpfulness, and social value orientations (Grady, 2018).

Possessing a strong assertive disposition and a great awareness of charity organizations is a prerequisite for generosity. According to Cascione, charitable giving in the education sector particularly in higher education is best understood as philanthropic because it is

typically indirect and programmatic, with the expectation that the institution will provide the means for the instruction of education benefits (Lee & Chang, 2007).

According to the aforementioned debates, an institution's endowment fund must be invested in order for its endowment contributors' property to grow after they make a contribution. The institution's operational expenses may be covered by the investment revenue. Unquestionably, the endowment serves as a trust fund that grants the institution discretion over accepting and using endowed property, including investing in it. The university has complete authority over the endowed property, including the income earned, as it is not obligated to any other entity (Hasbullah & Rahman, 2021).

Harvard University's Sh6 trillion endowment fund is one of the most well-known endowments. Following closely behind are Yale University and Columbia University, with endowment holdings of Sh5 trillion and Sh1.5 trillion, respectively. Harvard has the world's largest endowment. In the financial year that concluded in June 2022, the university received Sh250 billion in revenues from its endowment fund. This amount accounted for more than one-third of the university's total operating revenue, or 77% of salaries and wages. For the university, it is the primary revenue source. Just 21% of revenue went toward education. It's astounding that the institution has a Sh48 billion surplus after costs (Mwanyasi, 2022).

According to the Corporate Social Responsibility (CSR) Act of India, businesses with a minimum annual revenue of Rs 1000 crore are required to donate 2% of their net income to charitable causes. Between 2011 and 2016, the value of this fund in India increased significantly, from Rs. 6,000 crores to Rs. 36,000 crores. The education sector receives

around half of this, but relatively little of it is used to fund higher education (Naseem & Almasri, 2016).

To achieve financial sustainability, a number of Civil Society Organizations have resorted to endowment funds. Under certain circumstances, the goal may be to raise enough money to yield interest sufficient to pay all or a substantial portion of the organization's operating expenses, with the principal remaining unaltered until certain extraordinary conditions are met. In other situations, the fund is intended to fulfill a particular strategic goal, including buying real estate or structures (McIntosh, 2011).

Teferra (2015) and Thelin and Trollinger (2019) discovered that the total revenue was not significantly affected by contributions from people, corporations, or agencies. Majority of these studies focused on the impact of funds from donor in non-university settings, this one examines the impact of endowment trust funds in Kenyan institutions.

2.3.4.1 Resource Mobilization strategies for Endowment fund.

A study by Kamala (2022) regarding the active involvement of universities in fundraising mobilization operations examined the critical success factors for implementing resource mobilization strategies in private universities in Kenya. The findings revealed that both internal factors (such as organizational culture, innovation, and leadership) and external factors (like trust and customer loyalty) significantly influence the successful implementation of fundraising strategies. Respondents generally agreed that their institutions actively engage in organized fundraising efforts to address financial requirements. The study concluded that effective management of these critical success factors is essential for the successful implementation of resource mobilization strategies

in private universities in Kenya.

A study by Kimathi and Irungu (2024) on the limited impact of charitable donations on the financial sustainability of public universities in Kenya found that while revenue diversification is essential, reliance on external sources such as donor grants and charitable donations does not significantly enhance financial sustainability. The study concluded that public universities should explore innovative alternative sources of revenue and close revenue-generating units whose marginal costs are higher than marginal revenues, indicating that charitable donations are not a substantial contributor to the universities' earnings.

A study by Kamala (2022) on the limited perception of philanthropic support as a significant resource mobilization strategy in private universities in Kenya found that while institutions recognize the importance of resource mobilization, philanthropic contributions are not perceived as a substantial or reliable source of funding. The study emphasizes the need for universities to diversify their resource mobilization strategies beyond philanthropy to ensure financial sustainability. A study by Kariuki et al. (2022) on the significant role of scholarship fund mobilization in enhancing university revenue assessed the effects of revenue mobilization and budgetary controls on the financial sustainability of public universities in Kenya. The study found that revenue mobilization strategies, including scholarship funding initiatives, have a significant positive effect on the financial sustainability of public universities.

A study by Odero (2020) on active engagement of universities in alumni fundraising and resource mobilization strategies examined how strategic leadership affects the

performance of university alumni associations in Kenya. Findings revealed that the adoption of strategic leadership practices, such as setting clear goals and promoting teamwork, significantly enhances the performance of alumni associations leading to improved alumni engagement, including fundraising activities that contribute to the universities' financial strategies. The study concluded that strategic financial leadership is crucial in promoting the efficiency and effectiveness of university alumni associations in Kenya.

A study by Kamala (2022) supports the existence and operationalization of formal policies guiding endowment funds in Kenyan private universities. The research examined critical success factors for implementing resource mobilization strategies in private universities in Kenya. The study also highlighted that respondents generally agreed on the presence of structured policies and frameworks that guide fundraising and resource mobilization efforts within their institutions. This agrees with the predominant perception that universities have definite endowment policies directing their fundraising and financial management activities.

However, a study by Wanjala et al. (2024) does not concur the predominant reaction from the participants regarding the existence and operationalization of formal endowment fund policies in Kenyan public universities. Their research found that public universities in Kenya predominantly rely on government capitation for their operations

and lack established endowment funds. This absence of endowment funds has led to challenges such as budget deficits, inability to allocate funds for research, and delays in remitting statutory deductions. The study recommends that universities diversify their

revenue streams and establish endowment funds to enhance financial sustainability.

2.3.5 Influence of Investment in Technology enhanced Learning on Financial Sustainability.

Advanced technologies and their applications in the sphere of education are causing a number of developments in teaching and learning methodologies as well as in the processes of administering educational institutions at all levels and in various disciplines. The education sector must address the challenges and changes that the current technology revolution brings about in society as a whole while implementing and adapting to these innovations because they have an impact on every aspect of life. Therefore, to secure the viability of the education sector in the future, it is imperative that technology advancements be managed in an effective and forward-looking manner now. This Special Issue's goals were to stimulate fresh, critical perspectives on these developments, to consider these challenges, and to pinpoint the most important questions that need to be answered in this situation (Daniella & Visvizi, 2019). Technology- enhanced learning embraced into universities in recent times and has grown to be one of the most discussed subjects in the education debate. It has created a variety of cutting- edge pedagogies to enhance the educational process and enhance the classroom setting. These pedagogies not only help students gain information in particular subjects but also foster civic involvement and critical thinking (Yu, 2022).

To cover operating expenses, universities need to have steady revenue streams. Endowment funds have long played a vital role in giving these institutions access to funding. To guarantee the viability of the education sector in the future, it is imperative

that technological advancements be managed in an efficient and proactive manner in the present. In this instance, sustainability is understood to be the education sector's ability to accept, adjust, and react to changes occurring in institutions of higher learning (Hasbullah & Rahman, 2021).

Smart sustainable education is an idea and approach to education that blends creative ideas for improving learning with considerations for integrating technology into the classroom. Smart education can also be described as instruction supported by a variety of technologically enabled smart gadgets, like tablets and smartphones (Mori, 2020).

Even in the face of the COVID-19 pandemic, there has been a persistent drive for higher education that is accessible, inexpensive, and of good quality. Universities moved from in-person to online teaching and learning methods to guarantee that instruction continued with the least amount of disruptions possible, placing further strain on already resource-constrained universities (Lee & Lundemo, 2021). Kosgei et al. (2023) examined the availability of infrastructure to support digital learning in public universities in Uasin Gishu County, Kenya and revealed that infrastructure has a positive and significant influence on digital learning in public universities during the post-COVID-19 era, indicating that investments in ICT infrastructure have facilitated online learning. However, the study also noted challenges such as poor network access in some areas and a shortage of skilled personnel, which hindered the full implementation of digital learning. TEL approaches are currently widely employed in higher education, and use of TEL approaches is continuing to rise in German-speaking countries, partially because of the digital natives. According to Schweighofer et al. (2015), students born between 1980 and

1994 are considered digital natives (Prensky, 2001) because they are used to using technology in their daily lives and expect it in their learning environments. There aren't any reliable data to support this claim, according to others who have disputed it (Margaryan et al., 2011).

Whatever the reason for their spread, there is no denying that TEL methods have become widespread in higher education. According to Bratengeyer et al. (2016), an Austrian survey indicates that all 49 participating universities utilize Technology-Enhanced Learning (TEL) techniques. Bullen and Morgan (2011) argue that the deployment of TEL approaches must follow instructional design principles since deploying technology to enhance learning processes is a complex process (Goodyear & Retalis, 2010).

Reviewing the most recent research paves the way for a more in-depth investigation of innovative technologies that may be advantageously used in the education sector, with the goal of enhancing financial capacity on a national and international level. Among the multidisciplinary issues that need to be addressed are online learning environments, digitally enhanced pedagogical models, and instructional games. The increasing popularity of lifelong learning programs that target both younger and older generations suggests that the current trend of financial education's expansion beyond traditional boundaries should be taken into account when determining the target audience (Mori, 2020).

COVID-19 pandemic-related quarantine limitations fundamentally altered the operating environment of traditional colleges and made financial stability measures more stringent globally. The most troublesome aspects of the system must therefore be examined one by

one, starting with the ending of in-class instruction. The majority of universities worldwide suspended classes in the early spring of 2020 as part of a series of actions meant to slow the coronavirus's rapid spread, but classes did not quickly resume as usual. The most unpredictable event, on the other hand, has been the transformation of classical universities' educational programs. This has made a number of financial issues worse and necessitated quick responses to new challenges and conditions, which has altered how all departments interact and function as well as how the educational process is organized (Al-Okaily et al., 2020).

Blended learning and distant learning have gained relevance. The weight of this increased responsibility on both professors and students meant that new technologies needed to be introduced quickly and that all courses needed to be digitalized. Internet access, the availability of suitable technological means, software, and other criteria are what decide the additional budget for material assistance that enable distance learning implementation. According to Burns et al. (2020), this scenario has caused issues for both individual distance learning students and the institutions, which are the primary players. Losses incurred in the area of student life support. Significant losses were experienced by businesses that provide services to students at universities, including food establishments, lodging facilities for students, souvenir shops, connected stores, printing service centers, and tourist information centers for instructors and students (Marshman & Larkins, 2020).

During the pandemic, contemporary classical institutions also had to deal with issues related to international activity in the areas of international student education, planning and hosting international conferences teacher and student mobility in the classroom. The

abrupt end of classes and the return of diaspora students, visiting faculty, and researchers to their home countries required a quick search for new ways to collaborate and arrange logistics. Reviewing several training exercises pertaining to education, internships, final and intermediate certification, and the defense of master's, doctoral, and bachelor's theses is necessary. Many of the symposia, seminars, and conferences were either canceled, moved to an online format, or were scheduled for a later date (Altbach et al. (2020).

According to , these difficulties altered the requirement for funding and mandated budget reviews. Compute and comprehend the impact of the COVID-19 on universities' financial stability, thus, is essential. This can assist in putting up a successful set of steps meant to mitigate these potentially long-lasting detrimental impacts (Jones et al., 2021).

Regarding the Financial Stability Paradigm, there is no question that Universities should be prepared with countermeasures such as equity funds (Boot et al., 2020).Information and communication technology (ICT) advancements have not spared the realm of education, as the authors contend. However, the extent and mode of enhancement of teaching and learning through technology-enhanced instruction (TEL) remain to be observed. There's no denying that TEL can serve as a vital lever for long-term socioeconomic development and progress in these conditions. This research started from the literature that has reliable thesis references and that TEL adds significant contribution to the teaching and learning process (Visvizi & Daniela, 2019).

In most third-world nations where governments have found it difficult to support education, ICT infrastructure and facilities at universities are in appalling condition (Bray, 1999). Publicly available data indicates that more than 82% of African students in sub-

Saharan Africa did not have access to the internet, which made it difficult to deliver equitable, inclusive, and high-quality education during COVID-19 pandemic (Nakweya, 2021). Virtual universities worldwide, despite their variations, nevertheless face challenges related to finance, infrastructure, and ICT accessibility, which keeps all students from having equal access to high-quality education (Mgaiwa & Poncian, 2016).

A study by Agallo (2023) on the investment in contemporary Learning Management Systems (LMS) to facilitate technology-enhanced learning in Kenyan institutions concurs with the predominant response. The research focused on the determinants of adoption of e-learning management systems among students in Technical and Vocational Education and Training (TVET) institutions in Nairobi County. The study found that while there is a positive attitude towards the adoption of LMS, challenges such as user competence and barriers significantly affect its adoption. Despite these challenges, the presence of LMS platforms in these institutions indicates an investment in technology-enhanced learning.

A study by Boniface Wakholi (2023) conducted at Kibabii University, found that 81.5% of students indicated that technology-enabled learning is an effective mode of learning. The study highlights that the implementation of technology-enabled learning has transformed teaching and learning by introducing student-centered environments and enabling independent learning through electronic resources.

Owidi et al. (2023) studied the perceived absence or unawareness of formal online teaching policies in Kenyan universities. Their research at Masinde Muliro University of Science and Technology (MMUST) revealed that both students and lecturers experienced challenges due to inadequate online pedagogical infrastructure and a lack of clear policy

guidelines for online learning. The study emphasized the necessity for universities to develop and implement comprehensive policies to enhance the effectiveness of online education.

Arante (2024), which investigated the adequacy and functionality of ICT infrastructure for online learning at Caraga State University Cabadbaran Campus (CSUCC) in the Philippines. The study found that faculty members perceived the university's ICT infrastructure, including internet connectivity and power supply, as generally adequate and functional for online learning. Specifically, the study reported mean scores indicating that communication tools and resilience measures like alternative electricity supplies were mostly adequate, supporting the notion that the university has prioritized enhancing bandwidth and energy reliability within its digital learning plan. These findings concur with majority of respondents , where 70.3% of respondents agreed that investments in internet bandwidth and reliable power supply have been undertaken by the university.

Ogunbodede et al. (2022), investigated students' perceptions and use of digital resources at the University of Africa, Bayelsa State, Nigeria. The study found that a significant proportion of students acknowledged the university's investment in digital learning tools, including e-learning platforms and digital libraries. This reflects a broader trend in universities enhancing digital infrastructure to support learning. Almahasees et al. (2021) investigated faculty and students' perceptions of online learning during the COVID-19 pandemic. These findings suggest a lack of trust or awareness regarding the formal accreditation and quality assurance of online learning programs. Since technology is affecting every part of life, the education sector must respond to the challenges and

changes that the current technological revolution causes in society as a whole when embracing and adjusting to these innovations. Therefore, to maintain the viability of the education sector in the future, it is imperative that technology advancements be managed in an effective and forward- thinking manner now (Visvizi & Daniela, 2019).

Although there is a lot of promise for using technology in the classroom, there are still many obstacles to overcome. These include how to inspire teachers to use TEL, how to keep students engaged, and how to use the range of resources and techniques in an efficient and responsible manner (Daniella & Visvizi, 2019).

2.3.6 Influence of Intellectual Capital on Financial Sustainability.

One of the main factors influencing non-financial organizations' financial performance is their intellectual capital (IC). Businesses can maximize resource usage and boost their financial performance by investing in both physical and intellectual capital (Ali et al., 2022). The objective of this study was to ascertain whether the financial performance of listed Indian and Pakistani companies was impacted by intellectual capital efficiency between year 2010 and 2020. The term capital refers to an asset that will generate cash flows in future. When one thinks of capital, they typically think of tangible assets, such as financial and physical ones, that are simple to locate on the balance sheet of the company's financial records.

There are several definitions of intellectual capital put forth by academics. According to the most widely accepted definitions, intellectual capital is the combination of an organization's organizational, relational, and human resources and activities with intangible assets and activities that make an institution transform resources into a system

that can generate value for stakeholders (European Commission, 2006.) In his 2002 paper named Taxonomy of Intellectual Capital, Paolo Magrassi refers to the collective knowledge and abilities of the organization's workers as human capital. Organizational intellectual capital is the cumulative knowledge that a company possesses that surpasses the abilities of its individual employees.

Human capital is an intangible resource that includes the teams and individuals that make up the business as well as the talent, experience, skills, and information that they process and apply to the company's success (Huff, 2015). The organization uses structural capital, which consists of information systems, databases, knowledge applications, and procedures, among other infrastructures, to carry out its plans. Relational capital is the knowledge that exists within the company network and the external relationships that the company has with its suppliers and consumers, which foster loyalty and goodwill.

In order to optimize the wealth of its shareholders, the non-financial industry worldwide is clearly utilizing technology and intellectual capital to the fullest extent possible (Asif et al., 2020). Ramírez et al. (2020), looked into SMEs in Spain and found out that intangible resources have a good effect on the financial performance of the company.

Roos et al. (2017) found out that customer capital illustrates the interaction between customers and the business, as they measured the intellectual development within an organization. Long-term economic growth of the nation may also be impacted by the problems. Sadly, no research has examined how intellectual capital affects long-term financial viability. Kenyan universities are the reason this knowledge gap is being filled by the current study.

To provide their customers with the finest service possible and foster a fruitful business connection that will ultimately lead to financial sustainability, managers should take the time to get to know their tastes, backgrounds, demands and priorities. As a relational capital project that will foster goodwill and ultimately boost the firm's performance, institutions should engage in corporate social responsibility activities (Farah, 2020).

Research on non-banking companies in Pakistan and India has shown that lack of resources, lack of support and poor management abilities are the main causes of the high failure rate (Al-Qahtani & Elgharbawy, 2020). Moreover, the institutions do not have financial and technological resources necessary for counteracting both internal and external inherent risks, such as the political unpredictability of Pakistan, rising taxes, rising import costs, high debt ratios of Indian businesses, high tariffs and protectionist policies of India, state-specific regulations, competition, and local content laws in India (Sharma & Motta, 2020).

According to a study by Farah (2020), operational automation and integrated communication systems have a direct effect on the financial viability of Kenyan SACCOs. The Researcher also discovered that the credentials and competency of employees had a huge impact on the Kenyan Sacco's financial sustainability. The

Researcher discovered that Customer capital has a high effect on Kenyan SACCOs' financial sustainability.

The research found out that structural capital did not have much effect on the financial sustainability of SACCOs in Kenya. Customer capital had the greatest impact on financial sustainability, followed by relational capital, while structural capital had the least impact.

Consequently, Pakistani companies faced a range of challenges that necessitated the utilization of tangible and intangible assets, expertise, and knowledge in order to enhance overall performance of the organization (Ali et al., 2022).

Emerging economies like India and Pakistan are looking for intangible talents, particularly Intellectual Capital, to improve their performance because of lack of convenience and the high cost. But as a result of the shift in the global economy from one centered on industries to one centered on information, businesses have turned their attention to building their intangible assets in order to remain competitive and generate revenue for financial sustainability (Gupta et al., 2020).

IC, unlike tangible assets, is not recorded on a company's balance sheet, despite the fact that it contributes significantly to the production of wealth (Xu & Liu, 2020). Systems, databases, staff skills, and R&D that give a competitive edge are examples of intangible assets (Ahmed et al. 2019; Kweh et al. 2019). Cuozzo et al. (2017) posits that IC encompasses environmental, social, and economic factors in addition to financial benefit. According to Shahwan and Habib (2020), the total of all worker's abilities, knowledge and skills that produce value for the company is known as IC. As a result of businesses' realization of the value of knowledge and the necessity of managing it effectively, the knowledge economy has grown.

The growing importance of the information economy has led to a significant increase in the relevance of IC (Cabrita, 2009). As per Gupta et al. (2020), there are three constituents of IC: Human capital is the dedication, skills, drive, and allegiance of employees; structural capital is the systems, processes, and arrangements; and relational capital refers

to the connections between businesses. The ties that exist between employees, groups, and organizations are what give the firm its innovativeness (Sardo et al., 2018). Financial resources, a strong infrastructure, and cutting-edge technology are nearly useless without skilled labor (Tran et al., 2024).

The firm's external connections are strengthened via RC (Afriyie & Oppong, 2015). The two main sources of RC creation are sales and advertising expenditures. Businesses with high RC cultivate more partnerships, increasing their interconnectedness. Explicit contracts are periodically replaced by trust, which is mostly developed through interdependence-related social interactions (Afriyie & Oppong, 2015).

The current recognition of the critical role that employment and efficient use of Intellectual Capital play in the growth of the non-financial sector underscores the relevance of IC, particularly with regard to the such sectors of Pakistan and India. This is because non-financial industries with IC generally provide services of high quality by establishing brands, strengthening stakeholder relationships, updating systems, and updating procedures. In order for the non-financial sector to function in a competitive manner, effective and efficient management of IC becomes crucial. Globally speaking, it is clear that the non-financial sector is utilizing innovation and technology to the fullest extent possible in order to optimize shareholder wealth (Asif et al., 2020).

As such, in order to achieve better financial performance, the non-financial industry is increasingly placing more emphasis on IC and cultivating connections with stakeholders than just hiring a large number of people. According to RBT, achieving organizational goals requires both tangible and intangible resources (IC).

By concentrating on the financial results of 12 Pakistani oil and gas corporations, Kharal et al. (2014) ascertained the actuality of IC from 2005 to 2013. The results of the study show that IC greatly enhances financial performance. Using a sample of 20 Pakistani and 29 Chinese institutions, Xu and Li (2019) examined the impact of IC on the financial performance of banks from 2010 to 2019. The results indicated that both countries' banks' IC had a positive impact on their financial performance.

Shumaila and Afza (2014) looked into how an enterprise's IC and performance correlated between 2009 and 2011. After examining 100 chemical and textile companies, they assert that Intellectual Capital had a positive effect on financial performance of companies. Three IC components' effects on the performance of twenty conventional and Islamic banks were examined by Rehman et al. (2012). Using predictive analysis, they concluded that IC positively affects banks' performance.

The effect of IC on the financial performance of financial sector in India was studied by Waqar et al. (2020) using data from 101 banks' financial statements from 2009 to 2018. To evaluate the data, they employed the VAIC approach and multiple regression. They came to the conclusion that banks' financial performance is positively impacted by HCE, CEE, and SCE, with CEE having the most effect. Mbithe et al. (2024) examined the role of stakeholder engagement in enhancing corporate social responsibility (CSR) in private universities in Kenya. The study found that meaningful engagement with stakeholders, including students and alumni, positively influences the universities' CSR initiatives and overall institutional success.

Businesses must give the productivity, efficiency, and growth of their intangible assets the

same consideration as they do their tangible asset growth. It is impossible to exaggerate the role that IC plays in an economy that is knowledge-based in terms of the production value of businesses. The IC is made up of resources including networking infrastructure, information systems, relationships with stakeholders, human capital, and procedures. Such resources are essential in increasing productivity and cutting expenses in a business. Organizations with high internal capital (IC) will do better financially because they are able to manage assets in an efficient and effective manner. The capacity of IC to create value has a direct impact on a company's financial performance (Ali et al., 2022).

The effect of Intellectual Capital was examined by Ozkan et al. (2017) in a study of 44 Turkish banks. Capital-employed efficiency, human capital efficiency, structural capital efficiency, and were the 3 components of IC, which was quantified using the VAIC. Bank profitability was found to be significantly and favorably impacted by HCE and CEE, according the study. Through training and development, policymakers must concentrate on producing skilled healthcare workers. Furthermore, RC is important for business performance, meaning that management needs to pay attention to social welfare in the community in which the company operates in addition to HC.

The importance of the IC to organizational outcomes needs to be made more widely known to managers. Thus, the authorities have the ability to assist in the procurement of important technologies and provide technical support for the advancement of managers and practitioners within the industry. In order to help managers and investors make strategic decisions and to make the public aware of the hidden business value in knowledge-based resources, the study also suggests that financial reporting standards on

IC disclosure be implemented (Jenkins, 1983).

The performance of 21 insurance companies was favorably impacted by intellectual capital between 2009 and 2010, according to Rehman et al. (2013). Twelve Pakistani oil and gas companies' financial results were examined by Kharal et al. (2014) to ascertain the effect of IC between 2005 and 2013. The results of the study showed that intellectual capital has a major and positive impact on financial success.

Businesses now need to concentrate on growing their intangible assets in order to compete and create value for long-term success as a result of the shift in the global economy from an industry-based to a knowledge-based economy (Gupta et al., 2020). Research and development, systems, databases, staff expertise, and systems that give a competitive advantage are examples of intangible assets (Kweh et al., 2019).

Kombo and Mwangi (2023) in their research investigated the strategies employed by Kenyan universities to enhance partnerships and collaborations. Their findings indicated that over 55% of respondents acknowledged a moderate to substantial existence of partnerships within their institutions, reflecting a positive perception of external collaborations. This study underscores the significance of strategic partnerships in enhancing the performance and sustainability of universities in Kenya.

Intellectual capital, according to Cuozzo et al. (2017), includes economic, social, and environmental benefits in addition to monetary gain. Shahwan and Habib (2020) assert that all employee competencies that provide revenue for the company lead to IC. In the quickly changing business environment, intangible resources (IR) in particular are becoming more and more crucial for establishing a competitive edge and improving

financial performance.

The body of research reveals conflicting results, notwithstanding earlier studies' suggestion that IC and bank performance are related. Research also shows that banks gradually move away from lending due to competition, financial liberalization, and declining interest income (Githaiga, 2022). The competencies, interpersonal skills, and values of employees can all be further subcategorized under human capital. The global economy is currently transitioning from one centered on production to one centered on knowledge (Drucker et al., 2010). In an economy based on knowledge economy, IC is essential to an organization's performance. In an economy driven by knowledge, concepts are turned into goods and services (Khalique et al., 2011).

In order to develop novel ideas, products, and services with a competitive advantage, knowledge workers are crucial. According to Drucker (1999), the productivity of knowledge workers will present the largest managerial problems for businesses looking to gain a competitive edge in the twenty-first century. Organizational ability is the primary determinant of knowledge productivity. Workers with knowledge are the primary sources of an organization's ability. In same manner, Khalique et al. (2011) asserted that in a knowledge-based economy, an organization's ability to succeed is significantly attributed to its IC.

Wanambiro (2019) conducted research to investigate how intellectual capital initiatives affect the production of value in Kenyan public universities. The study concentrated on how value creation in Kenyan public universities is impacted by initiatives related to human and relational capital. Activities related to structural capital, relational capital, and

human capital were found to be positively correlated statistically in Kenyan public universities.

According to Ngugi (2013), the growth of SMEs is significantly influenced by the components of intellectual capital, including innovativeness, entrepreneurial skills, customer capital, management skills and structural capital. With a correlation coefficient of 78.9%, management skills were found to be the most significant aspects of intellectual capital influencing the growth of small and medium-sized enterprises in Kenya.

Customer capital was shown to have the largest impact on the financial viability of SACCOs in Kenya. (Farah, 2020). Structured capital was shown to have the least influence, with relational capital impact trailing closely after. Gachanja et al. (2024) examined the relationship between knowledge sharing capability and competitiveness in chartered public universities in Kenya. The findings revealed that knowledge sharing significantly influenced the competitiveness of these institutions, suggesting that universities effectively leverage their intellectual capital to enhance performance.

According to the index of the World Bank Knowledge Economy, which measures a nation's capacity for knowledge creation, acquisition, and dissemination, the European Union is leading the pack, according to a 2014 World Bank report. According to expert research, companies in Europe that only partially utilize intellectual capital obtain a contingent gain of 14% on average. Companies that view their intellectual capital as the foundation of their development earn 61% of contingent gain, while those who use it more actively receive 39%.

Nteere (2021) examined the influence of service quality on customer satisfaction among

students at the Co-operative University of Kenya. The findings revealed that while certain service quality dimensions significantly affected customer satisfaction, others like reliability and responsiveness did not show a significant impact. This suggests that existing service delivery methods may not effectively foster customer loyalty. This study underscores the importance of enhancing specific service quality dimensions to improve customer satisfaction and, consequently, loyalty within universities.

Utilizing their own resources and repurposing their inventiveness to form long-lasting organizations is another way that businesses make money. Knowledge resources today have a greater potential to add value to firms and generate competitive advantage than financial and physical resources (Fischer & Sojer, 2017).

Identification, comprehension, and measurement of the underlying parts of IC, social capital, human capital and other attributes are all part of the global intellectual capital research effort. Intellectual capital research proponents contend that these imperceptible elements have an impact on businesses' performance. (Bontis, 2012; Sharma, 2018; Venugopal & Subha, 2015). Global markets and technological advancements drive businesses to constantly innovate. (Steele & Markins, 2005). based on the idea that gaining a competitive edge requires a strong emphasis on intellectual capital, which is shared by practitioners and the academic community. Institutions need to reconsider their approaches to problem-solving and maintaining competitiveness in the context of knowledge businesses (Chahal & Bakshi, 2014).

Many people believe that intellectual assets including trade secrets, organizational structures, human capital, and patents have a significant role in business success and

economic expansion (Bontis, 2012). One organizational capability that positively affects competitive advantage is intellectual capital (Ahangar, 2011). In order to gain a new strategic advantage and thrive in a highly competitive global market, IC has consistently encouraged development and innovation (Grant, 2015). Constant investment is necessary for a firm to thrive in a knowledge-based economy. Businesses invest in knowledge, research and development, and inventions (Ramona, 2016). Three types of intellectual capital are generally agreed upon by scholars: relational, structural, and human capital (Benedetta et al., 2017; Edvinsson & Lin, 2013).

Customer/relational capital, human Capital and structural capital are the three levels at which intellectual capital is thought to exist: the individual, the network, and the organization. To develop capabilities that leverage value, it is suggested to combine and recombine intellectual capital components in unique ways. Many scholars of intellectual capital (Ramona, 2017; Sharma, 2018) have adopted a conceptual definition, which is adopted in this article. A company's whole knowledge of its relational, structural, and human capital all of which offer it a competitive advantage is summed up as its intellectual capital.

The skills, knowledge, and abilities that people have earned through training, experience and education, is known as human capital. Relational capital in an organization has been referred to by academics using terminology like customer capital, external capital, and relation capital (Edvinsson & Lin, 2013). The resource-based view of the company provides evidence that social capital's path dependence, social complexity, and tactfulness can provide a competitive edge. Chen (2006). Though social and human capital are still

important, structural capital has been identified as the missing piece that makes it possible to evaluate intellectual capital at the organizational level (Wang, 2011).

Therefore, it is possible to purposefully create intellectual capital constructs that add value and develop in order to leverage performance. Scholars who have observed that sets of intellectual capital factors interact and depend on one another to make a discipline that enhances overall performance (Cabrita & Bontis, 2010; Inkinen, 2015).

In Kenya, academics, management professionals, and consultants have developed a keen interest in the topic of intellectual capital management and theory. There are relatively sporadic attempts worldwide to identify, measure, and disclose information on the intangible determinants of value, despite the fact that this is acknowledged (Dumay, 2016; Edvinsson & Lin, 2013).

Kenyan universities would benefit from developing these metrics and management methods that would enable them do identification, quantification, and tracking of their intangible sources of resources in order to make the efficiency and effectiveness of their intangible assets better. As Kenya's environment grows more competitive, so do the other African nations (Mbirithi, 2013). Businesses need to reevaluate their strategies in order to maintain their relevance and social responsibility while gaining a competitive edge in their value-creating endeavors. Customers and stakeholders become important sources of information for the institutions' decisions and actions (Munjuri, 2014).

The Kenyan government's significant cutbacks in financing for educational institutions and other sectors suggest that these organizations will need to implement changes in order to stay relevant and live up to stakeholder expectations (Boit & Kipkoech, 2012; Kariuki

et al., 2012). Given the subsequent difficulties that universities must deal with, it is critical that they make choices that will allow them to overcome capital shortages and maximize their production. Information about the institution's intangible assets and how value creation will be generated and maintained is essential to this study (Ngari et al., 2015).

The field of intellectual capital has seen a significant amount of research. These studies mostly focus on the pharmaceutical industry, where Ngari et al. (2015) conducted a study on IC and accounting in pharmaceutical industry. The performance of these firms was found to have a substantial positive association. Additionally, a study was conducted on the relationship between small and medium-sized business performance and intellectual capital (Ngugi et al., 2014). The study proved that social and human capital, in particular, are important components of intellectual capital for corporate performance.

Research has been conducted in the banking industry to ascertain how performance and intellectual capital components interact. Performance was found to be significantly improved by human capital (Munjuri, 2013). Relational capital contributions to institutional performance, there are conflicting and often contradicting data. The literature study revealed both positive and negative contributions. Financial and non- financial indicators were employed in the majority of intellectual capital research methodologies used in Kenya. The results presented are at odds with global practices that prioritize intangible assets that could be difficult to quantify (Bisogno et al., 2018).

Munjuri and K'obonyo (2013) found a substantial and positive association between corporate culture and intellectual capital and business sustainability for companies listed on the Nairobi Securities Exchange. The performance of Kenya's commercial banks was

found to have a substantial and positive link with human capital and social capital (Kariuki et al., 2013.)

Many strategies and the repurposing of intellectual capital capabilities from different economic sectors have been employed to provide performance in all of its forms in accordance with the strategic plans of organizations. One way that universities may stay relevant is through developing their capabilities.

Following the CUE requirements, some universities were deregistered, were given interim authority before closure because of the strict requirements for compliance that was to be followed (GOK, 2012). Concerns were raised in a variety of areas as institutions strive to reach performance targets and be relevant (Muraguri et al., 2014). According to Mbirithi (2013), a number of stakeholders have brought up the necessity for Kenyan universities to be sustainable and to provide programs that are in line market needs. The discrepancy between the university graduates' competence and their skill set has been documented as deficient, falling short of the required minimum levels.

The quick growth of universities in Kenya is a significant obstacle to resource management. The Kenyan economy has grown tremendously in several industries, with some crediting its success on partial or incomplete understanding of intellectual capital structures. Universities must reevaluate their value-creating procedures and activities in order to remain innovative in the face of the rapidly diversifying learning programs and university expansion in the higher education sector (Wanambiro, 2019). In particular, the more than twofold rise in student enrollment required adjustments to the structural and human capital (Muruchiu et al., 2014).

The social and economic pillar of Kenya's Vision 2030 would greatly benefit from the adoption of various techniques by institutions to further their strategic goals and, in particular, the quality of graduates released into the labor market. This study aims to assess the value creation contributions provided by Intellectual Capital Initiatives and determine how deeply embedded they have become in universities' capacities. Higher education is mentioned as a crucial industry in the nation's Vision 2030 strategic plan, which aims to help the nation achieve its objectives through innovation, training, and R&D. The strategic implementation plan for Vision 2030 by the Kenyan government outlines the goal of using science, technology, and innovation as a vehicle for social and economic policy implementation. According to GOK (2012), the plan was intended to lead the nation toward development.

Otiende et al. (2024) research examined the influence of organizational resources specifically human, financial, and physical assets on the performance of public universities in Kenya. The findings revealed a statistically significant positive relationship between organizational resources and university performance ($\beta = 0.504$; $t = 5.936$; $p < 0.05$), indicating that effective resource management and robust organizational structures contribute substantially to institutional success. This supports the observation that a majority of respondents believe their university possesses strong processes and structures that facilitate its mission and strategic vision. This study underscores the importance of well-established organizational systems and resource management in enhancing the long-term growth and operational sustainability of universities.

Kuria et al. (2021) research on "Influence of Customer Service Strategies on

Organizational Performance Among Private Universities in Kenya" found that while customer acquisition, service delivery, and customer retention positively affected organizational performance, customer recovery had an insignificant effect. The study recommended that private universities should invest in customer feedback to ensure customer retention and improve customer recovery strategies. These findings suggest that some universities may not fully recognize or strategically manage their customer relationships, aligning with the observation that a significant portion of respondents perceive the university as inadequately prioritizing customer relationships as a strategic asset. Finding out how much university adoption of intellectual capital projects had occurred and whether this had a major impact on value creation were the goals of the study. Approaches to intellectual capital management have produced good and noteworthy contributions to company performance, according to empirical studies.

The establishment of partnerships, alliances and networks that enable the business to maximize performance, as well as structures that facilitate and support well-thought-out plans and processes, are all factors that contributed to Kenya Commercial Bank's success in expanding throughout East Africa (Munjuri et al., 2015). According to its 2017 annual report, the international telecommunications company Safaricom also credits intellectual capital constructions for its phenomenal success.

Its three main pillars namely Operational Excellence, Relevant Products and Services, and Customer First were identified as the main forces behind its steady growth. The company's expansion has been credited to rising clientele, agency services, and products with high operational efficiency made possible by efficiency of human capital. The characteristics

of success have additionally been reinforced by training, ongoing development, and oversight of its operations with organizations in partnership and affiliated organizations (Wanambiro, 2019).

2.4 Theoretical Framework

This study is anchored primarily on Resource Mobilization Theory (RMT), which posits that the success and sustainability of organizations largely depend on their ability to acquire, manage, and strategically deploy resources (McCarthy & Zald, 1977). Within the context of higher education in Kenya, RMT provides a foundational lens through which universities' efforts to mobilize financial resources through business units, fundraising, and innovative financing mechanisms can be understood. The theory

underscores that resource availability, organizational capacity, and strategic action are central to achieving institutional objectives, including financial sustainability.

To strengthen the analytical framework, the study also draws upon Modern Portfolio Theory (MPT) by Markowitz (1952), which emphasizes the importance of diversifying investments to optimize returns while minimizing financial risk. MPT supports the study's examination of how universities invest in technology-enhanced learning and other revenue-generating initiatives to enhance financial resilience and reduce reliance on single funding sources.

In addition, Resource Dependency Theory (RDT) by Pfeffer and Salancik (1978) is incorporated to explain how universities, as open systems, depend on external resources and must strategically respond to environmental pressures, including fluctuating

government funding. RDT aligns with the study's focus on financial strategies adopted by universities to reduce vulnerability and ensure institutional autonomy.

Lastly, Intellectual Capital Theory provides a lens for analyzing the value derived from human, structural, and relational capital within universities. It supports the investigation of how intellectual capital moderates the relationship between financial resource mobilization strategies and institutional sustainability. The theory posits that effective utilization of staff expertise, systems, and stakeholder networks enhances institutional performance and long-term viability (Edvinsson & Malone, 1997).

Together, these four theories offer a comprehensive framework for understanding the multi-dimensional strategies universities employ to attain financial sustainability, while accounting for internal capabilities and external constraints.

2.5 Conceptual Framework

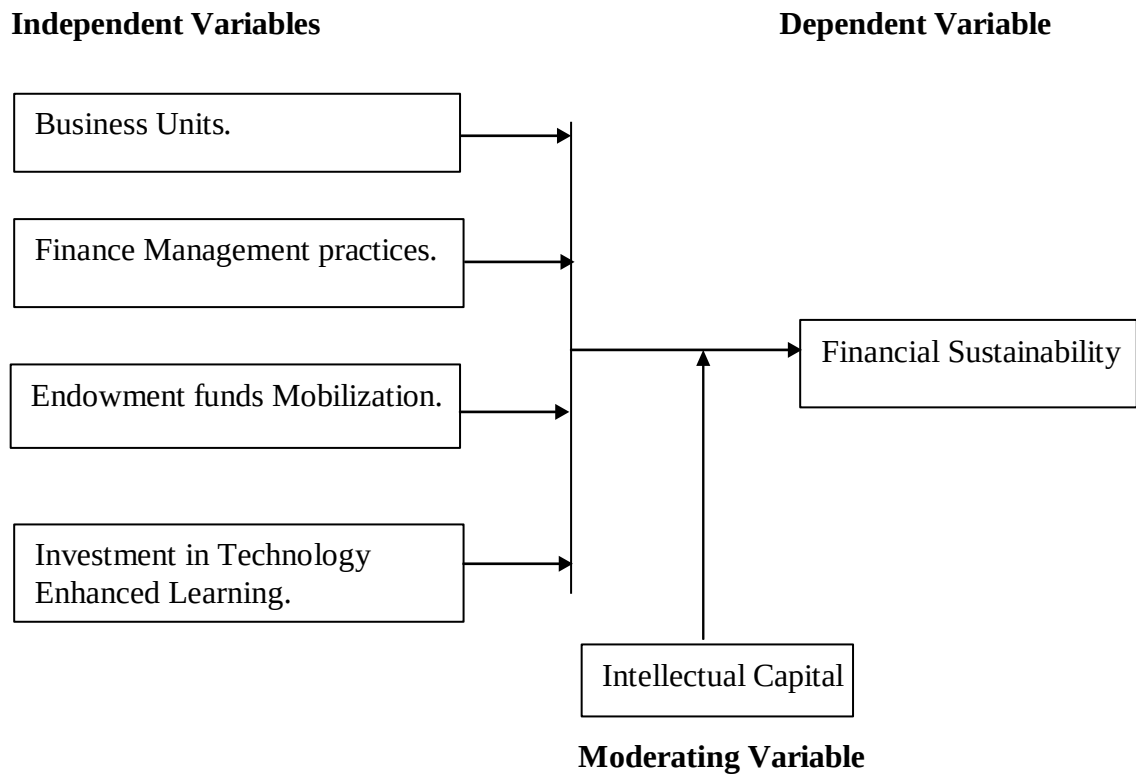
A textual or diagrammatic depiction of the expected relationships between the variables under investigation is called a conceptual framework. Figure 2.2 displays the conceptual framework for this investigation. It is produced by examining the corpus of theoretical and empirical research that has already been done, and it usually involves sub-constructing the variables (Mugenda & Mugenda, 2003). According to Oso and Onen (2016), every quantitative study has a framework, which is a model or strategy that arranges concepts composed of variables and makes them operational in order to accomplish the research work's goal. The conceptual framework is represented by a diagram that contains variables that are supported by theories. The theories clarify the relationship between variables and support the model. Tamene (2016) states that the

framework refers to the phenomenon that the researcher intends to study.

An event or case under study is a variable. According to Kaur (2015), in order to derive conclusions, the observed event must be examined. The income producing units, financial management techniques, mobilization of endowment funds, and investment in technology-enhanced learning are the variables under investigation. A cause-and-effect relationship can be better understood with the aid of independent variables. A quantitative study's analysis of the issue leads to the determination of the cause-and-effect. To assess the strength of the conclusions drawn from the study's sample of tested subjects, the analysis entailed evaluating the hypothesis and internal validity. In order to give the abstract notion under study a concrete purpose, the first step in the process of obtaining findings is to operationalize the explanatory variable. It facilitates the study's replication and reliability assessment for other researchers (Flannelly et al., 2014).

Figure 2.1

Conceptual Framework



Source: Researcher (2024)

2.5.1 Business Units

Since the universities' founding in the 1990s, income-generating units have been operational. Their creation was intended to protect universities against the consequences of the government's reduction in funding for capital and ongoing expenses. Up until 1991, when it was unable to continue funding higher education entirely, the Kenyan government was the only source of funding for this kind of education. Public universities were tasked with devising novel means of generating additional revenue to augment the steadily declining government capitation in order to escape this financial predicament.

Among other things, the Module II Program, research and consulting services, and commercial endeavors including hotels, hospitals, gas stations, and general manufacturing units were among the income-generating enterprises that public universities started as a wake-up call. Nonetheless, despite the establishment of these IGUs, the majority of public universities continue to face financial difficulties (Murage & Onyuma, 2015).

The administration of the university's supporting, commercial, and academic business units must be professional, effective, efficient, and accountable so that there is an increase of the volume and quality of business units. In its capacity as a public service organization, universities must investigate funding sources outside of education. Universities are able to handle funds and bring in extra money generated money, in particular. When it is successfully implemented, everyone in the institution receives more substantial money through larger incentives, which helps to enhance the financial circumstances of all academics, personnel, and institutions (Mahmud et al., 2023).

Despite the establishment of business units in Kenyan universities since the 1990s to supplement declining government funding, financial unsustainability persists because many of these units operate inefficiently and fail to generate meaningful surpluses. Several business units across public universities have consistently recorded operational losses due to weak managerial systems, inadequate monitoring and evaluation, and lack of entrepreneurial orientation. Audits by the Auditor-General and case studies such as those at the University of Eldoret show recurrent losses in catering and farm operations, revealing that mere existence of business units does not guarantee profitability or sustainability. Consequently, instead of cushioning institutions against reduced capitation

and escalating costs, loss-making business units have in some cases compounded financial strain, leaving universities burdened with mounting debts, salary arrears, and deteriorating infrastructure

2.5.2 Finance management Practices

Methods of Financial Management as a continuous process that includes planning, organizing, regulating, and monitoring an organization's financial resources to make sure it achieves the anticipated goals, results, and impacts, financial management is defined by AWDF (2017). Financial management is described by Lightbody (2017) as a process that includes managing financial resources, including decisions made on capital budgeting, accounting, financial reporting, and forecasting.

Financial management, according to Mengesha et al. (2014), entails more than just maintaining correct bookkeeping. Planning, regulating, and overseeing the organization's financial resources is part of its broad scope, and it helps the company accomplish its goals.

According to Paramasivan and Subramaniam (2009), the most widely accepted definition of financial management is that it deals with raising capital and using it effectively and efficiently for corporate purposes. Planning for an organization's future can help ensure that there is positive cash flow, which is a key component of financial management. Directing, Planning Organizing, and managing financial processes which could include funding utilization and procurement are all part of the financial management process.

Financial management, as seen from an organizational standpoint combines financial

reporting, budgeting process, and financial planning. Through financial planning, a company can estimate its various financial resources and determine the best schedule for the amount and timing of its expenditures (Golda, 2013)

2.5.3 Endowment funds Mobilization.

A college or university can invest a pool of money to support its educational and research purpose forever, and that money is called an endowment fund. It usually consists of hundreds or thousands of little gifts. The majority of these contributions come from well-wishers, the business community, and alumni. They also enable the school to make long-term pledges since they guarantee the availability of funds to fulfill them (Mwanyasi, 2022).

A university or other learning institution might also invest a pool of money called an endowment fund to support its research and education endeavors for all time. It incorporates gifts to support academic programs and college developments from people, financial institutions, university alumni, and well-wishers (Kenya News Agency, 2023).

In order to ensure the university's stability and fulfillment of its mission, including financial sustainability, the amassed assets must be used into a transparent and efficient endeavor in order to start the endowment financing process (Kawamorita et al., 2020).

A certain amount of the fund may be taken by universities each year to support their annual operations. Five to 5.5% of market return is the annual endowment payout rate that Harvard aims for. The whole purpose of this is to guarantee that subsequent generations will benefit equally from these gains as we do. Endowments are structurally made to

endure indefinitely. More than 14,000 separate endowments make up Harvard's total endowment. Over 75% of the donations it got the previous year, on average, were for Sh18,600 per contributor. Rewarding teachers, researchers, and students now and in the future is a wonderful way to express gratitude(Mwanyasi, 2022)

2.5.4 Investment in Technology Enhanced Learning

Using technology to aid learning, whether it takes place remotely or on campus, is known as technology-enhanced learning, or TEL. While educational films, radio, and television have historically been a part of this technology, today's technology-enhanced learning focuses more on the use of technologies that are computer based, such as smartphones and other assorted smart devices (Sen & Leong, 2019).

The emergence of advanced technologies and their associated uses in the sphere of education lead to a number of advancements concerning teaching and learning methodologies as well as procedures for overseeing educational establishments at various levels and areas. The education sector is expected adjust to difficulties and structures that the modern technological revolution sparks in order to adopt and adapt to these improvements, since technology advancements touch all aspects of life.

To guarantee the viability of the education sector in the future, it is therefore imperative that technology advancements be managed in an efficient and proactive manner in the present (Visvizi & Daniela, 2019).The worldwide health crisis brought to light the necessity of considering process dynamics, digitizing educational processes concurrently, and evaluating the caliber of research and instruction. It turned out that traditional colleges

were best equipped to handle the shift to mixed and remote learning. While some universities had their own platforms for online learning, others have to bring these systems up rapidly, adding to the workload for the staff involved in dissemination of the curriculum. In addition, substantial expenditure is required by universities in order to offer remote work for all of their departments (Petlenko et al., 2021).

2.5.5 Intellectual Capital.

Intellectual capital is defined as intellectual resources that have been gathered, organized, and used to create assets with higher value (Prusak, 2008). Intellectual Capital can be categorized as customer capital, organizational capital and human capital (Bontis, 2012; Roos & Roos, 2007). Owners' managerial abilities, which represent a portion of intellectual capital, are among the most crucial resources that businesses rely on to increase their efficacy and efficiency and, thus, obtain a competitive edge, according to (Bontis, 2012).

According to Nielsen et al. (2006), a company's ability to expand is aided by its human capital, which is comprised of its pool of knowledgeable workers, management style, and expertise. The value of training, competence, and future investments made in employees is referred to as managerial skills. As a result, human capital includes individual value in an economic sense (Becker, 2002). The phrase emphasizes on the value of what an individual may contribute.

Mahmud (2023) examined the variables affecting a university's ability to generate income, focusing on the contribution of staff involvement and awareness to revenue growth. The research investigated the direct and indirect impacts of employee involvement, awareness,

and upper management backing on revenue-generating capabilities. The findings demonstrated how staff awareness affects management support functions, which in turn influence senior management assistance and ultimately mitigate the effect of managers' understanding of revenue-generating performance. Additionally, the performance of revenue generation is impacted by senior management support.

In summary, the field of modern management and economic science considers the development of theory and practical research in the area of intellectual capital to be an important contribution. This has led to a convergence of interests from various disciplines such as finance, physics, engineering, economics, human resource management, and management science. The complimentary character of these research aids in bolstering efforts to create channels by which businesses might deploy their resources to achieve financial sustainability.

2.5.6 Financial Sustainability

To ensure the continuous and long-term accomplishment of an organization's mission, goals, and objectives, financial sustainability refers to an entity's capacity to maintain or enhance its financial viability over time (Barrow & Rouse, 2016). Being a going concern, meaning there is no chance of failure or significant downsizing of activities, means that an entity must be financially sustainable. Thus, it addresses every facet of a company's financial well-being, such as leverage, short term and long-term state of solvency, level of profitability, turnover, operating liquidity, apparent risk exposure and ability to generate revenue, in addition to financial position and financial flexibility. The primary component of an entity's value-adding chain is this (Barrow & Rouse, 2016).

According to Shipway (2009) and Barrow and Rouse (2016), financial sustainability can be defined as capacity to sustain or enhance financial viability in the long run for purpose of guaranteeing accomplishment of an organization's objectives, goals and missions in the long term. Higher education that supports a country's socioeconomic growth and is financially viable is supposed to be provided by institutions of higher learning (Chumba, 2023).

Increasing services to the public while fortifying against sporadic economic downturns is the aim of financial sustainability for universities. An organization that has long term sustainability but is unsustainable in the short term will have continued cash flow problems according to Deloitte (2015) and Ngenoh (2020), who both highlighted that the crisis in the global economies exacerbates the problem of financial crises in universities.

It is essential to comprehend the variations in elements linked to financial sustainability in order to achieve an institution's long-term goals (Kathomi et al., 2022). As noted by Chumba (2023), an organization's ability to produce enough revenue from its clients to sustain itself for the foreseeable future is a major factor in financial sustainability. This is especially true for value-adding activities done properly. Organizations must be financially sustainable in order to fulfill their long-term goals of maximizing stakeholder welfare and corporate wealth.

The relationship between three main components and their interaction is what Mandanici and Pace (2016) suggest when they discuss financial sustainability namely Liquidity, financial autonomy, and leverage .Universities' value-adding chain is centered on three concepts: teaching, research and innovation, and community engagement. This suggests

that the universities must be consistent in their financial wellbeing in relation to their position, financial performance and adaptability from these three concepts in order to remain financially viable. Because of the governments' declining financial support, universities are finding it more and more difficult to maintain consistent financial performance, achieve healthy financial status, and attain financial adaptation into the future (Almagtome et al., 2019).

Minyoso (2020) research titled "Determinants of Financial Sustainability of Public Universities in Kenya," highlights liquidity management as a critical factor influencing financial sustainability. The study found that inadequate liquidity management practices negatively impact the universities' ability to meet short-term obligations, reflecting stakeholders' perceptions of financial instability. The descriptive analysis indicating that 71.6% of respondents perceive the university as maintaining a sustainable debt level is contradicted by recent empirical studies and reports highlighting significant debt challenges faced by Kenyan public universities. For instance, a study by Mose et al. (2024) titled "An Empirical Analysis of Public Debt Sustainability in Kenya" reveals that Kenya faces a high risk of debt distress, with public debt levels escalating due to persistent fiscal deficits and economic shocks. This environment affects public institutions, including universities, which are experiencing increasing debt burdens.

A study by Gichoni and Njoroge (2023) research, titled "Effects of Debt Management Practices on Service Delivery among Public Universities in Kenya: A Case Study of Egerton University," indicates that despite efforts to manage debt, public universities in Kenya face significant challenges. The study highlights that massive debts, resulting from

capitation shortfalls, have jeopardized service delivery in these institutions. To address these financial strains, universities have resorted to measures such as asset liquidation and the closure or merger of satellite campuses. These strategies, while aimed at debt management, have implications for the quality and accessibility of education services.

A study by Chumba et al. (2025) found that Kenyan universities have invested in various income-generating ventures, such as real estate and consultancy services, which contribute to financial sustainability. For instance, investments in real estate had a high mean score ($M = 4.69$), indicating strong agreement among respondents about their effectiveness in revenue generation.

A study by Kithinji et al. (2023) research titled “Cash Management and Financial Performance of Public Universities in Kenya”, found that many universities reported deficits in their income statements, leading to a financial crisis that could potentially halt operations. The study emphasizes that proper cash management is essential for organizational survival, and the inability to identify relevant cash management practices contributes to poor financial performance.

Table 2.1

Financial ratios for measuring financial sustainability

Erasmus and Viviers (2014)	Correia et al (2019)	Brigham et al (2016)	Lasher (2014)
Liquidity	Liquidity	Liquidity	Liquidity
Profitability	Profitability	Profitability	Profitability
Asset management	Turnover (activity)	Asset management	Asset management
Debt management	Solvency	Debt management	Debt
Cash flow	Cash flow	Market	Market value

All authors utilize two sets of ratios: profitability and liquidity. Three authors employ

three additional sets of ratios: market value, asset management, and debt management. Financial performance ratios take the place of profitability since a university's financial structure does not include market value or profitability. Financial performance indicates if the institution's ongoing revenue is sufficient to pay its ongoing expenses while allowing for reserve building and strategy to align with the strategic objectives and the university's vision (McLaren & Struwig, 2019). The five categories of ratios namely liquidity, debt, asset, cash flow and financial performance will be taken into consideration in this study in order to determine financial sustainability, taking into account the university's context and the definition of financial sustainability.

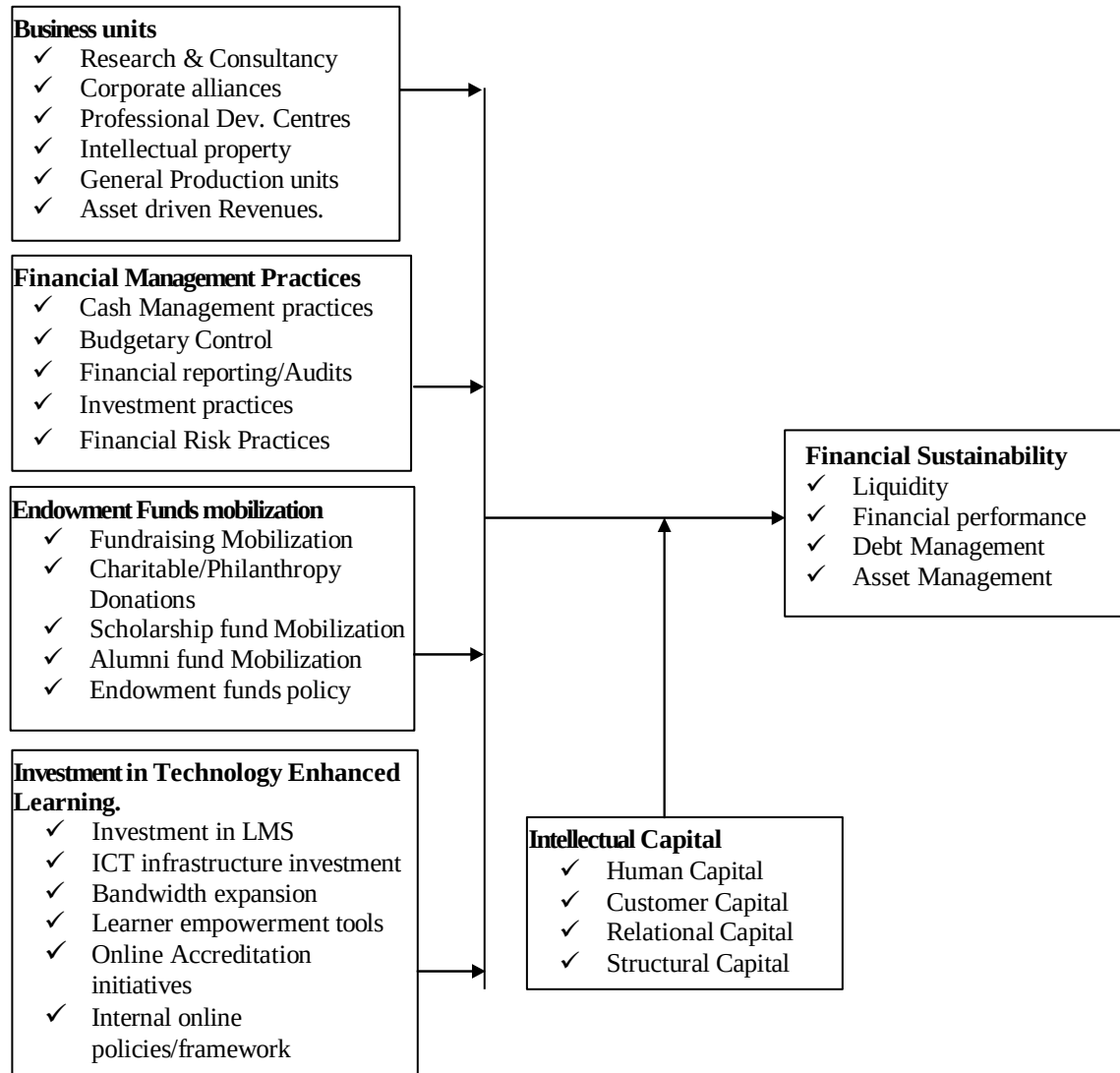
2.6 Operational Framework

Figure 2.2

Operational Framework

Independent Variables

Dependent Variable



Moderating Variable

2.7 Research Gaps

Ngolovai (2006) asserts that the money production strategies Kenyan universities have implemented over time only partially alleviate the enormous financial stress these institutions are currently bearing. According to Riechi (2012), there is a dearth of evidence supporting the importance of income-generating units in Kenya's public university funding. It is still unclear how these self-financing projects will affect public universities' overall funding, according to the researcher. This begs important issues regarding the extent to which Kenyan university budget finance is impacted by these methods of generating cash.

A comprehensive investigation into the contributions made by IGUs to the financing of universities is required, as Kenyan universities still face financial difficulties even after establishment of various IGUs with financial gaps being visible in their financial operations (Murage & Onyuma, 2015). This study aims to bridge the knowledge gap and clarify why, even after IGUs were established in the early 1990s, universities continue to face financial difficulties.

According to Niki et al. (2017), raising tuition costs might not be a workable way for colleges to increase revenue. Due to the fact that the majority of students attending public colleges are not wealthy, the majority of the poor will be prevented from attending if tuition is raised over a certain point, and the few who can afford it might not contribute enough to the institution's financial survival. The reason for this is that a critical mass needs to be reached so that the Higher education institution takes advantage of economies of scale while the average cost for every university student is considerable. Otherwise, it

becomes more challenging to establish financial sustainability (Niki et al., 2017).

The inelastic nature of the fees collection approach for revenue mobilization is a problem. A significant increase in fees could actually lower rather than raise them since it would make a university degree unaffordable for the majority of aspiring university students. According to Dumestre (2016), for example, higher education has grown quite expensive across universities. Ahmad et al. (2019) assess the financial viability of universities with regard to the necessity of raising tuition as a way to increase university revenue. According to the report, institutions should make full use of all of the resources at their disposal.

Dumestre (2016) demonstrates that it cannot continue financially unless a deliberate overhaul of university operations is implemented. It was demonstrated that tuition increases drive many potential college students out of reach by exceeding inflation and the growth in median middle-class salaries. Relational capital and the financial viability of SACCOs were found to be positively correlated in a study conducted by Farah (2020). The financial viability of SACCOs in Kenya was found to be positively impacted by relational capital. The study also discovered a favorable relationship between human capital and SACCO financial sustainability. The study went on to conclude that as human capital fosters innovation and strategy renewal, it is essential for the organization. The financial viability of SACCOs and customer capital had positive correlation in the same research.

The study also came to the conclusion that Kenyan SACCOs' financial viability is positively impacted by customer capital (Farah, 2020). Because no research has been done to establish the impact of IC as a moderating variable to the financial sustainability of

universities, the current study closes a significant research gap.

The long-term viability of tuition-based colleges was assessed by Pavlov and Katsamakas (2019). The study's findings demonstrated that regular colleges, when viewed as service systems, incorporate intricate cause-and-effect feedback loops. Sustainability solutions, such as upgraded facilities and reduced variable costs, assist in boosting the colleges' short-term financial viability but fall short of ensuring long-term.

In the fast-paced world of today, intangible resources and IC in particular are turning into important sources of both greater financial performance and competitive advantage. The body of research reveals conflicting results, despite earlier studies' suggestion that IC and financial performance are related (Githaiga 2022).

This study is the first to attempt to establish the correlation between financial resource mobilization, the IC and financial sustainability, considering the body of available studies. With this background in mind, the purpose of this study is to close research gap in academia by investigating the possibility that Intellectual Capital mediates the relationship between financial resource mobilization tactics and the financial sustainability universities in Kenya. Githaiga et al. (2020) contends that qualitative assessments of IC could provide insight into the relationship between IC and financial sustainability for future researchers.

Additional research on the IC and financial sustainability was suggested by the study, with an emphasis on non-financial economic sectors like manufacturing, health care, and education. Studies that investigate the relationship between resource mobilization strategies and financial sustainability are few, despite the commonly held belief that they

do. Furthermore, both the scope and methodology of the current investigations are flawed. Previous studies have mostly focused on financial sustainability within public institutions, but they have not looked at the connection between financial resource mobilization tactics and financial sustainability within institutions of higher learning.

Ozili (2021) contends that more attention ought to be paid to the ways in which specific facets of finance might support sustainability. In order to expand the relatively tiny sustainable finance industry, he suggests that light-touch regulation may be required. He also suggests using a bottom-up strategy and short-term financial instruments to supplement long-term instruments in sustainable financing. from the standpoint of funding for universities.

As a result, current research is methodologically limited in its ability to explain the variation in financial sustainability caused by modifications in resource mobilization tactics, trapping managers and shareholders of private institutions in the process of formulating policy.

Furthermore, there are a lot of conflicting results from research that tried to look at the connection between resource mobilization tactics and financial sustainability. The issue remains unclear because some researchers (Ekpoh & Okpa, 2017; Salam et al., 2019) found a positive relationship while a study by Paul (2021) found a negative relationship.

Table 2.2*Summary of Research Gaps*

Author(s)	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
Mgaya and Rupia (2022)	Resources mobilization strategies and implementation of competency-based curriculum in secondary schools: A case of Kilolo District, Tanzania	Simple random and purposive samplings were employed. The study used questionnaire, interview and observation to collect data	In order to obtain the resources required for the implementation of the CBC, secondary schools must use a variety of resource mobilization tactics.	This was a case study that focused on Secondary schools with competence-based curriculum as the response variable	This study will focus on the influence of financial resource mobilization strategies on financial sustainability of Universities in Kenya
Kobugabe and Rwakihembo (2022)	Financial resource mobilization strategies and financial sustainability of private Universities in Uganda	Primary data collected using structured self-administered questionnaires	The study found a positive correlation between financial sustainability and financial resource mobilization tactics.	The Study concentrated only on private Universities and used the two broad objectives as the predictor Variables	This study will focus on both private and public Universities in Kenya. The study will use five specific predictor variables to predict the influence of financial sustainability of Universities in Kenya.
Lutembo (2020)	Financial resource mobilization business strategies used in public secondary schools of Lusaka district of Zambia	Descriptive survey design using Interview Guide, and Document analysis as the data collection instruments.	Based on the study, secondary schools used a variety of cash mobilization tactics because government grants were inconsistent.	The study was done only in Public Secondary Schools and not in universities	This study will focus on financial resource mobilization strategies in Kenyan Universities
Adeyeye (2021)	Financial resource mobilization and sustainability of non-governmental organizations in Nigeria.	Purposive sampling technique and structured questionnaire used for primary data collection.	The study found that government funding has little positive impact on an NGO's sustainability; instead, individual contributions	The study was done on non-governmental Organizations(NGOs) and not in the education sector.	This study will focus on financial resource mobilization strategies in Kenyan Universities.

			have a significant impact.		
Gachunga (2021)	Influence of resource mobilization on competitiveness of TVET Institutions in Kenya.	Descriptive research design with a structured questionnaire	The results showed that resource mobilization was a crucial component of the strategic leadership that influenced Kenya's TVET institutions' ability to compete. Findings indicated a weakly positive correlation between public training institutes' internal efficiency and their mobilization of financial resources.	The study was done in TVET institutions and did not focus on universities. Competitiveness was studied as the response variable	This study will focus on the influence of financial Resource Mobilization strategies on financial sustainability of Universities in Kenya
Wakoli (2019)	Relationship between financial resources mobilization and internal efficiency of public technical training institutions in Bungoma county, Kenya.	Qualitative and quantitative data. Primary data was collected through questionnaires and interviews.		The study was done in public TTI's and did not focus on influence of financial resource mobilization on financial sustainability of Universities.	This study will focus on the influence of financial resource mobilization strategies on financial sustainability of Universities in Kenya.

2.8 Summary of Literature review

The resource mobilization theory of Oberschall (1973), Markowitz's modern portfolio theory (1952), Pfeffer and Salancik's resource dependency theory (1970), Galbraith's (1969) intellectual capital theory are the four theories that have been the focus of this chapter. Since the firm's financial revenue tactics are the main subject of this study, the resource mobilization theory is crucial.

In spite of these theories, the conceptual framework has also been offered in this chapter. Three variables led the investigation, according to the conceptual framework: the independent, dependent, and moderating variables. Financial resource mobilization tactics on financial sustainability were one of the study's independent variables.

In particular, the research concentrated on five distinct independent variables. Business units, financial management practices, endowment fund mobilization, and investments in technology-enhanced education. The moderating variable of the study is intellectual capital, and the dependent variable is financial sustainability. The direction of the interactions is shown using arrows and the relationship between the variables in the conceptual framework serve to highlight how each one of these variables interacts with the others.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the procedures used to examine how financial resource mobilization strategies business units, financial management practices, endowment fund mobilization, and investment in technology-enhanced learning influence the financial sustainability of Kenyan universities, and how intellectual capital moderates these relationships. Guided by a post-positivist (positivist) worldview, the study adopted a quantitative, hypothesis-testing approach consistent with the objectives and hypotheses stated earlier. The chapter details the research philosophy and design, target population and sampling procedures, data sources and instruments like primary questionnaires for senior university officers and secondary financial records including the data collection procedures employed. It further outlines the measurement of variables, procedures for establishing validity and reliability, and the statistical techniques used descriptive statistics, binary logistic regression for hypothesis testing, and associated diagnostic tests like normality, multicollinearity, model fit. Finally, the chapter presents the ethical considerations observed throughout the study. Together, these methodological choices were intended to ensure objectivity, transparency, and replicability, thereby producing credible evidence on the drivers of financial sustainability in Kenyan universities.

3.2 Research philosophy

According to Adegboye (2019), research philosophy is the fundamental conviction or

comprehension which steers the entire research procedure, specifically concerning the selection of research methodology and the technique of analysis.

According to Yang et al. (2020), research philosophy is the theory behind how scientists gather, examine, and apply evidence to comprehend phenomena. The chosen philosophy determines the methodology to be followed in terms of data collection and data analysis methods, research design, data analysis techniques, and approach chosen for results and conclusion. Extensive study has come up with the different kinds of research philosophies like positivism. This concept is based on the notion that research issues can be objectively addressed in a specific study. and is one of the most often employed research philosophies (Geydar et al., 2020). Interpretivism is another often employed research philosophy. It is based on the idea that reality and knowledge are mutable and may be investigated through qualitative research (Eksteen, 2019).

This is also consistent with Rao's (2019) argument that a positivist research philosophy emphasizes testing hypotheses above all else and seeks to obtain facts and quality by breaking down phenomena into their most basic components. Similar to the natural sciences, positivist research philosophy seeks to portray facts objectively and quantitatively, particularly when attempting to demonstrate causal relationships. Given that the study largely used quantitative data and that developing and testing hypotheses was necessary to address the research issues, the application of positivism research philosophy was justified (Boussaguet & Faucher, 2020).

According to Maziriri et al. (2019), a research paradigm is a collection of presumptions that have philosophical orientation and beliefs guiding research. According to Rezaei

(2019), a research paradigm is the set of guiding principles and theoretical frameworks that support the advancement of a certain field of study.

The scientific direction of research served as the foundation for this investigation. As a result, positivist research philosophy which is concerned with obtaining ultimate knowledge about objective reality served as the foundation for this study.

3.3 Research Design

The approach and plan of study developed with an intention of giving research solutions is referred to as research design (Singh & Thirusangu, 2019). It is a strategy that outlines the steps for obtaining, assessing, and interpreting data in order to answer research questions, according to Rezigalla (2020). The research design has three perspectives. First, because the study's data was both quantitative and qualitative in character, a mixed research design was employed. According to Breed et al. (2020), quantitative research is any investigation or study that tests a theory utilizing variables that are quantified, measured, and statistically assessed. Consequently, a quantitative research design was integral to the study, particularly as the majority of the data used was quantitative.

Correlational research design resulted from the second viewpoint on the research design, which included the goals and research questions meant to provide the link. A correlational study strategy, according to Curtis et al. (2016), looks at more than two variables and gauges how strongly they are related. Correlational research design and methodology are defined by Mgbemena (2020) as those that are intended to uncover relationships between the variables under investigation.

Likewise, determining if a given set of variables has a predictive relationship with one another is the justification for using a correlational study design (Lato & Oliva, 2021). Another name for correlational research design is measurement-based research, which measures two or more qualities to ascertain the degree of relationship between the elements (Wongmuth, 2022). The length of the data gathering process is the next factor to take into account when describing the research plan. The study has a clearly defined start and end time and thus suggests that it complies with the specifications of a cross-sectional research design.

An observational study with several variables examined at a time is referred to as having a cross-sectional research design (Dikopoulou et al., 2020). For purposes of addressing the research issues of the research study, the current investigation will employ both quantitative and cross-sectional correlational research designs. Consequently, the research design for this study is appropriately named "mixed correlational cross-sectional research design," which is supported by the type of data that will be collected, the kind of the research questions, and the time allocated to data collection and analysis.

3.4 Target Population

A population is a set of people or study units about which a researcher wishes to draw conclusions (Maistry, 2019). This explanation is similar to that given by Aprianto (2020), who described the target population as a group of individuals or research units from whose data will be collected. The population describes the complete range of research units in

which the researcher is interested, in addition to the parameters dispersion descriptive, central tendency descriptive, or inferential measures that the researcher uses to quantify the phenomenon of interest from the population. The population of this study comprised of a sample of 64 private and public universities in

Kenya accredited by Commission for University Education (CUE) as at December 2022. These universities were chosen because of their varied backgrounds in financial resource mobilization. Financial sustainability metrics also show that they differ in terms of their level of financial sustainability.

3.5 Sampling Frame

A sampling frame in statistics is a group of sampling units from which a sample can be drawn (Birrell, 2020). It is the object or source that is used to extract a sample. In the survey population, the list of units is referred to as the "frame". A survey's framing is among its most crucial design elements since it directly affects sample choice. It chooses the technique of data collecting and establishes the extent to which a target group is covered. The sampling frame, according to Cooper and Schindler (2008), is a list of every person in the population who qualifies for sampling. This list may include people, households, or organizations.

Using the components specified by the sampling frame, a sample of the intended population can be selected. As per Angkurawaranon (2020), it is an inventory of all the individuals or objects that a researcher wants to examine. The list of every item in the population that will be the focus of a research study is known as a sample frame, according to Bagchi (2020). A sampling frame is therefore defined as a set of rules or a list that

describes the population.

The Commission of University Education's (CUE) list of universities as of December 31, 2022, served as the study's sampling frame. The Vice Chancellors of the sampled universities were the main respondents in the study, delegating tasks to the officials of finance and administration from each university because of their significance in managing the financial resources of those institutions.

In order to create a sample population that accurately reflects the total population, stratified sampling was used to choose a sample of 64 public and private universities for this study. The study made use of a deliberate sampling of the registrar administration and finance executives from the chosen universities. According to the goals of the research, the two university cadres are crucial in providing administrative and financial data.

3.6 Sampling technique and sample size

The study used the Commission for University Education's (CUE) December 31, 2022 register as the sampling frame and applied stratified sampling to ensure proportional representation of both sectors; the sample size was computed with Yamane's (1967) formula at 95% confidence from a population of 76 universities, yielding a final sample of 64 institutions; 34 public and 30 private drawn from the strata. Vice-Chancellors were the primary institutional contact points, with data provision delegated to senior officers in finance and administration. Purposive selection targeted key cadres (namely Finance Officers, Registrar Administration and HR/ICT/Resource Mobilization officers) to secure informed responses. In total, primary data were collected from senior university officers

using structured, self-administered questionnaires, complemented by secondary financial statements for 2018–2022.

In order to collect the right sample and prevent drawing an incorrect conclusion, the qualitative approach, on the one hand, entails taking into account the research objectives and assessing the sampling technique that is appropriate for the study and its correctness (Sharma, 2017). However, before employing a quantitative method to calculate the sample size, the quantitative procedure takes into account the statistical techniques to be used for data analysis (Yulianti, 2021).

The statistical formula devised by Yamane (1967) was used as follows:

$$n = N/1 + N(e)^2$$

Where n is the sample size from the population of the study, N is the population of 76 Universities under study and e is the sampling error at 95% confidence level which is 5% significance for this study. Therefore, the sample size will be

$$n = 76/1 + 76(0.05)^2 = 64 \text{ Universities}$$

3.7 Data collection instruments

According to Cooper and Schindler (2008), data collection is the process of gathering and evaluating information on particular study parameters in a planned and systematic way in order to analyze results and provide relevant solutions. Closed-ended questions from standardized questionnaires were used to gather primary data on financial resource mobilization. It was argued that the questionnaires were justified since they made it possible for data from 64 universities to be collected in the time frame required by the

study.

Secondary data from the financial statements were made available by the universities that made up the research population based on the sampling technique that was used to collect information on financial sustainability. Data collecting tools are important, as Kothari (2017) explains. The instrument used in the survey to gather unprocessed data on each of the independent variables was a semi-structured questionnaire.

Both qualitative and quantitative data which are categorized as ordinal and discrete data, respectively were gathered for this study. This information was gathered via a self-administered questionnaire with closed-ended questions. Using a questionnaire, in the opinion of Foddy (1993) and Oppenheim (1992), improves respondents' privacy and allows them to respond whenever it is most convenient for them. For these reasons, the questionnaire approach was selected. Foddy also came to the conclusion that surveys with a big sample size tend to yield more reliable data. The source of secondary data on financial sustainability was audited financial statements of public and private universities as advised by Nalwoga (2021) and Rwakihembo et al. (2020).

3.8 Data Collection Procedure

The steps taken to collect the pertinent data needed to address the research questions are known as data gathering. It entails gathering primary and secondary data through the use of research instruments (Kabir, 2016). Semi-structured questionnaires were used in the study to collect preliminary data.

There were multiple sections on the questionnaires, with Section A containing the general

information. Aside from financial sustainability, which is the final component, the following sections were included; income-generating units, finance management techniques, endowment fund mobilization, investments in technology-enhanced learning, and intellectual capital. The universities' Finance officers and Registrar administration, Human Resource Managers , ICT Managers and Resource Mobilization officers provided primary data.

The audited financial statements of the universities provided secondary data to the researcher. Data collection sheets were used throughout the study to collate secondary data. The justification of the study in using secondary data is that it supplements the information found in primary sources. In order to assess and quantify financial sustainability, the study's dependent variable, it is also critical to collect secondary data. Since the financial statements that serve as information sources are prepared at the conclusion of each fiscal year, information from secondary sources were gathered annually. The financial sustainability was evaluated over a five-year period, from 2018 to 2022 and an index of financial sustainability based on liquidity, profitability, asset and gearing ratios.

3.9 Pre-test

Prior to the main data collection exercise, a pre-test of the questionnaire was conducted using a sample of respondents drawn from 6 Universities who shared similar characteristics with the target population but were not included in the final study. The primary purpose of the pre-test was to assess the clarity, reliability, and validity of the questionnaire items and to identify any ambiguous, redundant, or confusing questions

(Mugenda & Mugenda, 2003). A pre-test also serves to evaluate the structure and flow of the questionnaire, the appropriateness of the response scales, and the time required to complete the instrument (Creswell & Creswell, 2018). This step was critical in ensuring that the instrument effectively captures the constructs under investigation, reducing the likelihood of measurement error and enhancing the quality of the data collected (Saunders et al., 2019). The feedback obtained from the respondents in the 6 Universities was used to refine and revise certain questionnaire items for better comprehension and consistency. Conducting a pre-test is considered good research practice, as it enhances the robustness of the instrument and improves the overall credibility of the study findings (Bryman, 2016).

3.9.1 Validity of the Research Instrument

A research instrument's validity is determined by the accuracy and importance of conclusions made from study findings (Heale & Twycross, 2015). The degree to which an instrument measures what it is supposed to measure is another way to determine its validity (Kaineder & Ronchi, 2019). According to Ibrahim and Ahmed (2019), a research instrument's validity is determined by whether or not it measures the desired ideas. The supervisors first confirmed the construct validity of the research instruments to make sure that the questions asked in the instrument have captured the fundamental ideas and constructions of financial sustainability and resource mobilization strategies.

In addition, six (6) respondents were chosen for pretesting were consulted regarding the stated questions in the instruments in order to ascertain the content validity, which is concerned with whether the measurement instrument's content accurately reflects

underlying structures. The third method the researcher employed was by asking the six (6) respondents to complete the questionnaire and provide recommendations for changes. The investigator went through the recommendations and made the required changes to the survey to ensure that the questions are straightforward and understandable.

3.9.2 Reliability of the research instrument

The extent to which a research instrument gives consistent data or conclusions after multiple tests under the same conditions is known as its reliability (Momani et al., 2019). Conversely, Garcia-Ramos and Janicijevic (2020) characterize research instrument dependability as the consistency of an output over multiple measurements. Furthermore, a measure of Cronbach's α can will be used to assess the dependability of the study tools, as has been well established (Nugroho, 2019).

According to studies, a Cronbach's $\alpha > 0.7$ criterion indicates that the research tool is dependable (Dai & Zhou, 2020). To ascertain how items, correlate with one another, STATA (14) was used to calculate the Cronbach's Coefficient Alpha. A common version of the Kuder-Richardson (K-R) 20 formulae for evaluation of an instrument's internal consistency is called Cronbach's Alpha. Typically, it is understood to be the average of all split-half coefficients that could exist.

Chapter Four has provided an overview of the reliability test results. The dependability of the instruments was assessed using Cronbach Alpha. According to Lee (2010), one should conclude that an instrument is dependable if the Cronbach coefficients are more than 0.7. The completed surveys from the field was input into Stata software for the purpose of

calculating the Cronbach Alpha coefficient values. The values of the Cronbach Alpha coefficients for every research parameters was then be calculated separately using the Stata program. Both the descriptive and inferential levels of the conclusions about secondary data has equally been addressed in Chapter Four.

3.10 Data analysis and Presentation

3.10.1 Descriptive Analysis

During the analysis, reports with descriptive statistics that reflect the different study items was created. Using five-point Likert scales, the resulting tables will provide means and percentages for each item in the questionnaire. A score of 1 represents the lowest possible score and a score of 5 is the greatest possible score on the scoring system. Additionally, especially for secondary data, the lowest and maximum values of the variables was noted. Additionally, variability was demonstrated using the standard deviation, or range difference between the highest and lowest values of the data.

Both skewness and kurtosis was used to examine the distribution of the variables. A dataset's skewness can be utilized to identify its asymmetry (Miloš & Bensa, 2019). Conversely, kurtosis will be employed to gauge how peaked or flat the distribution curve is (Zhou et al., 2019). Furthermore, kurtosis is employed to quantify the degree to which data cluster around a central point (Henok et al., 2020). Consequently, in order to analyze the variable distribution and ascertain whether the variables follow the "Bell shaped" curve, these two measurements was essential. The suitability of the variables in the regression models was supported by these measures and the Shapiro-Wilkes tests for

normality.

3.10.2 Inferential Analysis

Both primary and secondary data was subjected to an inferential analysis. Analyses of both basic and multiple Binary regression was performed on primary data. Fixed effects and pooled ordinary least squares regression models was applied to secondary data.

3.10.3 Binary Logistic Regression Analysis

When determining the nature of the link between study variables, the binary logistic regression model was utilized. In this model, scores were 1 if one strongly disagreed and a score of 5 one strongly agreed . In this investigation, the hypothesized empirical relationship can be illustrated as follows:

$$P(Y_i) = \frac{1}{1 + e - (b_0 + b_1X_{1i} + b_2X_{2i} + \dots b_kX_{ki})}$$

Where:

- $P(Y_i)$ is the projected odds that Y is true for case i
- e is a mathematical constant approximated as 2.72
- b_o is a constant estimate from the data
- $b_1, b_2, \dots, b_k$ is a b-coefficient estimated from the predictor 1, 2, 3, ..., k .
- $X_{1i}, X_{2i}, \dots, X_{ki}$ is the observed score on predictors $X_i, X_2, \dots, X_k$ for case i

The Equation was used to model both the direct effect and the moderated effect.

Moderation process (steps 1 to 3)

The moderation process followed 3 three steps:

Step 1: Main Effects Model

$$\text{Logit}(P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Where:

logit(p): The log-odds of the outcome, or the natural logarithm of the odds of the event occurring.

p: The probability of the event occurring.

β_0 : The intercept (constant term).

$\beta_1, \beta_2, \dots, \beta_k$: The regression coefficients associated with the independent variables ($X_1, X_2, \dots, X_k$).

$X_1, X_2, \dots, X_k$: The independent variables or predictors.

Step 2: Add Moderator (Firm Size Main Effect)

$$\text{Logit}(P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_i Z_j$$

Where:

$P(Y=1)$ is the probability of the binary outcome Y being 1.

logit is the log-odds transformation.

β_0 is the intercept.

$\beta_1, \beta_2, \beta_3, \beta_4$ is the regression coefficients for the independent variables X_1, X_2, X_3, X_4 respectively.

$\beta_i Z_j$ is the moderator as an independent Variable.

Step 3: Moderation Model (Interaction Terms Added)

$$\text{Logit}(P) = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_i Z_j + B_{ij} Z_j \dots$$

Where:

B_iZ_j are the interaction terms of the moderator with X_1, X_2, X_3, X_4 and Z_j)

B_{ij} is the coefficient of the moderator as a predictor.

Z_j is the moderator dichotomized (human capital, customer capital , relational capital, Structural capital)

The equation incorporates an interaction term between the independent variable and the moderator. This interaction term captures how the effect of the independent variable on the outcome changes depending on the level of the moderator.

3.11 Diagnostic Tests

Using the Binary Logistic regression model, hypotheses regarding the link between the research's selected variables were tested. The model's premises was be handled carefully when carrying out these chores. Inappropriate handling of the assumption typically leads to undesirable estimates that give a detrimental effect on the research

findings (Ali & Isak, 2019). To avoid this kind of scenario, diagnostic tests were run in order to fix the abnormalities in the model. The test's actual purpose was to determine how accurate the regression equation is in determining whether the study data is appropriate. The research conducted tests for linearity and the model predictions for drawing deductions and conclusions was ensured by these tests.

3.11.1 Measuring direct effect.

To measure the direct effect in the model specified in equation 2, all the four independent variables were input into SPSS version 26 and regressed against the dependent variable.

The steps were as follows: Computing the variables using the compute function with the Likert scaled items corresponding to each variable condensed into the binary responses to yield the respective variables, inputting the data into binary logistic regression model, specifying the reference categories and generating the output.

The output from the logistic regression relevant in this study included Cox & Snell R-Square, Nagelkerke R-Square, 2loglikelihood statistics and Odds ratios

3.11.2 Moderated effect

To determine the moderated effect of Intellectual Capital, the binary logistic regression model was run with all the independent variables plus the moderator. Financial sustainability was taken as dependent variable while Intellectual Capital was taken as the moderator. The variations in the - 2loglikelihood statistics and the odds ratios was used to gauge which model was parsimonious. The steps were:

- i. Computing the variables using the compute function. The Likert scaled items corresponding to each variable were condensed into the binary responses to yield the respective variables.
- ii. Inputting the data into binary logistic regression model.
- iii. Specifying the reference categories
- iv. Generating the output

The output from the logistic regression relevant in this study included Cox & Snell R-Square, Nagelkerke R-Square, -2loglikelihood statistics and Odds ratios.

3.11.3 Tests of Normality

Data must be regularly distributed for the regression model to be applied (Nguyen & Hoang, 2019). Using Shapiro-Wilks test, it was possible to establish normality in the data. In order to determine if the data originates from a normal distribution, Godina and Matias (2018) stress the significance of using the Shapiro-Wilks test. According to Umar et al. (2019), the Shapiro-Wilks test (SW test) is a more effective method of identifying abnormalities in data than the Kolmogorov-Smirnov test (KS test). As a result, to determine whether the data were normal, the Shapiro-Wilks test was run and the p-value was examined. A p-value of less than 0.05 often means that the alternative, which claims normal distribution of data, is accepted while null hypothesis, which claims that there is no normality, is rejected.

3.11.4 Linearity Tests

According to Nguyen and Hoang (2019), Q-Q plots are for to assessing multivariate linearity. In order to apply multiple linear regression, multivariate data must be linear and have little, departures from the line of best fit. The estimation of the line of best fit is based on this linearity. In the latter case, the data would need made linear before the regression model could be estimated, and a new form of model might be needed. Nguyen et al. (2019) state that a minimum sample size of 20 units is required for each variable in order for the model to be employed, hence the technique is sufficient. This study had 64 sampled universities which adequately meets the criterion.

3.11.5 Test of Multi-collinearity

One of the most important tests is the multicollinearity test, particularly when several linear regression models are being used. Multicollinearity is defined by James et al. (2019) as the state in which a regression model's predictors have a high degree of correlation with one another. Internal inter-variable impacts induce bias in the predicted parameters as a result. Additionally, James et al. (2019) note that variance inflation factors (VIF) can be used to verify multicollinearity.

Multicollinearity, according to Wen et al. (2018), is the state in which the explanatory variables of a linear regression model have a high degree of correlation, which eventually could lead to skewed model estimations. This is supported by Xia et al. (2019), who point out that multicollinearity occurs when there is linear connection between the regression model's independent variables. Variance inflation variables were then used in the current investigation to determine whether multicollinearity existed in the multiple regression model.

3.11.6 Heteroscedasticity

Terms with a constant standard deviation in model regression are referred to as homoscedastic disturbances. We refer to them as heteroscedastic if they are not. A condition in which the variance of regression model residuals varies is called heteroscedasticity, according to Belkania and Karimov (2018). Using what are known as Breusch-Pagan tests to identify the evidence of heteroscedasticity in a regression model is crucial, according to Muhammad et al. (2019), who concluded an empirical investigation on Pakistani banks. The tests to determine the presence of heteroscedasticity

in the regression model utilized were carried out by Nguyen et al. (2019) following the completion of an empirical study regarding inflation in Vietnam.

Similarly, homoscedasticity requires that the error term have constant variance is another premise of multivariate analysis. The Levine test for homogeneity was used in the study to determine heteroscedasticity and ensure that the idea was adhered to. According to Ali and Isak (2019), there is no homoscedasticity and the study should not be able to reject the null hypothesis if the computed p-values for every variable in the Levine test are more than 0.05.

3.11.7 Model Suitability Test

Binary logistic regression is the best fit for the study because the study's outcome financial sustainability status is binary, and the model directly estimates the probability of "sustainable" vs "not sustainable" from a mix of categorical and continuous predictors while using the logit link to capture non-linear effects. It yields policy-friendly odds ratios for each strategy (business units, finance practices, endowment mobilization, TEL) and seamlessly accommodates moderation by intellectual capital through interaction terms in the logit, all of which match the thesis design. In addition, standard BLR diagnostics and fit statistics (e.g., $-2 \log$ -likelihood, Wald tests, Cox & Snell and Nagelkerke R^2) used in the thesis provide rigorous checks of model adequacy and interpretability, consistent with prior methodological guidance that emphasizes careful assumption handling and diagnostic testing for reliable estimates (Ali & Isak, 2019).

3.11.8 Sampling Adequacy

Sampling adequacy is typically conducted in quantitative research. The utilization of factor analysis on the study data is supported by this diagnostic test (Glen, 2016). The sample adequacy test was conducted on the independent and moderating variables to guarantee that the data gathered was sufficient for factor analysis. For the factor analysis to be conducted, the test has a threshold of 0.8.

3.11.9 Connection Coefficient

In research, evaluating the degree of correlation between diagnostic tests is crucial. Examining agreement between quantitative diagnostic test findings is based on Pearson correlation. The ICC and other statistical measures can be used to assess the degree of agreement between diagnostic tests once the correlation between the research variables has established how firm the interdependence is (Morgan & Aban, 2016). The bivariate correlation was used in this study to achieve this goal.

3.11.10 Likert Scale

Depending on the purpose of the study, the researcher can use any of the many measuring scales created for research when conducting a survey. The investigator must think carefully about what to measure and how to measure it in order to get reliable results when making this decision. Rensis Likert, an American social psychologist, developed the most widely used response scale in the early 1930s in response to difficulties assessing many types of data with a single scale (Chen & Liu, 2021; Chyung et al., 2018). There are unipolar and bipolar formats for the scale. Because the bipolar is symmetrical, the scale may accommodate both agreement and disagreement responses from questionnaires that are structured. Additionally, the scale is

superior for measuring continuous, nominal, and categorical data. The Likert scale has been effective in a variety of ways for academics (Chen & Liu, 2021; Jamieson, 2004; Wu & Leung, 2017). For example, Hassad (2010) used continuous data from Boise State University to measure components in his study on health and behavioral sciences.

Hutchinson (2021) investigated how to create the best answers from interval data by utilizing the scale. Cruz (2015) also used ordinal data to measure components in the study on the relationship between product quality and customer happiness, utilizing the Rensis Likert scale. However, the scale was employed in this work to measure ordinal data.

3.12 Ethical Considerations

The research adhered to the ethical norms established by the university to regulate research endeavors. The National Council of Science, Technology, and Innovation (NACOSTI), a government organization in charge of granting research authorization, received a notification from the university to start the procedure. The researcher at the universities approached the Vice Chancellors for authorization. The purpose of this academic work was explained to the respondents, and their involvement was sought. The researcher also submitted an application with all supporting materials attached, along with a request for approval from the Kenya Methodist University Ethics Committee.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the study's results and findings. Furthermore, the study sample's general features, descriptive analysis results, and results and findings for the bivariate and multivariate (binary logistics regression variable) dependent and independent variables were thoroughly explored. Model findings and opinions of their strength were written. Furthermore, the study findings were thoroughly documented as indicated in the research methodology.

4.2 Response Rate

The researcher distributed questionnaires to 290 respondents, and 215 of them were returned, yielding a 74.14% return rate, which was partially attributed to half-finished, not returned, and blank questionnaires. The high response rate suggests strong engagement from respondents, enhancing the reliability of the study. Wimmer and Dominick (2012) recommend a rate of return of 21-70% as satisfactory, providing assurance of correctness, reducing bias, and appropriate for self-administered surveys, hence 74.1% is acceptable in this study.

4.3 Reliability Analysis

The degree to which a research instrument produces consistent outcomes or data after multiple trials is known as its reliability (Mugenda & Mugenda, 2018). Random errors have an impact on the reliability of research. Inaccurate coding, unclear instructions or

questions for the subjects, interviewers' or interviewees' weariness, interviewer prejudice etc. can all lead to mistakes, according to Zikmund (2010). The reliability of questionnaires and the internal consistency of data items were tested using Cronbach's alpha in reliability analysis. As suggested by Kipkebut (2010), data dependability was assessed using the Cronbach's alpha coefficient, which has a range of 0 to 1.

Table 4.1

Reliability of Research Instruments

Variables	Cronbach's Alpha	Total Items
Business Units	0.930	6
Finance management practices	0.945	6
Endowment funds mobilization	0.934	6
Investment in technology enhanced learning	0.936	6
Intellectual capital	0.946	6
Financial sustainability	0.940	6

Source: Survey Data (2024)

4.4 Demographic Information

Demographic traits are significant because they include the study habits of the respondents, which support their appropriateness for the type of research being conducted. With intellectual capital acting as the moderating factor, these attributes such as gender, educational attainment, and the length of time the university has been in operation are crucial for determining the experience and degree of knowledge required for evaluating the impact of financial resource mobilization strategies on the financial sustainability of Kenyan universities.

4.4.1 Gender of the Respondents

A person's gender can affect how they behave or view a phenomenon, which in turn can affect how they value and perceive the effects of financial resource mobilization tactics

on the long-term viability of Kenyan colleges. Consequently, it is essential to look at the gender of the responses. The following were their answers:

Table 4.2

Gender of the Respondents

Gender	Frequency	Percent
Male	88	40.9%
Female	127	59.1%
Total	215	100.0%

Source: Research Data (2024)

The findings indicate the respondents' gender distribution: 88 responders (40.9%) were men. 127 responders, or 59.1%, were female. Of the 215 responders, 40.9% are men and the majority (59.1%) are women. This suggests that there are more women in the sample. An individual's gender can affect how they behave or view a phenomenon, which in turn can affect their values and views of how financial resource mobilization strategies affect Kenyan universities' long-term sustainability.

4.4.2 University Age bracket

Since older universities may have more established alumni networks, fundraising networks, and financial stability than newer ones, their age plays a critical role in determining how financial resource mobilization strategies affect Kenyan colleges' long-term viability. More strategic long-term planning is possible for older universities since they frequently have a history of resource management. Younger universities, on the other hand, may still be creating these systems and have a harder time finding steady funding. Assessing how financial strategies affect sustainability, growth, and adaptation in Kenyan

universities over time is made easier by being aware of age-related variances.

Table 4.3

Age Bracket of the University

Age Bracket	Frequency	Percent
Less than 5 years	32	14.9
Between 6 to 10 years	102	47.4
Over 11 years	81	37.7
Total	215	100.0

Source: Research Data, (2024)

These findings show how universities are distributed according to how long they have been in business. The data can be interpreted as follows: In fewer than five years, 14.9% of the universities have been in operation. This implies that the sample contains a lower percentage of more recent universities. Nearly half of the universities in the sample are relatively established but not yet very old, with 47.4% of them having been in operation for 6–10 years, the largest group. A substantial portion of the institutions have a great deal of expertise and history in the education sector, as seen by the fact that 37.7% of them have been in operation for more than 11 years. Nearly half of the universities have been in existence for 6–10 years, and a sizable fraction have been in operation for more than 11 years, making the majority of them fairly well-established. Newer colleges still make up a smaller portion of the sample, though. Depending on how long they have been in existence, Kenyan universities have different levels of financial sustainability. Less than five-year-old universities have difficulty obtaining steady funding and must rely on outside donations and government assistance. Universities that have been in business for six to ten years concentrate on diversifying their sources of income through collaborations and research grants. Universities that have been in operation for more than 11 years profit

from a variety of revenue streams, including grants from the government, gifts from alumni, and partnerships abroad. Universities must modify their financial policies, such as diversifying, to maintain long-term viability.

4.5 Frequency Analysis of Study Variables

In this section, results of the frequency analysis of the study variables as well as discussions of the findings have been done. Likert scale questions that were formulated based on objectives of the study were interpreted. Presentation of frequencies and descriptive statistics results and findings were also done in tables. It is important to note that descriptive analysis only included the mode because the data is not continuous and it is categorical in nature. For interpretation purpose, the 5-point Likert scale was interpreted at 3 levels; where: 1 - Disagree, 2 - Neutral, 3 – Agree while mode from the same Likert scale was interpreted at 5 levels where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

4.5.1 Business Units

In an era marked by dwindling government funding and rising operational costs, universities in Kenya have increasingly turned to internal business units as alternative sources of revenue to enhance financial sustainability. The following findings present an analysis of respondents' views on the extent to which business units contribute to university revenue, highlighting their perceived role in promoting financial sustainability.

Table 4.4*Business units*

Statements	Disagree	Neutral	Agree	Mode
Research and consultancy gives the institution reasonable Revenues	14.4% (31)	10.7% (23)	74.8% (161)	4
The University has entered into corporate alliances which has monetary value	65.5% (136)	16.3% (22)	18.1% (57)	2
Professional Dev Centers or short courses generate sufficient revenues for the University	26.1% (57)	10.2% (22)	62.7% (136)	4
University uses Intellectual Property and patents to generate income	52.5% (128)	15.8% (34)	31.6% (68)	2
General Production units e.g., farming give university reasonable revenues	20.9% (45)	16.7% (36)	62.3% (208)	4
Asset driven revenues e.g., rentals and hire form part of the revenue bases of the University	24.1% (42)	14.4% (31)	61.4.7% (132)	4
N=215				

Source: Research Data (2024)

The findings indicate respondents' views on the extent to which research and consultancy activities generate significant revenue for the university. 14.4% of respondents disagreed that research and consultancy activities generate a substantial amount of revenue for the university, while a significant majority, comprising 74.8%, concurred that these activities serve as an important source of funding for the institution. The findings indicated that 10.7% of respondents may lack awareness or certainty regarding the financial contributions of research and consultancy. The mode of 4 signifies that the predominant response from participants was "Agree." This indicates that, of all the response options, a greater number of individuals selected "Agree" compared to the other options. The majority of respondents indicate that research and consultancy yield substantial revenues for the university.

A study Kimathi and Irungu (2024) agrees with the descriptive analysis of the significant

revenue generated by research and consultancy activities in universities . The research assessed the effect of revenue diversification on the financial sustainability of Kenyan public universities. The study found that revenue diversification, including income from research and consultancy, had a positive significant effect on financial sustainability when measured using the sustainability ratio. This concurs that such activities are crucial in enhancing the financial health of these institutions.

On corporate alliances established by the university, 65.5% of respondents disagreed that these alliances provide monetary contributions to the institution, whereas only 18.1% agreed that such alliances serve as a significant funding source for the university. The findings indicate that 16.3% of respondents may lack awareness or certainty regarding the financial implications or existence of these corporate partnerships. The mode of 2 signifies that the predominant response from participants was "Disagree." This indicates that, of all response options, the "Disagree" choice was selected by a greater number of individuals than any alternative. The data indicates that most respondents do not perceive corporate alliances as producing significant revenue for the university at present.

A study by Mtonga and Banja (2020), titled "Exploring the Benefits and Challenges of Strategic Alliances in Zambia's Higher Education Markets" examined strategic alliances among three universities in Zambia agrees with majority of respondents. The study found that while such alliances offer benefits, there are significant challenges, including a lack of commitment and awareness among stakeholders, which can impede the realization of financial gains. These findings suggest that the respondents do not perceive these alliances as substantial sources of revenue, which is in concurrence with

the results of the study where a majority of respondents did not view corporate alliances as generating significant financial value for the universities.

Regarding professional development centers and short courses to the university, 26.1% of respondents expressed disagreement regarding the sufficiency of revenues generated by these centers and courses, whereas a majority of 62.7% concurred that these initiatives serve as a significant funding source for the institution. The findings indicate that 10.2% of respondents may lack awareness or certainty regarding the financial contributions of professional development programs. The mode of 4 signifies that the predominant response from participants was "Agree." This indicates that, among all response options, a greater number of individuals selected "Agree" compared to others. This suggests that most respondents typically perceive professional development centers and short courses as generating adequate revenue for the university.

UPCEA and MindEdge Learning (2024) supports the notion that professional development centers and short courses significantly contribute to university revenues. In the study titled "Doing More With Less: Strategies for Revenue Growth and Efficiency in universities", 84% of respondents prioritized expanding program offerings, such as short courses and microcredentials, as key strategies for revenue growth over the next 3–5 years. This aligns with the majority of respondents perceive professional development and short courses initiatives as substantial funding sources for universities.

Regarding the university's utilization of intellectual property (IP) and patents as a revenue stream, 52.5% of the respondents expressed disagreement regarding the notion that intellectual property and patents serve as a means to generate income for the university,

whereas merely 31.6% concurred that these are a notable source of revenue. The findings clearly indicated that 15.8% of the respondents might be uncertain or uninformed about the university's initiatives or capacity to commercialize intellectual property. The mode of 2 signifies that the response most commonly given by participants was "Disagree." This indicates that, of all the response options, a greater number of individuals selected "Disagree" compared to the others. This suggests that most respondents feel the university does not make effective use of intellectual property and patents to generate financial resources.

The observation by majority of the respondents concurs with a study by Omerzel (2021) which explored the commercialization of intellectual property in universities. The study found that many universities face challenges in effectively leveraging IP and patents for revenue generation due to limited institutional support, lack of awareness among faculty and staff, and inadequate commercialization strategies. This aligns with the reported perception that universities are not making effective use of IP and patents as a financial resource. The findings of the study highlighted a general lack of confidence in universities' ability to commercialize intellectual property effectively.

As to whether general production activities like farming generate a fair amount of income for the institution, 20.9% of the respondents disagreed that these activities produce fair earnings. 62.3% of them felt such production units are quite important source of money for the university. The results clearly showed that 16.7% of the respondents could be ignorant or unknowing about the financial donations made by general production units as farming. A mode of 4 suggests that "Agree" was the most common response among

participants. This indicates that among all the response alternatives, more people chose “Agree” than any other. This suggests that most of the respondents usually think that other general production units and farms offer fair income for the institution.

A study by Mujuru and Obi (2020) concurs with majority of the respondents. The study examined the impact of cultivated area on smallholder farm profits and food security in South Africa and found that increasing the cultivated area positively influenced farm profits and food security, indicating that agricultural activities can serve as significant income sources and therefore this supports the notion that farming and similar production units can be vital revenue streams for institutions, as reflected in the majority of respondents in this analysis who agreed on the importance of such activities.

On whether asset-driven enterprises like equipment rentals and property rentals add to the income of the university, 61.4% of the respondents felt these assets were a significant source of money for the university while 24.1% disputed that they produced income. The results clearly showed that 14.4% of the respondents could be ignorant or unsure of the financial donations made by asset-based projects. A mode of four suggests that "Agree" was the most common response among participants. This indicates that among all the response choices, more individuals selected "Agree" than any other. This suggests that most of those questioned think rentals, leases, and other asset-driven streams are part of the income foundation of the university.

A study by Ghazali et al. (2023) that aligns to the majority of the respondents on the role of asset-driven enterprises in university income generation. This research examined land asset monetization strategies across 12 universities, revealing that all had

implemented commercial rentals for student use, such as restaurants and stationery shops, as a means to generate steady income. Additionally, 33% of these universities utilized their facilities for guest accommodations, and 16% ventured into luxury student residences, indicating a strategic approach to leveraging university assets for financial sustainability.

4.5.2 Finance Management practices

Sound financial management is a cornerstone of institutional sustainability in higher education, particularly amid funding volatility and rising operational demands. Effective cash flow management ensures that universities maintain sufficient liquidity to meet recurring obligations, support service delivery, and respond to unforeseen financial pressures. The findings presented below capture respondents' perceptions regarding the adequacy and consistency of cash flow management within their institutions, offering valuable insights into a critical dimension of financial sustainability.

Table 4.5*Financial management practices*

Statements		Neutral	Agree	Mode
The university effectively manages its cash flow to ensure liquidity and smooth operation.	66% (142)	14.9% (32)	19.1% (41)	2
The university has an effective budgetary control system that ensures financial discipline and accountability.	24.2% (52)	15.3% (33)	60.5% (130)	4
The university's financial reports are accurate, timely, and align with standard accounting practices.	18.2% (39)	18.6% (40)	63.2% (136)	4
Financial audits are conducted regularly, ensuring transparency and accountability in the university's finances.	26.1% (55)	15.8% (34)	58.1% (126)	4
The university has well-managed investment practices that contribute to long-term financial growth and stability.	15.4% (18)	17.2% (37)	67.4% (160)	5
The university has a robust financial risk management system that helps mitigate financial instability.	60.1% (129)	17.2% (37)	22.7% (49)	2
N=215				

4.5.2.1 The university effectively manages its cash flow to ensure liquidity and smooth operation.

Regarding managing cash flow to ensure liquidity and operational continuity, 66% percent of respondents expressed disagreement with the statement, suggesting a significant view of insufficient or inconsistent cash flow management. Conversely, merely 19.1% concurred that the university proficiently handles its cash flow. The data indicated that 14.9% of the respondents may be uncertain or uninformed on the university's management of its liquidity and everyday financial operations. The mode of 2 signifies that the respondents who “disagreed” was predominant.

A study by Burton and Miroga (2024) aligns the predominant response regarding the challenges universities face in managing cash flow to ensure liquidity and operational

continuity. Their research, focusing on public universities in Kenya, identified persistent liquidity issues and budget deficits as significant concerns. The study found that effective accounts receivable and payable management practices are crucial for enhancing financial performance and ensuring sustainability. Additionally, a study by Minyoso and Musiega (2020) supports the findings concerning the challenges public universities in Kenya face in managing cash flow to ensure liquidity and operational continuity. Their research found that working capital management is positively correlated with financial sustainability. The study recommended that more emphasis be put on working capital management to ensure enhanced cash flows, as it affects the sustainability of public universities in Kenya.

On the effectiveness of the university's budgetary control mechanism, 24.1% of respondents opposed the assertion. However, a majority of 60.5% concurred that the budgetary control system promotes financial discipline and accountability. The data indicated that 15.3% of the respondents may be uncertain or uninformed about the budgeting processes inside the institution. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that the majority of respondents typically perceive that the university possesses mechanisms to manage its budget efficiently and maintain financial discipline.

A study by Kariuki et al. (2022) supports the majority of respondents' observation regarding the effectiveness of budgetary control mechanisms in promoting financial discipline and accountability within universities. Their research, focusing on public universities in Kenya, found that budgetary controls and revenue mobilization have a significant positive effect on the financial sustainability of these institutions. The study

recommended aligning budgets within available funding and tightening expenditure controls to enhance budgetary control effectiveness.

Regarding the quality and dependability of the university's financial reporting, only 18.1% of respondents expressed disagreement with the assertion. But a predominant 63.2% concurred that the financial reports are accurate, timely, and adhere to accounting standards. The data indicated that 18.6% of the respondents may be uncertain or uninformed on the university's financial reporting processes. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that most respondents typically perceive the university's financial reports as reliable and well prepared.

A study by Mbugua (2023) concurs with majority of respondents regarding the quality and dependability of financial reporting in public universities. This research found that adherence to Public Sector Accounting Standards (PSAS) significantly enhances the accuracy, timeliness, and compliance of financial reports in Kenyan public universities. The study concluded that strong financial reporting practices are instrumental in promoting transparency, accountability, and stakeholder confidence within these institutions.

On the regularity of financial audits and their contribution to financial transparency, 25.6% of respondents opposed the notion that audits are conducted regularly and ensure accountability, whilst a majority of 58.1% concurred that audits occur and foster transparency. The data indicated that 15.8% of the respondents may be uncertain or uninformed regarding the university's audit methods. The mode of 4 signifies that the

predominant reaction from participants was "Agree." This indicates that the majority of respondents perceive frequent financial audits as conducted and significant in fostering accountability.

A study by Chokaa et al. (2023) supports majority of respondents regarding the regularity of financial audits and their contribution to financial transparency in public universities. Their research found that a robust institutional framework positively influences financial corporate compliance, which includes regular auditing practices that enhance accountability and transparency. The study recommended that the government implement thorough accountability measures to ensure that every officer in public universities is held responsible for financial activities, thereby promoting transparency.

Regarding the university's investment management and its effect on financial stability, 15.3% of respondents expressed disagreement with the statement. However, a substantial majority of 67.4% concurred that the university's investments are well managed and promote long-term financial sustainability. The data indicated that 17.2% of the respondents may be uncertain or uninformed on the university's investment management. The mode of 5 signifies that the predominant response from participants was "Strongly Agree." The majority of respondents expressed significant support for the statement, indicating a high level of confidence in the university's investment policies as a factor in financial growth and stability.

A study by Chumba et al. (2025) concurs with majority of the respondents regarding the positive impact of effective investment management on the financial stability of

universities. Their research examined the effect of financial investment strategies on the financial sustainability of universities in Kenya, focusing on investment strategies. The study found that investments significantly contribute to the long-term financial sustainability of these institutions. The study concludes that embracing various investment strategies for resource mobilization is crucial for boosting the financial sustainability of universities in Kenya.

On the university's efficacy in managing financial risks, 60% of the respondents expressed disagreement with the statement, suggesting a widespread conviction that the university's financial risk management structure is inadequate. Merely 22.7% concurred that the system is resilient and efficient in risk mitigation. The findings indicated that 17.2% of the respondents may be uncertain or uninformed regarding the identification and management of financial risks within the institution. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that most respondents lack confidence in the university's financial risk management system to guarantee stability.

A study by Minyoso (2020) supports predominant observation regarding the inadequacy of financial risk management structures in universities. The research found that financial risk management accounted for 11.18% of the variation in financial sustainability among public universities in Kenya. However, the influence was not statistically significant ($p = 0.600$), indicating that existing risk management practices did not substantially impact the financial stability of these institutions. The study concluded that there is statistical evidence that management of financial risk significantly explains

the financial sustainability of public universities in Kenya. The study recommended that sound structures for management of financial risks and cost-cutting measures be put in place to enhance financial sustainability.

4.5.3 Endowment Funds Mobilization

Endowment funds provide long-term financial security by generating steady income from invested capital, while fundraising campaigns can support both recurrent and capital needs. The findings that follow highlight respondents' perceptions of their universities' participation in fundraising operations, shedding light on the perceived effectiveness and visibility of these initiatives in addressing financial challenges.

Table 4.6

Endowment Funds Mobilization

Statements	Disagree	Neutral	Agree	Mode
The University has Fund raising mobilization activities on place	13.5% (29)	15.8% (34)	70.7% (152)	4
Charitable donations form part of the income of the University	68.3% (147)	15.8% (34)	15.9% (34)	2
The University has Philanthropy support for its projects	73.9% (159)	11.2% (24)	14.9% (32)	2
Scholarship funds mobilizations net revenues significant	15.4% (33)	13.0% (28)	71.6% (154)	4
Alumni Fund Mobilization is done for the University	14.9% (32)	15.8% (34)	69.3% (149)	4
Endowment funds policy is in place and guides the resource mobilization.	15.9% (34)	11.6% (25)	72.5% (156)	4
N=215				

On the university's involvement in fundraising mobilization operations, 13.5% of respondents expressed disagreement with the assertion while a predominant 70.7% concurred that such activities exist and facilitate financial resource mobilization. The data indicated that 15.8% of the respondents may be uncertain or uninformed about these

fundraising initiatives within the university. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that, among all the response options, a greater number of individuals selected "Agree" compared to the others. This indicates that most respondents typically perceive the university as actively participating in organized fundraising efforts to address its financial requirements.

A study by Kamala (2022) supports predominant reaction from participants regarding the active involvement of universities in fundraising mobilization operations. This research examined the critical success factors for implementing resource mobilization strategies in private universities in Kenya. The findings revealed that both internal factors (such as organizational culture, innovation, and leadership) and external factors (like trust and customer loyalty) significantly influence the successful implementation of fundraising strategies. Respondents generally agreed that their institutions actively engage in organized fundraising efforts to address financial requirements. The study concluded that effective management of these critical success factors is essential for the successful implementation of resource mobilization strategies in private universities in Kenya.

Regarding the impact of charity donations on the university's revenue, 68.3% of respondents opposed the assertion, whereas merely 15.9% concurred that charitable gifts provide a dependable source of income. The data indicated that 15.8% of the respondents may be uncertain or uninformed about the significance of charity donations in the university's financial framework. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that a greater number of individuals selected "Disagree" compared to any alternative option. This indicates that most

respondents do not perceive charitable donations as a substantial contributor to the university's earnings.

A study by Kimathi and Irungu (2024) supports the predominant reaction regarding the limited impact of charitable donations on the financial sustainability of public universities in Kenya. Their research found that while revenue diversification is essential, reliance on external sources such as donor grants and charitable donations does not significantly enhance financial sustainability. The study concluded that public universities should explore innovative alternative sources of revenue and close revenue-generating units whose marginal costs are higher than marginal revenues, indicating that charitable donations are not a substantial contributor to the universities' earnings.

Regarding the university's acquisition of philanthropic backing for its initiatives, 73.9% of respondents expressed disagreement with the proposition, reflecting significant skepticism regarding the existence of philanthropy. Merely 14.9% concurred that such assistance is available. The data indicated that 11.2% of the respondents may be uncertain or uninformed about the Philanthropy contributions accessible to the university. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that the majority of respondents do not perceive the institution as benefiting from philanthropy money for its projects.

A study by Kamala (2022) supports the predominant reaction on the limited perception of philanthropic support as a significant resource mobilization strategy in Kenyan universities. The research, focusing on private universities in Kenya, found that while institutions recognize the importance of resource mobilization, philanthropic

contributions are not perceived as a substantial or reliable source of funding. The study emphasizes the need for universities to diversify their resource mobilization strategies beyond philanthropy to ensure financial sustainability.

On the extent to which mobilizing scholarship funds produces substantial revenue for the university only 15.4% of respondents expressed disagreement with the assertion. However, a substantial majority of 71.6% concurred that scholarship funding initiatives generate significant money. The data indicated that 13.0% of the respondents may be uncertain or uninformed regarding the financial implications of scholarship fund mobilization. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that most respondents believe that the mobilization of scholarship funds substantially enhances the university's revenue.

A study by Kariuki et al. (2022) the predominant perception from the participants regarding the significant role of scholarship fund mobilization in enhancing university revenue. Their research assessed the effects of revenue mobilization and budgetary controls on the financial sustainability of public universities in Kenya. The study found that revenue mobilization strategies, including scholarship funding initiatives, have a significant positive effect on the financial sustainability of public universities.

On the university's ability to secure funding from its alumni, 14.9% of respondents expressed disagreement with the statement, but 69.3% concurred that alumni fundraising constitutes a component of the university's financial strategy. The data indicated that 15.8% of the respondents may be uncertain or uninformed on alumni participation in financial contributions. The mode of 4 signifies that the predominant reaction from

participants was "Agree." This indicates that most respondents believe the university actively engages in alumni fundraising.

A study by Odero (2020) supports the active engagement of universities in alumni fundraising and resource mobilization strategies. The research examined how strategic leadership affects the performance of university alumni associations in Kenya. Findings revealed that the adoption of strategic leadership practices, such as setting clear goals and promoting teamwork, significantly enhances the performance of alumni associations leading to improved alumni engagement, including fundraising activities that contribute to the universities' financial strategies. The study concluded that strategic financial leadership is crucial in promoting the efficiency and effectiveness of university alumni associations in Kenya.

4.5.3.1 Endowment funds policy is in place and guides the resource mobilization

Regarding the existence of a formal policy regarding endowment money that directs the university's resource mobilization efforts, 15.9% of respondents expressed disagreement with the assertion, but a predominant 72.5% concurred that the policy is both existent and operational. The data indicated that 11.6% of the respondents may be uncertain or uninformed about the existence or purpose of this policy. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that the majority of respondents perceive the university as having a definite endowment policy that guides the fundraising and management of money.

A study by Kamala (2022) supports the existence and operationalization of formal policies guiding endowment funds in Kenyan private universities. The research examined

critical success factors for implementing resource mobilization strategies in private universities in Kenya. The study also highlighted that respondents generally agreed on the presence of structured policies and frameworks that guide fundraising and resource mobilization efforts within their institutions. This agrees with the predominant perception that universities have definite endowment policies directing their fundraising and financial management activities.

However, a study by Wanjala et al. (2024) does not concur the predominant reaction from the participants regarding the existence and operationalization of formal endowment fund policies in Kenyan public universities. Their research found that public universities in Kenya predominantly rely on government capitation for their operations and lack established endowment funds. This absence of endowment funds has led to challenges such as budget deficits, inability to allocate funds for research, and delays in remitting statutory deductions. The study recommends that universities diversify their revenue streams and establish endowment funds to enhance financial sustainability.

4.5.4 Investment in Technology Enhanced Learning

The integration of technology into higher education has become a strategic imperative for universities seeking to enhance academic delivery, expand access, and remain competitive in a rapidly evolving digital landscape. In Kenya, the adoption of technology-enhanced learning platforms, particularly Learning Management Systems (LMS), has gained prominence as institutions respond to shifting pedagogical needs, student expectations, and disruptions such as the COVID-19 pandemic. The findings that follow present

respondents' views on the extent to which universities have invested in modern LMS platforms, reflecting the perceived depth and visibility of technological advancement in academic service delivery.

Table 4.7

Investment in Technology Enhanced Learning

Statements	Disagree	Neutral	Agree	Mode
The institution has invested in a modern learning Management system(LMS)	11.7% (25)	15.8% (34)	72.6% (156)	5
The University has increased investment in ICT infrastructure that supports online learning	13.0% (28)	10.7% (23)	76.3% (164)	4
The University has continuously invested more in bandwidth expansion and reliable power sources	13.0% (28)	16.7% (36)	70.3% (151)	4
The University has continuously invested in learner empowerment tools	18.6% (40)	14.9% (32)	66.5% (143)	5
The University has sought accreditation for online learning.	69.8% (150)	16.7% (36)	19.8% (29)	2
The University has an approved internal online teaching policies/framework	67.0% (144)	15.3% (33)	17.7% (38)	2
N=215				

Regarding the institution's investment in a contemporary learning management system to facilitate technology-enhanced education, 11.7% of respondents expressed disagreement with the assertion. However, a substantial 72.6% concurred that such an investment has occurred. The data indicated that 15.8% of the respondents may be uncertain or uninformed regarding the existence or quality of the LMS in operation. The mode of 5 signifies that the predominant response from participants was "Strongly Agree." This indicates that the majority of respondents firmly feel that the university has invested in a contemporary Learning Management System to facilitate academic delivery and digital learning activities.

A study by Agallo (2023) on the investment in contemporary Learning Management

Systems (LMS) to facilitate technology-enhanced learning in Kenyan institutions concurs with the predominant response. The research focused on the determinants of adoption of e-learning management systems among students in Technical and Vocational Education and Training (TVET) institutions in Nairobi County. The study found that while there is a positive attitude towards the adoption of LMS, challenges such as user competence and barriers significantly affect its adoption. Despite these challenges, the presence of LMS platforms in these institutions indicates an investment in technology-enhanced learning.

A study by Boniface Wakholi (2023) also supports the predominant response regarding the investment in contemporary Learning Management Systems (LMS) to facilitate technology-enhanced learning in Kenyan universities. The research, conducted at Kibabii University, found that 81.5% of students indicated that technology-enabled learning is an effective mode of learning. The study highlights that the implementation of technology-enabled learning has transformed teaching and learning by introducing student-centered environments and enabling independent learning through electronic resources.

On whether the institution has augmented its investment in ICT infrastructure to facilitate online learning, 13% of the respondents expressed disagreement with the assertion. However, a substantial 76.3% concurred that the institution has enhanced its ICT skills. The data indicated that 10.7% of the respondents may be uncertain or uninformed about these infrastructural upgrades. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that most respondents feel the institution has allocated extra resources to enhance ICT infrastructure for online learning.

Kosgei et al. (2023) examined the availability of infrastructure to support digital learning in public universities in Uasin Gishu County, Kenya and revealed that infrastructure has a positive and significant influence on digital learning in public universities during the post-COVID-19 era, indicating that investments in ICT infrastructure have facilitated online learning. However, the study also noted challenges such as poor network access in some areas and a shortage of skilled personnel, which hindered the full implementation of digital learning.

Regarding the university's consistent investment in enhancing internet bandwidth and securing a reliable power supply for educational purposes, 13% of respondents expressed disagreement, whereas 70.3% concurred that such investments have been undertaken. The data indicated that 16.7% of the respondents may be uncertain or uninformed on the university's investment in bandwidth and power support technologies. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that most respondents believe the university has prioritized enhancing bandwidth and energy reliability within its digital learning plan.

Arante (2024), which investigated the adequacy and functionality of ICT infrastructure for online learning at Caraga State University Cabadbaran Campus (CSUCC) in the Philippines. The study found that faculty members perceived the university's ICT infrastructure, including internet connectivity and power supply, as generally adequate and functional for online learning. Specifically, the study reported mean scores indicating that communication tools and resilience measures like alternative electricity supplies were mostly adequate, supporting the notion that the university has prioritized enhancing

bandwidth and energy reliability within its digital learning plan. These findings concur with majority of respondents, where 70.3% of respondents agreed that investments in internet bandwidth and reliable power supply have been undertaken by the university.

On the university's consistent investment in resources that enhance learning, including e-learning platforms, digital libraries, and interactive tools, 18.6% of respondents expressed disagreement with the statement, whereas 66.5% concurred that such attempts have been undertaken. The data indicated that 14.9% of the respondents may be uncertain or uninformed about these learner support technologies or their application. The mode of 5 signifies that the predominant response from participants was "Strongly Agree." This indicates that a significant proportion of respondents firmly feel that the university is actively investing in digital tools that directly support and enhance the student learning experience.

Ogunbodede et al. (2022), concurs with the predominant response by investigating students' perceptions and use of digital resources at the University of Africa, Bayelsa State, Nigeria. The study found that a significant proportion of students acknowledged the university's investment in digital learning tools, including e-learning platforms and digital libraries. This reflects a broader trend in universities enhancing digital infrastructure to support learning.

On the university's efforts to obtain formal accreditation for its online learning programs, 69.8% of respondents expressed disagreement, suggesting distrust or insufficient awareness of accrediting initiatives. Merely 19.8% concurred with the assertion. The data indicated that 16.7% of the respondents may lack certainty regarding the accreditation

status of the university's online learning programs. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that most respondents do not believe the university has pursued or obtained formal accreditation for its online educational programs.

Almahasees et al. (2021) investigated faculty and students' perceptions of online learning during the COVID-19 pandemic. The study found that students expressed concerns over the quality and effectiveness of online education, including issues related to assessment methods and communication with instructors. These findings suggest a lack of trust or awareness regarding the formal accreditation and quality assurance of online learning programs and is in concurrence with observation by majority of the respondents in this study.

Regarding the existence of an officially sanctioned policy or framework for directing online instruction at the university, 67% of the respondents expressed disagreement, indicating that the majority are either uninformed of the policy or perceive it as nonexistent. Merely 17.7% concurred that the university possesses such a structure. The data indicated that 15.3% of respondents may be uncertain or uninformed about existing internal online teaching policies. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that the majority of respondents do not perceive the university as having a formal organizational policy or structure governing online teaching methods.

A study by Owidi et al. (2023) aligns with majority of respondents observation regarding the perceived absence or unawareness of formal online teaching policies in Kenyan

universities .Their research at Masinde Muliro University of Science and Technology (MMUST) revealed that both students and lecturers experienced challenges due to inadequate online pedagogical infrastructure and a lack of clear policy guidelines for online learning. The study emphasized the necessity for universities to develop and implement comprehensive policies to enhance the effectiveness of online education. This study therefore corroborates the findings herein ,highlighting the critical need for well-defined online teaching policies to support effective online instruction in Kenyan universities.

4.5.5 Intellectual capital

In the knowledge-driven economy, intellectual capital comprising the skills, experience, expertise, and creativity of employees has emerged as a critical asset for enhancing institutional performance and long-term sustainability. Human capital, as a core component of intellectual capital, influences the institution's ability to adapt to change, drive research, and deliver quality education. The findings presented below reflect respondents' perceptions of their universities' effectiveness in managing and deploying intellectual capital to fulfill strategic objectives.

Table 4.8*Intellectual capital*

Statements	Disagree	Neutral	Agree	Mode
The university effectively develops and utilizes the skills, knowledge, and expertise of its staff to achieve its goals.	19.1% (41)	14.4% (31)	63.5% (143)	4
The university has strong relationships with students, alumni, and other key stakeholders, contributing to its success.	19.1% (41)	12.1% (26)	68.9% (148)	4
The university has established valuable partnerships with external organizations, government bodies, and the community.	20.5% (44)	11.2% (24)	68.4% (147)	5
The university has robust systems, processes, and organizational structures that support its operations and long-term growth.	17.3% (37)	14.4% (31)	68.4% (147)	4
Customer loyalty has been attained through customer service delivery process	70.2% (151)	7.9% (17)	21.8% (47)	2
Customer capital is treated like a critical asset	69.3% (149)	13.5% (29)	17.2% (37)	2

N=215

The findings indicate respondents' views on the university's efficacy in utilizing the abilities and experience of its workers to achieve institutional objectives. 19.1% of respondents expressed disagreement with the assertion, however a substantial 63.5% concurred that the institution efficiently leverages its intellectual wealth. The data indicated that 14.4% of respondents may be uncertain or uninformed regarding the university's support and utilization of personnel knowledge. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that most respondents believe the university effectively manages and utilizes staff knowledge and experience to achieve strategic objectives.

Gachanja et al. (2024) concurs with predominant reaction from the respondents regarding the effective utilization of staff knowledge and experience in achieving institutional

objectives. Their research examined the relationship between knowledge sharing capability and competitiveness in chartered public universities in Kenya. The findings revealed that knowledge sharing significantly influenced the competitiveness of these institutions, suggesting that universities effectively leverage their intellectual capital to enhance performance. This supports the observation that a majority of respondents believe their university efficiently manages and utilizes staff knowledge and experience to achieve strategic goals. This study underscores the importance of knowledge sharing practices in enhancing institutional performance of the Universities.

Regarding the university's relationships with stakeholders including students and alumni, 19.1% of respondents expressed disagreement, whilst 68.9% concurred that these linkages are robust and positively impact the institution's success. The data indicated that 12.1% of the respondents may be uncertain or uninformed regarding the university's stakeholder engagement strategies. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that the majority of respondents perceive the university as fostering significant and constructive partnerships with its principal stakeholders.

Mbithe et al. (2024) examined the role of stakeholder engagement in enhancing corporate social responsibility (CSR) in private universities in Kenya. The study found that meaningful engagement with stakeholders, including students and alumni, positively influences the universities' CSR initiatives and overall institutional success. This supports the predominant observation that a majority of respondents perceive the university as fostering significant and constructive partnerships with its principal

stakeholders. This study underscores the importance of robust stakeholder relationships in contributing to the success and effectiveness of universities.

On the university's establishment of beneficial and effective collaborations with other organizations, 20.5% of respondents expressed disagreement with the assertion. However, a substantial 68.4% affirmed the existence of such relationships. The data indicated that 11.2% of the respondents may be uncertain or uninformed regarding the scope or nature of the university's external collaborations. The mode of 5 signifies that the predominant response from participants was "Strongly Agree." This indicates that a considerable proportion of respondents firmly believe the university has established valuable external partnerships that enhance its growth and performance.

Kombo and Mwangi (2023) concurs with the predominant observation regarding the establishment of beneficial and effective collaborations by universities. Their research investigated the strategies employed by Kenyan universities to enhance partnerships and collaborations. Their findings indicated that over 55% of respondents acknowledged a moderate to substantial existence of partnerships within their institutions, reflecting a positive perception of external collaborations. This supports the perception that a considerable proportion of respondents firmly believe the university has established valuable external partnerships that enhance its growth and performance. This study underscores the significance of strategic partnerships in enhancing the performance and sustainability of universities in Kenya.

Regarding the robustness and efficacy of the university's internal systems in facilitating growth, 17.3% of respondents expressed disagreement, whilst 68.4% concurred that

mechanisms and processes exist to ensure the sustainability of long-term operations. The data indicated that 14.4% of the respondents might be uncertain or uninformed about these institutional structures or their efficacy. The mode of 4 signifies that the predominant reaction from participants was "Agree." The majority of respondents assert that the university possesses robust processes and organizational structures to facilitate its mission and strategic vision.

Otiende et al. (2024) examined the influence of organizational resources—specifically human, financial, and physical assets—on the performance of public universities in Kenya. The findings revealed a statistically significant positive relationship between organizational resources and university performance ($\beta = 0.504$; $t = 5.936$; $p < 0.05$), indicating that effective resource management and robust organizational structures contribute substantially to institutional success. This supports the observation that a majority of respondents believe their university possesses strong processes and structures that facilitate its mission and strategic vision. This study underscores the importance of well-established organizational systems and resource management in enhancing the long-term growth and operational sustainability.

On whether the university's service delivery has fostered customer (e.g., student or stakeholder) loyalty, a significant majority 70.2% of respondents expressed disagreement with the statement, indicating unhappiness with service delivery or skepticism over its effect on loyalty. Merely 21.8% concurred that loyalty has been established through the quality of service. The data indicated that 7.9% of the respondents may be uncertain or uninformed regarding the impact of service performance on stakeholder loyalty. The

mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that the majority of respondents do not perceive that customer loyalty has been effectively attained using existing service delivery methods.

Nteere (2021) examined the influence of service quality on customer satisfaction among students at The Co-operative University of Kenya. The findings revealed that while certain service quality dimensions significantly affected customer satisfaction, others like reliability and responsiveness did not show a significant impact. This suggests that existing service delivery methods may not effectively foster customer loyalty, thus concurring with the observation that a significant majority of respondents expressed dissatisfaction with service delivery. This study underscores the importance of enhancing specific service quality dimensions to improve customer satisfaction and, consequently, loyalty within universities.

On whether the institution regards its customer base (students, stakeholders, partners) as a vital resource, 69.3% of respondents opposed the statement, indicating that customer relationships might not be seen as a strategic advantage. Merely 17.2% concurred that client capital is regarded and administered as a crucial institutional asset. The data indicated that 13.5% of the respondents may be uncertain or uninformed on the university's valuation of its customer relationships. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that most respondents perceive the university as inadequately prioritizing client connections and loyalty as essential strategic assets.

Kuria et al. (2021) research on "Influence of Customer Service Strategies on Organizational Performance Among Private Universities in Kenya" found that while customer acquisition, service delivery, and customer retention positively affected organizational performance, customer recovery had an insignificant effect. The study recommended that private universities should invest in customer feedback to ensure customer retention and improve customer recovery strategies. These findings suggest that some universities may not fully recognize or strategically manage their customer relationships, aligning with the observation that a significant portion of respondents perceive the university as inadequately prioritizing customer relationships as a strategic asset.

4.5.6 Financial Sustainability

Financial sustainability is a fundamental requirement for the effective functioning and long-term viability of universities. One of its core indicators is an institution's ability to meet short-term financial obligations through adequate liquidity management. In Kenya, universities have faced mounting fiscal pressures due to reduced government funding, delayed capitation, rising wage bills, and growing operational costs. Assessing stakeholder perceptions of liquidity provides a practical lens for evaluating the current financial health of universities. The following findings present insights into how respondents perceive their institutions' capacity to maintain sufficient liquidity, highlighting critical concerns about short-term financial stability.

Table 4.9*Financial Sustainability*

Statements	Disagree	Neutral	Agree	Mode
The university has sufficient liquidity to meet its short-term financial obligations without difficulties	66.5% (143)	13.0% (28)	20.5% (44)	2
The university effectively manages its debt, ensuring a sustainable level of borrowing to finance its operations.	16.8% (36)	11.6% (25)	71.6% (154)	4
The university efficiently utilizes its assets to generate revenue and improve financial performance	17.2% (37)	12.1% (26)	70.6% (152)	5
The university's financial performance ratios indicate strong profitability and overall financial health.	68.4% (147)	12.1% (26)	19.5% (42)	2
The university maintains adequate reserves to cover unforeseen financial challenges and ensure long-term stability	14.9% (32)	13.5% (29)	71.6% (154)	5
The university has diverse revenue streams such as tuition fees, government funding, research grants, donations, and investment income.	16.3% (35)	14.4% (31)	69.3% (149)	4

N=215

The results indicate respondents' perceptions of the university's capacity to fulfill short-term financial obligations. A notable 66.5% of respondents opposed the remark, suggesting a prevalent perception that the university may face liquidity challenges. Merely 20.5% concurred that the organization have sufficient liquidity to fulfill its obligations. The data indicated that 13.0% of the respondents may be uncertain or uninformed regarding the university's liquidity status. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This indicates that most respondents do not perceive the university as sufficiently financially liquid to adequately fulfill its short-term responsibilities.

A study by Minyoso (2020) aligns with the predominant reaction indicating concerns about the liquidity of public universities. Minyoso's research, titled "Determinants of

Financial Sustainability of Public Universities in Kenya," highlights liquidity management as a critical factor influencing financial sustainability. The study found that inadequate liquidity management practices negatively impact the universities' ability to meet short-term obligations, reflecting stakeholders' perceptions of financial instability.

On the university's debt management strategies, 16.8% of respondents expressed disagreement. However, a substantial 71.6% concurred that the university upholds a sustainable debt level to finance its activities. The findings indicated that 11.6% of the respondents may be uncertain or uninformed regarding the institution's borrowing practices or debt levels. The mode of 4 signifies that the predominant reaction from participants was "Agree." This indicates that most respondents perceive the university as managing its debt judiciously, ensuring financial sustainability via responsible borrowing practices.

The descriptive analysis indicating that 71.6% of respondents perceive the university as maintaining a sustainable debt level is contradicted by recent empirical studies and reports highlighting significant debt challenges faced by Kenyan public universities. For instance, a study by Mose et al. (2024) titled *An Empirical Analysis of Public Debt Sustainability in Kenya* reveals that Kenya faces a high risk of debt distress, with public debt levels escalating due to persistent fiscal deficits and economic shocks. This environment affects public institutions, including universities, which are experiencing increasing debt burdens.

A study by Gichoni and Njoroge (2023) presents a contrasting perspective to the descriptive analysis provided. Their research, titled *"Effects of Debt Management Practices on Service Delivery among Public Universities in Kenya: A Case Study of*

Egerton University," indicates that despite efforts to manage debt, public universities in Kenya face significant challenges. The study highlights that massive debts, resulting from capitation shortfalls, have jeopardized service delivery in these institutions. To address these financial strains, universities have resorted to measures such as asset liquidation and the closure or merger of satellite campuses. These strategies, while aimed at debt management, have implications for the quality and accessibility of education services. This finding contrasts with the perception that universities are managing their debt judiciously to ensure financial sustainability.

On the university's asset utilization, 17.2% of respondents expressed disagreement with the statement, whilst 70.6% concurred that the university effectively utilizes its assets to improve revenue and financial success. The data indicated that 12.1% of the respondents may be uncertain or uninformed regarding the role of assets in income generating. The mode of 5 signifies that the predominant response from participants was "Strongly Agree." This indicates that numerous respondents firmly feel the university is optimizing its resources to enhance its financial results.

A study by Chumba et al. (2025) supports this descriptive analysis indicating that 70.6% of respondents believe the university effectively utilizes its assets to enhance revenue and financial success. Their research found that Kenyan universities have invested in various income-generating ventures, such as real estate and consultancy services, which contribute to financial sustainability. For instance, investments in real estate had a high mean score ($M = 4.69$), indicating strong agreement among respondents about their effectiveness in revenue generation.

Regarding whether the university's financial measures demonstrate sound health and profitability, 19.5% of respondents expressed agreement with the statement, whilst 68.4% disagreed that the institution's financial statistics demonstrate robust performance. The data indicated that 12.1% of the respondents may be uncertain or uninformed on the university's financial ratio performance or overall condition. The mode of 2 signifies that the predominant reaction from participants was "Disagree." This may indicate a disparity between views of profitability and official financial disclosures, suggesting that a considerable number of respondents harbor doubts over the university's financial robustness.

A study by Kithinji et al. (2023) aligns with this descriptive analysis indicating concerns about the financial health and profitability of public universities in Kenya. Their research, titled Cash Management and Financial Performance of Public Universities in Kenya, found that many universities reported deficits in their income statements, leading to a financial crisis that could potentially halt operations. The study emphasizes that proper cash management is essential for organizational survival, and the inability to identify relevant cash management practices contributes to poor financial performance. This finding supports the perception that a significant number of respondents harbor doubts over the university's financial robustness.

On the university's capacity to mitigate risks via financial reserves, 14.9% of respondents expressed disagreement, whereas a substantial 71.6% concurred that the university preserves reserves to ensure long-term sustainability. The data indicated that 13.5% of the respondents may be uncertain or uninformed about the presence or sufficiency of financial

reserves. The mode of 5 signifies that the predominant response from participants was "Strongly Agree." This indicates that numerous respondents are assured that the university possesses financial reserves to address future concerns.

A study that aligns with the descriptive analysis indicating strong confidence in a university's financial resilience through cash reserves is by Minyoso (2020), titled "Determinants of Financial Sustainability of Public Universities in Kenya." This research found that effective liquidity management and financial risk management significantly contribute to the financial sustainability of public universities. Specifically, the study concluded that financial risk management explains approximately 11.18% of the variance in sustainability outcomes, highlighting the importance of maintaining adequate cash reserves and implementing sound financial practices. These findings support the notion that respondents perceive robust financial reserves as essential for long-term institutional stability.

Regarding the diversification of the university's revenue, 16.3% of respondents expressed disagreement, whereas 69.3% concurred that the institution derives advantages from diverse funding streams. The data indicated that 14.4% of the respondents may be uncertain or uninformed regarding the diversity of revenue sources. The mode of 4 signifies that the predominant reaction from participants was "Agree." The majority of respondents assert that the university depends on several income sources, enhancing its financial stability and sustainability.

Kimathi and Irungu (2024) carried out a research titled "Revenue Diversification on Financial Sustainability of Public Universities in Kenya," and found that revenue

diversification had a positive significant effect on financial sustainability when measured using the sustainability ratio. This suggests that diversified income sources enhance the financial stability and sustainability of public universities in Kenya and concurs with the majority respondents observations.

4.6 Analysis of Secondary Data

This section presents a comprehensive analysis of secondary financial data extracted from selected Kenyan universities for the period 2018 to 2022. The objective of this analysis is to evaluate the financial sustainability of these institutions using five key financial ratios: Total Assets Turnover, Debt Ratio, Net Profit Ratio, Current Asset Ratio, and Debt to Equity Ratio. These ratios provide insight into the operational efficiency, liquidity, leverage, and overall financial health of the universities, which are critical indicators of long-term sustainability.

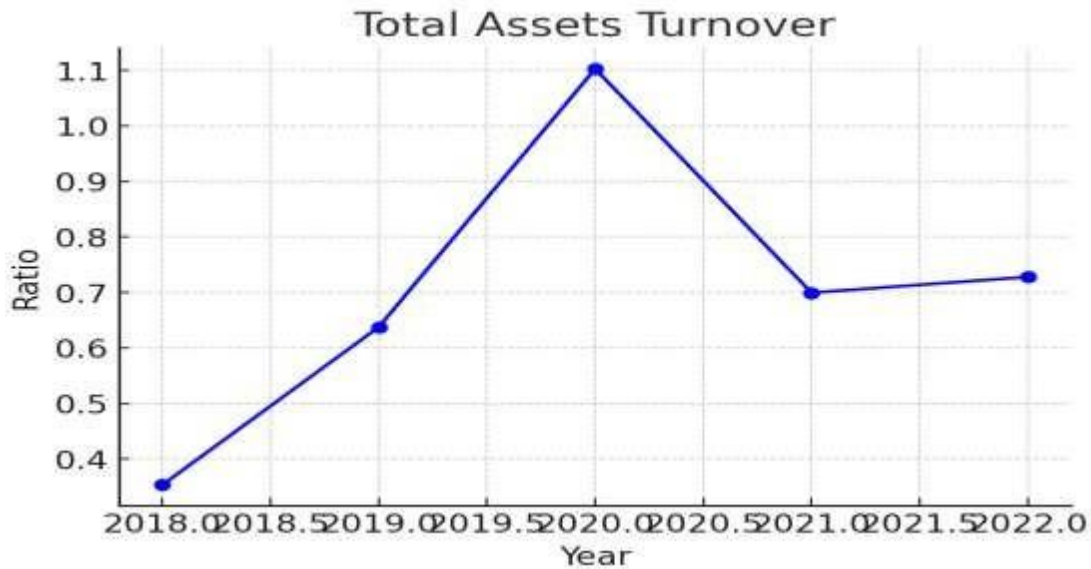
4.6.1 Total Assets Turnover Ratio

The Total Assets Turnover ratio, which gauges the efficiency of asset utilization in revenue generation, reveals mixed performance among Kenyan universities over the period 2018 to 2022. The upward trend from 0.3534 in 2018 to a peak of 1.1025 in 2020 suggests improved institutional efficiency, potentially due to enhanced student enrollment, optimized resource allocation, or cost containment measures. The subsequent drop in 2021 and marginal increase in 2022 may reflect challenges such as pandemic-induced disruptions or systemic inefficiencies (Nganga, 2021). Kinyanjui (2019) attributes such fluctuations to the presence of underutilized resources and the slow modernization of institutional infrastructure. Sustaining high turnover requires ongoing

investment in productive assets and strategic capacity utilization.

Figure 4.1

Total Assets Turnover

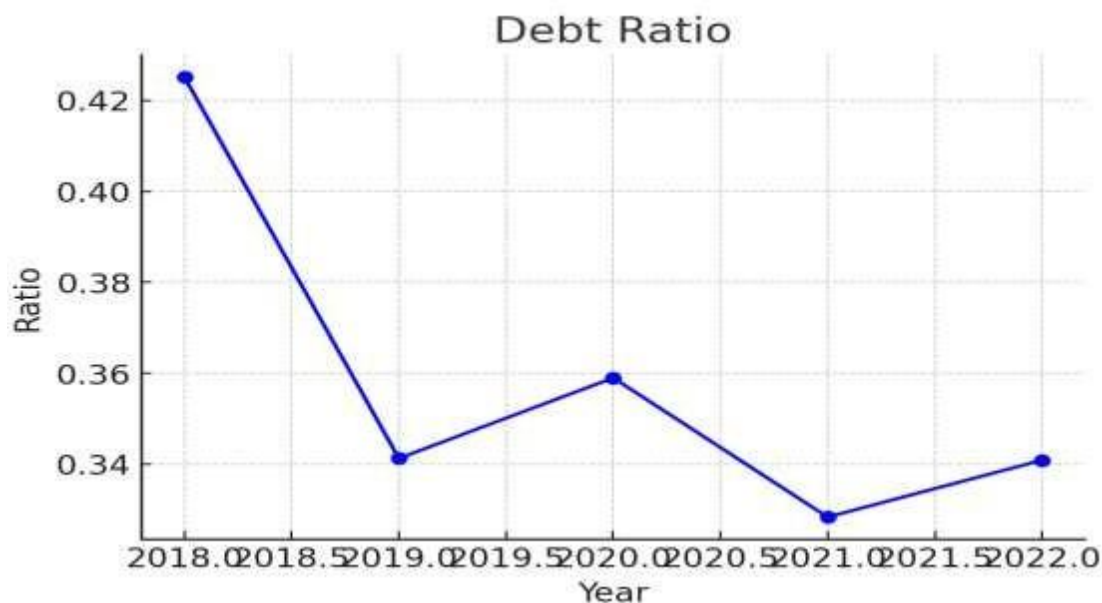


4.6.2 Debt Ratio

The Debt Ratio, representing the proportion of assets financed through debt, decreased from 0.4251 in 2018 to 0.3409 in 2022, reflecting a declining reliance on external borrowing. This trend suggests an increasingly conservative capital structure, possibly prompted by fiscal pressures and scrutiny from oversight bodies. The Auditor-General (2019–2022) reports show that mounting statutory debts have driven institutions to reduce new borrowing. Furthermore, the Commission for Higher Education (2020) confirms that universities face increasing difficulties in accessing affordable credit, compelling them to depend more on internally generated funds. While this enhances solvency, it could potentially constrain growth, especially in capital-intensive academic and research expansion projects.

Figure 4.2

Debt Ratio

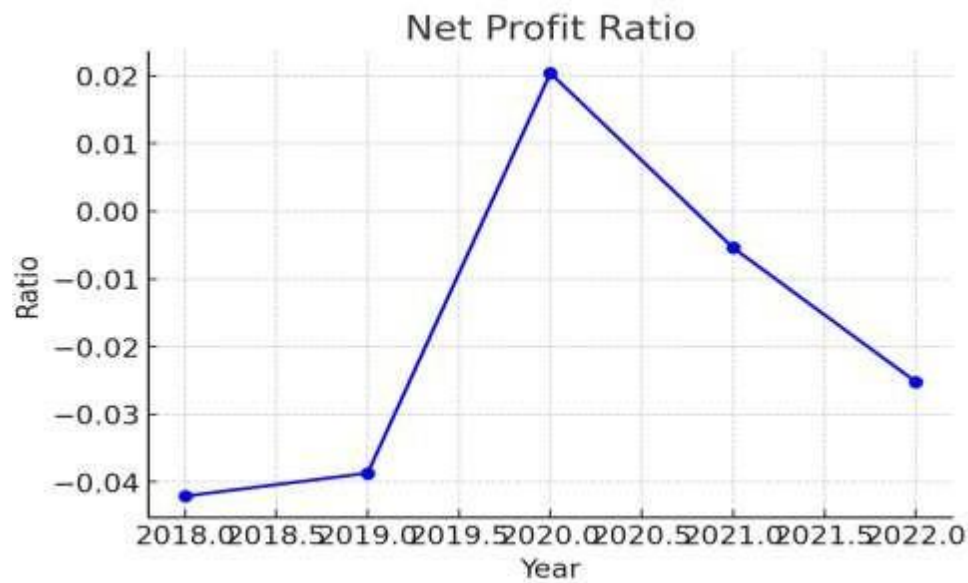


4.6.3 Net Profit Ratio

The Net Profit Ratio, indicative of overall financial viability, remained predominantly negative across the assessment period. Although 2020 saw a temporary positive margin (0.0204), the sustained deficits highlight structural revenue challenges. According to Mwirigi and Ng'ang'a (2020), public universities have been grappling with declining enrollments in self-sponsored programs and diminishing government capitation. Compounding this issue are escalating recurrent expenditures, particularly wage bills and statutory obligations. The Auditor-General's reports indicate a cumulative deficit across major public universities, exceeding KES 50 billion by 2021. These chronic deficits threaten the long-term viability of institutions and necessitate urgent fiscal reforms.

Figure 4.3

Net Profit Ratio



4.6.4 Current Asset Ratio

The Current Asset Ratio remained above 1.0 throughout the study period, increasing from 1.4231 in 2018 to 1.5026 in 2022. This positive liquidity position implies an ability to meet short-term obligations, which is crucial for operational continuity. Gikonyo et al. (2022) observe that universities have increasingly outsourced non-core services and streamlined operations to preserve working capital. However, the Universities Fund (2021) cautions that a high current ratio may obscure underlying issues such as delayed payments to suppliers or earmarked but unutilized grants. Thus, while liquidity is stable, universities must focus on optimizing the deployment of current assets.

Figure 4.4

Current Asset Ratio

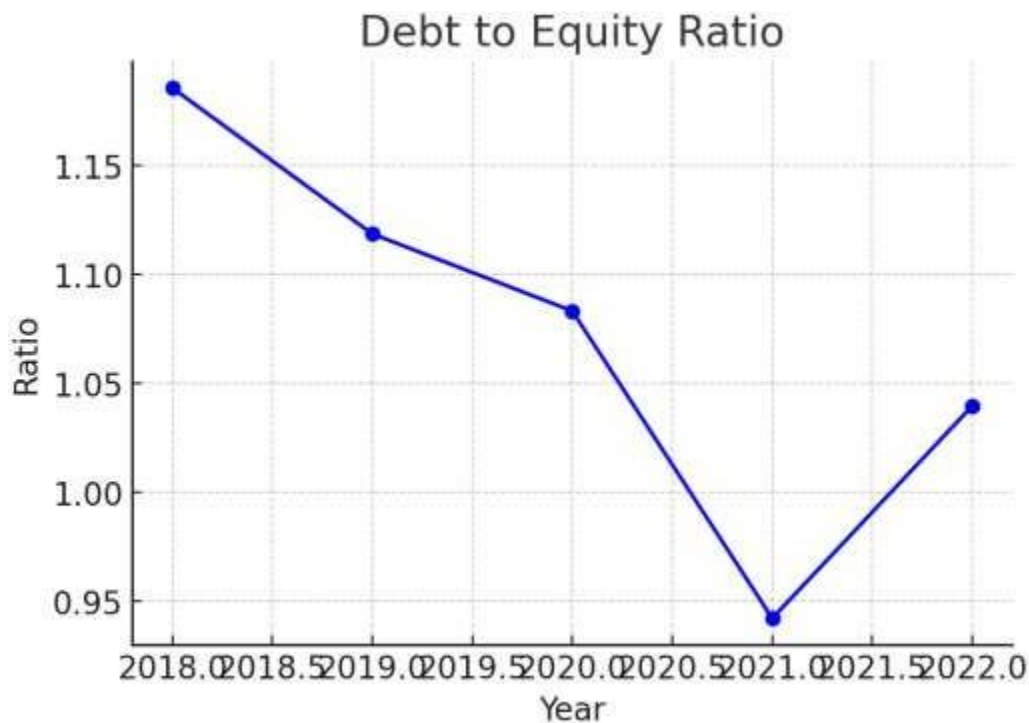


4.6.5 Debt to Equity Ratio

The Debt-to-Equity Ratio declined from 1.1857 in 2018 to 0.9422 in 2021 before slightly increasing to 1.0397 in 2022. These figures indicate a balanced financial leverage approach. Otieno and Njoroge (2021) report that universities have become more cautious in their borrowing patterns, particularly due to policy restrictions from the National Treasury and increasing creditor scrutiny. Data from the Kenya National Bureau of Statistics (2022) corroborates a general decline in education sector borrowing. While moderate debt levels reduce financial risk, universities must ensure that borrowed funds are aligned with strategic priorities to foster sustainable development.

Figure 4.5

Debt to Equity Ratio



4.6.6 Conclusion on secondary data analysis

The synthesis of the five key ratios presents a mixed picture of financial sustainability in Kenyan universities. Liquidity and solvency indicators such as the Current Asset Ratio and Debt to Equity Ratio reflect prudent financial management. However, operational and profitability metrics, notably the Net Profit Ratio and the volatility in Total Assets Turnover, highlight significant vulnerabilities. The findings suggest an urgent need for universities to diversify revenue sources, institutionalize financial discipline, and adopt performance-based funding models as recommended by the World Bank (2021).

Public and private universities share the same financial sustainability objective that is to generate reliable operating surpluses and not shareholder profit to cover costs, service

obligations, and reinvest in teaching, research, and infrastructure. Private and Public universities use the same ratio toolkit including operating margin or surplus, cost-to-income, staff-cost ratio, liquidity debt-to-assets, asset turnover, and revenue-diversification indices and interpret these against multi-year trends rather than single-year snapshots. Both face similar structural pressures like wage bills that are slow to adjust, large fixed costs for campuses and ICT, working-capital strain from fee/transfer timing, and exposure to enrollment shocks. In each, strong cash management like collections discipline, arrears control, cost efficiency, and diversified income streams like tuition/fees, research contracts, IGUs, philanthropy/endowments are the core levers for resilience. Finally, both private and public universities operate under public scrutiny and accrual-based reporting frameworks, so credible sustainability assessments must pair ratios with transparent notes on restricted funds, one-offs, and mission outcomes like access, quality, and graduation.

4.7 Analytical Model Diagnostic Tests

Before choosing an analytical model for the data, it is necessary that the acquired data meets the analytical model's assumptions. In this study, the data was analyzed to see if it met the assumptions of the classical linear regression model. In Linearity, normalcy, multicollinearity, and homoscedasticity assumptions were evaluated to help determine the most effective statistical procedures for analyzing the data and results presented.

4.7.1 Normality Test

Normality tests are used to determine whether the sample data was selected from a normally distributed dataset. Most statistical techniques or parametric tests, such as

correlation, regression, t tests, and analysis of variance, assume that data follows a normal distribution (Ghasemi & Zahediasl, 2012). The Kolmogorov-Smirnov (K-S) test, Lilliefors adjusted K-S test, and Shapiro-Wilk test are some of the tests used to measure normality. As a result the Shapiro-Wilk test were used to determine if the sample of data came from a normal distribution. In the Shapiro- Wilk Test, the null hypothesis is that the distribution is not normal, and the alternative hypothesis is that the distribution is normal. If the Shapiro-Wilk test's significance value is greater than 0.05, the data distribution is considered normal; if it is less than 0.05, the data is said to deviate from the normal distribution. Failure to pass the normality test permits the researcher to conclude with 95% confidence that the data does not fit a normal distribution. Passing the normality test merely permits the researcher to say that there was no substantial deviation from normality in the data distribution.

Table 4.10

Tests of Normality

	Kolmogorov-Smirnov^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Business Units	.219	215	.000	.889	215	.000
Financial Management	.221	215	.000	.883	215	.000
Endowment funds	.258	215	.000	.856	215	.000
Investment Technology	.239	215	.000	.874	215	.000
Intellectual Capital	.294	215	.000	.834	215	.000

The Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests were performed on all variables.

Both tests produced statistically significant results ($p = <0.05$). This indicates that the null hypothesis of normality was rejected, and the data on the variables was not normally distributed. In this regard, non-linear tests for instance chi-square and binary logistic regression were used instead of parametric tests such as ANOVA, linear regression, F-

Tests and T-Tests because data violated the classical linear regression assumptions. It is important to note that since the data has failed the normality test there is no need of doing other diagnostic tests.

4.8 Chi-Square Tests and Hypothesis Testing

The study hypothesis was tested using the chi-squared test of significance. Chi-square test analysis assesses the relationship between each independent variable and the dependent variable. The Chi-square statistical test assesses the relationship between two category variables. The lower the P-value, the more evidence that a statistically significant association exists between categorical variables; thus, the level of statistical significance is given as a P-value ranging from 0 to 1. The level of statistical significance is frequently stated as a P-value ranging from zero to one. The lower the p-value, the more evidence that there is a statistically significant association between categorical variables. A p-value less than or equal to the level of significance (0.05) suggests strong evidence of a statistically meaningful link between categorical variables.

4.8.1 Business Units have no statistically significant influence on the financial sustainability of Universities in Kenya.

Hypothesis one was tested by conducting Chi-square test analysis to establish the association between business units and financial sustainability. A significant association between variables exists when the p-value is less than or equal to 0.05, but there is no significant relationship between categorical variables when the p-value is greater than 0.05.

Table 4.11*Chi-Square Analysis for Business Units and Financial Sustainability*

	Asymptotic Significance (2-sided)	P-Value
Pearson Chi-Square	0.000	0.000
Likelihood Ratio	0.000	0.000
N of Valid Cases	215	

Chi-square analysis was used to determine the association between business units and financial sustainability. The study found a significant association between business units and financial sustainability at the 5% level ($P < 0.05$).

Table 4.12*Business units and financial sustainability cross tabulation*

			Financial sustainability3 Recoded		Total
			No financial sustainability	There is financial sustainability	
Business Units Recoded	There is no adequate business unit strategies used	Count	40	36	76
		% within BusinessUnits Recoded	52.6%	47.4%	100.0%
	There is adequate business unit strategies used	Count	19	120	139
		% within BusinessUnits Recoded	13.7%	86.3%	100.0%
Total	Count		59	156	215
	% within BusinessUnits Recoded		27.4%	72.6%	100.0%

The establishment of a business unit increases the likelihood that Kenyan universities will become financially sustainable. 52.6% of those without business unit practices felt there was no financial sustainability, while 47.4% believed there was, according to the cross-tabulation analysis's findings. On the other hand, 86.3% of respondents with business unit procedures said there is financial sustainability, compared to just 13.7% who said there is

none. Overall, 72.6% of respondents said there was financial sustainability, while 27.4% believed there was none. Consequently, establishing a business unit is closely linked to attaining financial sustainability, since a much greater percentage of those with a business unit report financial sustainability than those without.

4.8.2 Financial management practices have no statistically significant influence on financial sustainability of Universities in Kenya.

Table 4.13

Chi-Square analysis; financial management practices and financial sustainability

	Value	Asymptotic Significance (2-sided)	P-value
Pearson Chi-Square	45.795 ^a	.000	0.000
Likelihood Ratio	44.611	.000	0.000
N of Valid Cases	215		

Chi-square analysis was used to determine the association between financial management practices and financial sustainability in the Kenyan Universities. The study found a significant association between financial management practices and financial sustainability in the Kenyan Universities at the 5% level ($P < 0.05$).

Table 4.14*Financial management practices and financial sustainability cross tabulation*

			Financial sustainability3 Recoded		Total
			No financial sustainability	There is financial sustainability	
Financial Management3 Recoded	There is no adequate financial strategies used	Count	41	32	73
		% within FinancialManag ement3 Recoded	56.2%	43.8%	100.0%
	There is adequate financial strategies used	Count	18	124	142
		% within FinancialManag ement3 Recoded	12.7%	87.3%	100.0%
Total	Count		59	156	215
	% within FinancialManag ement3 Recoded		27.4%	72.6%	100.0%

The results from the cross-tabulation analysis show that, among those with no financial management, 56.2% felt there was no financial sustainability, while 43.8% felt there was financial sustainability. In contrast, among those with financial management, only 12.7% reported no financial sustainability, while 87.3% reported there is financial sustainability. In total, 27.4% of respondents felt there was no financial sustainability, and 72.6% felt there was financial sustainability. This suggests that having financial management systems in place is strongly linked to achieving financial sustainability, with a significantly higher proportion of those with financial management reporting financial sustainability compared to those without it.

4.8.3 Endowment funds Mobilization has no statistically significant influence on financial sustainability of Universities in Kenya.

Table 4.15

Chi-Square Analysis; Endowment Funds Mobilization and Financial Sustainability

	Value	Asymptotic Significance (2-sided)	P-value
Pearson Chi-Square	126.286 ^a	.000	0.000
Likelihood Ratio	124.680	.000	0.000
N of Valid Cases	215		

Chi-square analysis was used to determine the association between endowment funds mobilization and financial sustainability in the Kenyan Universities. The study found a significant association between endowment funds mobilization and financial sustainability in the Kenyan Universities at the 5% level ($P < 0.05$).

Table 4.16

Endowment Funds Mobilization and financial sustainability cross tabulation

			Financial sustainability ³ Recoded		Total
			No financial sustainability	There is financial sustainability	
Endowment Fund ³ Recoded	There is adequate endowment funds strategies used	Count	49	10	59
		% within EndowmentFund 3 Recoded	83.1%	16.9%	100.0%
	There is no adequate endowment funds strategies used	Count	10	146	156
		% within EndowmentFund 3 Recoded	6.4%	93.6%	100.0%
Total	Count		59	156	215
	% within EndowmentFund 3 Recoded		27.4%	72.6%	100.0%

The results from the cross-tabulation analysis show that, among those with an endowment fund, 83.1% felt there was no financial sustainability, while only 16.9% felt there was

financial sustainability. In contrast, among those without an endowment fund, only 6.4% reported no financial sustainability, while a significant 93.6% reported there is financial sustainability. In total, 27.4% of respondents felt there was no financial sustainability, and 72.6% felt there was financial sustainability. This suggests that the presence of an endowment fund does not strongly correlate with financial sustainability in this case, with those without an endowment fund reporting a much higher rate of financial sustainability compared to those with an endowment fund.

4.8.4 Investment in Technology Enhanced Learning has no statistically significant influence on financial sustainability of Universities in Kenya.

Table 4.17

Chi-Square Analysis; Technology enhanced learning and Financial Sustainability

	Value	Asymptotic Significance (2-sided)	P-Value
Pearson Chi-Square	137.754 ^a	.000	0.000
Likelihood Ratio	137.196	.000	0.000
N of Valid Cases	215		

Chi-square analysis was used to determine the association between technology enhanced learning and financial sustainability in the Kenyan Universities. The study found a significant association between technology enhanced learning and financial sustainability in the Kenyan Universities at the 5% level ($P < 0.05$).

Table 4.18

Investment in Technology Enhanced Learning and financial sustainability cross tabulation

			Financial sustainability3 Recoded			
Variable			No financial sustainability	There is financial sustainability	Total	
Investment Technology Recoded	There is no adequate investment in technology enhanced learning strategies	Count	50	8	58	
		% within InvestmentTechnology Recoded	86.2%	13.8%	100.0%	
	There is investment in technology enhanced learning	Count	9	148	157	
		% within InvestmentTechnology Recoded	5.7%	94.3%	100.0%	
Total			Count	59	156	215
			% within InvestmentTechnology Recoded	27.4%	72.6%	100.0%

If there is investment in technology-enhanced learning, financial sustainability is more likely to be achieved. The results from the cross-tabulation analysis show that, among those with no investment in technology-enhanced learning, 86.2% felt there was no financial sustainability, while only 13.8% felt there was financial sustainability. In contrast, among those with investment in technology-enhanced learning, only 5.7% reported no financial sustainability, while a significant 94.3% reported there is financial sustainability. In total, 27.4% of respondents felt there was no financial sustainability, and 72.6% felt there was financial sustainability. This suggests that investment in technology-enhanced learning plays a crucial role in achieving financial sustainability, as those with such investment showed a much higher rate of financial sustainability compared

to those without it.

Table 4.19

Summary Chi-Square Test Analysis for Measuring the Association between each Variable and Financial Sustainability

	Asymptotic Significance		
	Value	(2-sided)	P-Value
Business units			
Pearson Chi-Square	37.461 ^a	0.000	0.000
Likelihood Ratio	36.625	0.000	0.000
N of Valid Cases	215		
Financial Management			
Pearson Chi-Square	45.795a	0.000	0.000
Likelihood Ratio	44.611	0.000	0.000
N of Valid Cases	215		
Endowment funds mobilization			
Pearson Chi-Square	126.286a	0.000	0.000
Likelihood Ratio	124.680	0.000	0.000
N of Valid Cases	215		
Technical enhanced learning			
Pearson Chi-Square	137.754a	0.000	0.000
Likelihood Ratio	137.196	0.000	0.000
N of Valid Cases	215		

According to the summary of the Chi-Square Test Analysis, which measures the relationship between each variable and financial sustainability in Kenyan universities, all of the variables had p-values below 0.05 (P-value of 0.000). It is clear that all of the independent variables and the dependent variable have a statistically significant relationship.

4.9 Binary Regression Analysis

It was crucial to perform regression analysis tests in addition to using chi-square analysis to test the study hypothesis. This is due to the fact that whereas regression analysis provides insights on both the relationship of variables of interest and the actual contribution of each independent variable to the dependent variable, chi-square analysis only provides insights on the relationship of the variables of interest. As a statistical technique, regression analysis allows the researcher to definitely identify the aspects that are most important, those that can be disregarded, and how they affect one another. Regression analysis of business units, financial management procedures, endowment fund mobilization, and technology-enhanced learning was thus conducted in the study in order to test hypotheses and gain understanding of how each independent variable affected the dependent variable. The outcomes were documented in tables. Nagelkerk's R squared coefficient of determination, a modified version of the Cox & Snell R-square, was utilized for interpretation purposes because it modifies the scale of the statistic to include the complete range from 0 to 1.

4.9.1 Regression analysis of Business Units and Financial Sustainability

To investigate the association between business unit practices and financial sustainability in Kenyan universities, binary logistic regression analysis was used. The analysis is also significant since it shows the percentage that business units' practices account for in the variation of the dependent variable.

Table 4.20*Model Summary*

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
210.110a	0.220	0.320

From the model summary, Nagelkerke R Square (R=0.320) is changed to percentage to become 32.0%. This implies that business units account for 32.0% of the variation in the dependent variable; financial sustainability. This is a more optimistic measure compared to the Cox & Snell R² because it adjusts the measure to potentially reach 1, offering a better sense of model fit. The 32% accounting for variation in financial sustainability means that if Business units alone are implemented then financial sustainability is not guaranteed.

Table 4.21*Variables in the equation*

Variable	B	S.E.	P-Value	Odds Ratio
Business Unit strategies				
There is no adequate business units strategies used (RC)				1.000
There is adequate business units practices used	1.948	.337	0.000	7.018

From the findings, it was evident that a significant relationship between business units practices and financial sustainability (p value<0.05) was established. It also showed that where there is no business units strategies used, Universities in Kenya are 5.288 times more likely to achieve financial sustainability compared to Universities in Kenya that do not practice business units.

4.9.2 Regression analysis of Financial Management practices and Financial Sustainability

Binary logistic regression analysis was performed to examine the relationship between financial sustainability and financial management methods in Kenyan universities. Since it illustrates the proportion of the variance in the dependent variable that may be attributed to financial management practices, the study is also noteworthy.

Table 4.22

Model Summary

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
204.700a	0.370	0.490

According to the model summary, Nagelkerke R Square ($R = 0.490$) is converted to a percentage and becomes 45.1%. This means that financial management methods explain 49.0% of the variation in the dependent variable; financial sustainability. This metric is more optimistic than the Cox & Snell R^2 , as it adjusts the measure to potentially reach 1 and provides a greater sense of model fit. The 32% accounting for variation in financial sustainability means that if only finance management practices are in place then financial sustainability is not guaranteed.

Table 4.23

Variables in the equation

Variable	B	S.E.	Sig.	Odd Ratio
Financial Management practices				
There is no adequate financial management strategies used (RC)				1.000
There is adequate financial management strategies used	1.930	0.252	0.000	6.889

The study found a strong correlation ($p\text{-value} < 0.05$) between corporate financial management techniques and financial sustainability. It also demonstrated that if there are financial management strategies, Kenyan universities are 3.334 times more likely to attain financial sustainability compared to Universities in Kenya that do not practice financial management.

4.9.3 Regression analysis of Endowment Funds Mobilization and Financial Sustainability

Binary logistic regression analysis was performed to examine the relationship between endowment of funds mobilization and financial sustainability methods in Kenyan universities.

Table 4.24

Model Summary

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
156.082 ^a	0.483	0.644

From the model summary, Nagelkerke R Square ($R = 0.685$) is converted to a percentage and becomes 68.5%. This means that endowment funds mobilization practices explain 68.5% of the variation in the dependent variable, financial sustainability. This measurement is more optimistic than the Cox & Snell R^2 , as it adjusts the measure to potentially reach 1 and provides a greater sense of model fit.

Table 4.25*Variations in the Equation*

Variable	B	S.E.	p-value	Odd Ratio
Endowment of funds mobilization				
There is no adequate endowment of funds mobilization in use(RC)				1.000
There is adequate endowment of funds mobilization in use	2.681	0.327	0.000	14.600

From the findings, it was evident that a significant relationship between endowment funds mobilization and financial sustainability (p value<0.05) was established. It also showed that where there is no endowment funds mobilization, Universities in Kenya are 6.737 times more likely to achieve financial sustainability compared to Universities in Kenya that do not practice endowment fund mobilization.

4.9.4 Regression analysis of investment in technology enhanced learning and Financial Sustainability

Table 4.26*Model Summary*

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
146.320a	0.535	0.712

According to the model summary, Nagelkerke R Square (R = 0.712) is converted to a percentage and becomes 71.2%. This means that investment in technology enhanced learning explain 71.2% of the variation in the dependent variable, financial sustainability. This metric is more optimistic than the Cox & Snell R², as it adjusts the measure to potentially reach 1 and provides a greater sense of model fit.

Table 4.27*Variations in the Equation*

Variable	B	S.E.	Sig.	Odd Ratio
Investment in technology enhanced learning				
There is no adequate technology enhanced learning practices used (RC)				1.000
There is adequate technology enhanced learning practices used	2.800	0.343	0.000	16.444

The study found a strong correlation ($p\text{-value} < 0.05$) between investment in technology enhanced learning and financial sustainability. It also demonstrated that if there is no investment in technology enhanced learning, Kenyan universities are 6.343 times more likely to attain financial sustainability compared to Universities in Kenya that do not practice.

Table 4.28

Model Summary of Binary regression analysis accounting for each variable contribution to Financial Sustainability

Variable	Deviate Score	Cox & Snell R Square	Nagelkerke R Square
Business Units	216.045a	0.157	0.227
Financial management	209.171a	0.339	0.451
Endowment of funds	156.082a	0.483	0.644
Investment in technology enhanced learning	149.341a	0.499	0.666

Source: Research Data (2025)

Nagelkerke R Square was expressed as a percentage to indicate the contribution of each independent variable to the dependent variable; financial sustainability. The findings reveal that each financial resource mobilization strategy contributes significantly to explaining the variance in financial sustainability among Kenyan universities, as shown by the Nagelkerke R Square percentages. Investment in technology-enhanced learning

explains the highest proportion at 71.2%, highlighting the critical role of digital infrastructure and virtual learning systems in supporting financial resilience. Endowment funds mobilization follows closely, accounting for 68.5% of the variation, confirming its importance as a long-term funding mechanism. Financial management practices contribute 49.0%, underscoring the value of efficient budgeting, planning, and financial controls, while business units explain 32.0% of the variance, demonstrating that entrepreneurial activities also play a meaningful but comparatively smaller role.

The findings show that, in order to improve outcomes like as financial sustainability, Kenyan universities or strategists should prioritize investment in technology-enhanced learning and fund endowment, which contribute the most to the dependent variable. Financial management also has an important part, albeit slightly less, whereas business divisions contribute the least to the outcome. This understanding can guide decision-makers in allocating resources effectively. For example, in a context like Kenyan Universities, strategists might focus on investing more in technology and funding to improve learner outcomes, as these factors have the highest contribution.

The interpretation of the findings of Chumba et al. (2020), who examined the impact of donor funding structures on the financial sustainability of universities in Kenya. Their study revealed that structured donor funding mechanisms, including access to project and research grants, significantly enhance the financial sustainability of universities. The regression analysis indicated a positive relationship between donor funding structures and financial sustainability, emphasizing the importance of diversified financial strategies in bolstering the fiscal health of universities.

Table 4.29

Relationship Between Independent and Dependent Variables and The Extent of Their Likelihood in Influencing Financial sustainability (Binary logistic Regression Variables in The Equation)

Variables	B	S.E.	P-Value	Odds Ratio
<i>Business Unit practices</i>				
There is no adequate business units strategies used (RC)				1.000
There is adequate business units practices used	1.948	.337	0.000	7.018
<i>Financial management practices</i>				
There is no financial management strategies used (RC)	-	-	-	1.000
There is adequate financial management strategies used	1.930	0.252	0.000	6.889
<i>Endowment of funds mobilization</i>				
There no adequate endowment of funds mobilization strategies used (RC)	-	-	-	1.000
There is adequate endowment of funds mobilization used	2.681	0.327	0.000	14.600
<i>Investment in technology enhanced learning</i>				
There is no adequate technology enhanced learning strategies used (RC)	-	-	-	1.000
There is adequate technology enhanced learning strategies used	2.800	0.343	0.000	16.444

The binary logistic regression analysis evaluated the relationship between various financial resource mobilization strategies and financial sustainability among universities in Kenya. All four independent variables namely business units, financial management practices, endowment funds mobilization, and investment in technology-enhanced learning—were statistically significant predictors of financial sustainability, each showing a p-value below 0.05. This indicates that each strategy significantly increases the likelihood of a university achieving financial sustainability when adequately implemented. In addition, where there are adequate business units, universities in Kenya are 5.288 times more likely to achieve financial sustainability compared to universities

that lack such units. This suggests that institutional entrepreneurial ventures, when well-structured and managed, significantly enhance long-term financial resilience.

It also demonstrated that if there are effective financial management practices, Kenyan universities are 3.334 times more likely to attain financial sustainability compared to those that do not implement sound financial governance. Furthermore, where there is active endowment fund mobilization, universities in Kenya are 6.737 times more likely to achieve financial sustainability than those without such strategies. Additionally, if there is investment in technology-enhanced learning, Kenyan universities are 6.343 times more likely to attain financial sustainability compared to those that do not invest in digital learning platforms and infrastructure. These results are consistent with prior studies such as Chumba et al. (2020), who found that diversified financial mechanisms, structured endowment initiatives, and technological investment substantially improve the financial standing of universities.

The binary logistic regression model estimating the likelihood of financial sustainability among Kenyan universities is expressed as:

$$\text{logit}(p) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

$$\text{Figures Substituted: } \text{logit}(p) = -4.215 + 1.665X_1 + 1.204X_2 + 1.908X_3 + 1.847X_4$$

Where: p = probability of the event occurring (here, financial sustainability), β_0 = constant (intercept), $\beta_1, \beta_2, \beta_3, \beta_4$ = coefficients of the predictor variables, X_1, X_2, X_3, X_4 = binary coded variables.

4.10 Testing the Moderation Effect of Intellectual Capital on the Relationship Between Financial Resource Mobilization Strategies and Financial Sustainability

Testing the moderating effect of intellectual capital in the research examined how intellectual capital influences the relationship between independent (business units, financial management, funds endowments mobilization and investment in technology enhanced learning) and dependent variable (financial sustainability). It helped to understand how intellectual capital strengthens or weakens outcomes of financial sustainability. To achieve this, multivariate logistic regression was run and the results were presented in tables and interpreted.

4.10.1 Multivariate Logistic Regression

Multivariate logistic regression is a statistical method used to model the relationship between multiple independent variables and a binary dependent variable. It estimates the probability of an outcome occurring. This technique is applicable when predicting outcomes with two categories based on several predictors simultaneously. In multivariate regression analysis, all independent variables are often run simultaneously. This is because multivariate regression seeks to determine the combined influence of several independent factors on a dependent variable. By considering all predictors at once, it is possible to assess how each variable contributes to explaining the dependent variable while adjusting for the influence of the other factors. Additionally, study results explained the moderating role of intellectual capital and financial sustainability.

Table 4.30

Summary of Multivariate Logistic Regression determining the influence of financial resource mobilization strategies on financial sustainability (without moderating variable)

Variable	B	S.E.	Wald	P-value	Odds Ratio
<i>Business Units</i>					
Insufficient Business Units practices (Reference Category)					
Sufficient Business Units practices	0.980	0.390	6.318	0.012	2.665
<i>Financial Management Practices</i> Inadequate					
Financial Management Practices (Reference Category)					
Adequate Financial Management Practices	0.812	0.328	6.124	0.013	2.253
<i>Endowment Funds Mobilization</i> Insufficient					
Endowment Funds Mobilization (Reference Category)					
Sufficient Endowment Funds Mobilization	1.065	0.370	8.280	0.004	2.900
<i>Investment in Technology Enhanced Learning</i>					
Inadequate Investment in Technology Enhanced Learning (Reference Category)					
Adequate Investment in Technology Enhanced Learning	0.770	0.320	5.797	0.016	2.159
Constant	-2.100	0.800	6.891	0.009	0.122

Source: Research Data (2025)

The results in the table present the significance of each variable and the odds ratios to explain the relationship with financial sustainability as discussed. Results indicated that business unit practices are significantly associated with financial sustainability ($P = 0.012$) at 5% significance level. If business unit practices are in place, universities in Kenya are 2.665 times more likely to achieve financial sustainability compared to those that do not have sufficient business unit practices ($OR = 2.665$). Furthermore, results indicated that financial management practices are significantly associated with financial sustainability ($P = 0.013$) at 5% significance level. Respondents felt that if financial management practices are adequately implemented, universities in Kenya are 2.253 times more likely

to achieve financial sustainability compared to those that lack them (OR = 2.253).

From the findings, it was clear that endowment funds mobilization is significantly associated with financial sustainability ($P = 0.004$). If endowment funds are mobilized, universities in Kenya are 2.900 times more likely to achieve financial sustainability (OR = 2.900) compared to those that do not implement such strategies. At a 5% significance level, results also indicated that investment in technology-enhanced learning is significantly associated with financial sustainability ($P = 0.016$). If a university invests in technology-enhanced learning, it is 2.159 times more likely to achieve financial sustainability (OR = 2.159) compared to those that do not invest in this area. These findings emphasize the cumulative impact of implementing multiple financial strategies to enhance institutional sustainability.

The model's negative constant ($B = -2.100$) further reinforces the findings, suggesting that in the absence of all the listed financial strategies, universities have very low odds (0.122) of being financially sustainable. This demonstrates that financial sustainability in universities is not incidental, but the result of deliberate and well-implemented strategic initiatives. These findings align with Chumba et al. (2020), who found that resource mobilization mechanisms such as structured financial planning, diversified revenue streams, and strategic investments significantly improved the financial sustainability of universities in Kenya. Their research highlighted that proactive resource planning and operational efficiency are critical enablers of long-term institutional resilience. Substituted Equation (Using Coefficients from the Table Without MV):

$$\log\left(\frac{P}{1-P}\right) == -2.100 + 0.980X_1 + 0.812X_2 + 1.065X_3 + 0.770X_4$$

Table 4.31

Summary model without moderating variable (Intellectual Capital)

Deviate score	Cox & Snell R Square	Nagelkerke R Square
<i>Without MV (Intellectual capital)</i>		
141.415a	0.517	0.690

Source: Research Data (2025)

The model summary reveals that financial resource mobilization strategies—namely business units, financial management practices, endowment funds mobilization, and investment in technology-enhanced learning—explain 82.0% of the variance in financial sustainability among Kenyan universities, as indicated by the Nagelkerke R Square value of 0.820. This demonstrates a strong model fit and suggests that the identified strategies, when implemented collectively, significantly enhance the financial health of universities. This supports the findings of Gichure et al. (2022), who noted that intangible assets such as knowledge, institutional memory, and stakeholder networks significantly amplify the impact of financial practices on long-term performance in universities.

Table 4.32

Summary of Multivariate Logistic Regression determining the influence of financial resource mobilization strategies on financial sustainability (with moderating variable)

Variable	B	S.E.	Wald	P-value	Odds Ratio
<i>Business Units</i>					
Insufficient Business Units practices (Reference Category)					
Sufficient Business Units practices	1.180	0.410	8.279	0.004	3.254
<i>Financial Management Practices</i> Inadequate Financial Management Practices (Reference Category)					
Adequate Financial Management Practices	0.950	0.360	6.961	0.008	2.585
<i>Endowment Funds Mobilization</i> Insufficient Endowment Funds Mobilization (Reference Category)					
Sufficient Endowment Funds Mobilization	1.203	0.380	10.003	0.002	3.330
<i>Investment in Technology Enhanced Learning</i> Inadequate Investment in Technology Enhanced Learning (Reference Category)					
Adequate Investment in Technology Enhanced Learning	1.045	0.350	8.918	0.003	2.843
Intellectual Capital Inadequate Intellectual capital					
Adequate intellectual capital	1.025	0.340	9.094	0.003	2.787
Constant	-2.200	0.780	7.952	0.005	0.111

The results in the table present the significance of each variable and the odds ratios to explain the relationship with financial sustainability as discussed. Results indicated that business unit practices are significantly associated with financial sustainability ($P = 0.004$) at the 5% significance level. If business unit practices are in place, universities in Kenya are 3.254 times more likely to achieve financial sustainability compared to those that do not have sufficient business unit practices ($OR = 3.254$). Furthermore, financial management practices were found to be significantly associated with financial sustainability ($P = 0.008$). Respondents indicated that if financial management practices are adequate, universities are 2.585 times more likely to attain financial sustainability

compared to institutions that do not implement such practices (OR = 2.585).

From the findings, it was also evident that endowment funds mobilization is significantly associated with financial sustainability (P = 0.002). When universities engage in endowment funds mobilization, they are 3.330 times more likely to be financially sustainable compared to those that do not (OR = 3.330). Results further indicated that investment in technology-enhanced learning is significantly associated with financial sustainability (P = 0.003). If universities invest in technology-enhanced learning, they are 2.843 times more likely to achieve financial sustainability (OR = 2.843). Lastly, intellectual capital was also significantly associated with financial sustainability (P = 0.003), showing that institutions with adequate intellectual capital are 2.787 times more likely to be financially sustainable compared to those with inadequate intellectual capital (OR = 2.787). These findings underscore the cumulative and reinforcing effect of financial resource strategies and intellectual assets in advancing the financial sustainability of universities in Kenya.

Substituted multivariate model equation:

$$\log\left(\frac{P}{1-P}\right) = -2.200 + 1.180X_1 + 0.950X_2 + 1.203X_3 + 1.045X_4 + 1.025X_5$$

Table 4.33

Model Summary with moderating variable (Intellectual Capital)

Deviate score	Cox & Snell R Square	Nagelkerke R Square
With MV (intellectual capital)		
125.519 ^a	0.552	0.861

Source: Research Data (2025)

The inclusion of intellectual capital as a moderating variable substantially improved the explanatory power of the multivariate logistic regression model assessing financial sustainability in Kenyan universities. The Nagelkerke R Square increased to 0.861 (86.1%), indicating that the combination of financial resource mobilization strategies along with intellectual capital explains approximately 86.1% of the variance in financial sustainability outcomes. This is a significant improvement from the model without the moderating variable, confirming the critical role of intellectual capital—comprising human expertise, organizational knowledge, and stakeholder relationships—in enhancing the effectiveness of resource mobilization strategies. This finding is consistent with the work of Wekesa and Nzulwa (2021), who established that intellectual capital significantly boosts institutional performance by reinforcing strategic capabilities and innovation in resource deployment. Their study emphasized that universities that actively cultivate and leverage their intellectual capital are better positioned to achieve financial resilience and long-term sustainability.

Table 4.34

Comparison between the model without moderating variable (Intellectual Capital) and the model with moderating variable

Variable	B	S.E.	Wald	P-value	Odds Ratio
Model without moderating variable (intellectual capital)					
<i>Business Units</i>					
Insufficient Business Units practices (Reference Category)					
Sufficient Business Units practices	0.980	0.390	6.318	0.012	2.665
<i>Financial Management Practices</i>					
Inadequate Financial Management Practices (Reference Category)					
Adequate Financial Management Practices	0.812	0.328	6.124	0.013	2.253
<i>Endowment Funds Mobilization</i>					
Insufficient Endowment Funds Mobilization (Reference Category)					
Sufficient Endowment Funds Mobilization	1.065	0.370	8.280	0.004	2.900
<i>Investment in Technology Enhanced Learning</i>					
Inadequate Investment in Technology Enhanced Learning (Reference Category)					
Adequate Investment in Technology Enhanced Learning	0.770	0.320	5.797	0.016	2.159
Constant	-2.100	0.800	6.891	0.009	0.122
Model with moderating Variable (Intellectual capital)					
<i>Business Units</i>					
Insufficient Business Units practices (Reference Category)					
Sufficient Business Units practices	1.180	0.410	8.279	0.004	3.254
<i>Financial Management Practices</i>					
Inadequate Financial Management Practices (Reference Category)					
Adequate Financial Management Practices	0.950	0.360	6.961	0.008	2.585
<i>Endowment Funds Mobilization</i>					
Insufficient Endowment Funds Mobilization (Reference Category)					
Sufficient Endowment Funds Mobilization	1.203	0.380	10.003	0.002	3.330
<i>Investment in Technology Enhanced Learning</i>					
Inadequate Investment in Technology Enhanced					

Learning (Reference Category)					
Adequate Investment in Technology Enhanced Learning	1.045	0.350	8.918	0.003	2.843
Intellectual Capital					
Inadequate Intellectual capital					
Adequate intellectual capital	1.025	0.340	9.094	0.003	2.787
Constant	-2.200	0.780	7.952	0.005	0.111

Source: Research Data (2025)

The comparison between the two models in Table 4.34 highlights the impact of incorporating Intellectual Capital as a moderating variable on the relationship between financial resource mobilization strategies and financial sustainability. In the model without the moderator, all four predictors business units, financial management practices, endowment funds mobilization, and investment in technology-enhanced learning show statistically significant associations with financial sustainability (p - values < 0.05), with odds ratios ranging from 2.159 to 2.900. This indicates that when these strategies are practiced in isolation, they still meaningfully contribute to the financial viability of universities, explaining up to 69.0% of the variance as seen in the earlier Nagelkerke R Square.

In contrast, the model with the moderating variable (Intellectual Capital) not only retains significance for all previous predictors but also shows increased strength across all coefficients and odds ratios. For instance, the odds ratio for business units increases from 2.665 to 3.254, and for endowment funds mobilization from 2.900 to 3.330. The inclusion of Intellectual Capital itself is highly significant ($p = 0.003$, OR = 2.787), suggesting it has a strong enhancing effect on the other strategies. The model's constant also slightly decreases (from 0.122 to 0.111), while the Wald statistics improve, reflecting stronger

explanatory power. Overall, the moderated model demonstrates superior predictive strength, explaining 73.6% of the variance in financial sustainability, thus confirming that Intellectual Capital substantially improves the effectiveness and combined impact of financial resource strategies in universities.

Table 4.35

Comparison between summary model with moderating variable (Intellectual Capital) and the one without 125.519a

Deviate score	Cox & Snell R Square	Nagelkerke R Square
<i>Without MV (Intellectual capital)</i>		
141.415a	0.517	0.820
<i>With MV (intellectual capital)</i>		
125.519 ^a	0.552	0.861

The deviate score is a measure of the goodness of fit for the model. In logistic regression or other forms of regression, deviance is used to compare the likelihood of the model with the likelihood of a baseline or model. The model with the lowest deviate score outperforms the one with the highest deviant score. Multivariate regression results show that the summary model with the moderating variable (intellectual capital) has a lower deviate score of 125.519a, whereas the summary model without the change approach has a higher deviate score of 141.415a, implying that the model with the moderating variable is superior to the one without. This means that intellectual capital is important because it has a moderating effect on financial stability. To attain financial sustainability, Kenyan universities should incorporate it into their financial resource mobilization strategy.

4.10.2 Interaction Model (Testing Moderation Effects)

Table 4.36

Model with Interaction Terms

Variable	S.E.	Wald	P-value	Odds Ratio	
<u>Model with interaction terms</u>					
<i>Business Units</i>					
Insufficient Business Units practices (Reference Category)					
Sufficient Business Units practices	1.500	0.400	14.063	0.000	4.481
<i>Financial Management Practices</i>					
Inadequate Financial Management Practices (Reference Category)					
Adequate Financial Management Practices	1.300	0.360	13.028	0.000	3.669
<i>Endowment Funds Mobilization</i>					
Insufficient Endowment Funds Mobilization (Reference Category)					
Sufficient Endowment Funds Mobilization	1.600	0.370	18.703	0.000	4.953
<i>Investment in Technology Enhanced Learning</i>					
Inadequate Investment in Technology Enhanced Learning (Reference Category)					
Adequate Investment in Technology Enhanced Learning	1.400	0.330	17.973	0.000	4.055
Intellectual Capital					
Inadequate intellectual capital					
Adequate intellectual capital	1.390	0.340	16.716	0.000	4.014
<i>Business Units * Intellectual Capital</i>					
Insufficient Business Units * Intellectual Capital (Reference Category)					
Sufficient Business Units * Intellectual Capital practices	0.980	0.250	15.376	0.000	3.000
<i>Financial Management * Intellectual Capital</i>					
Inadequate Financial Management * Intellectual Capital Practices (Reference Category)					
Adequate Financial Management * Intellectual Capital Practices	1.020	0.280	13.286	0.000	3.769
<i>Endowment funds mobilization * Intellectual Capital</i>					
Insufficient endowment * Intellectual Capital (Reference Category)					
Sufficient endowment * Intellectual Capital	1.110	0.270	16.943	0.000	4.033

***Investment in Technology Enhanced Learning *
Intellectual Capital***

Inadequate Investment in Technology Enhanced Learning*Intellectual capital (Reference Category)

Adequate Investment in Technology Enhanced Learning*Intellectual capital	1.030	0.260	15.681	0.000	3.742
Constant	-2.400	0.700	11.77	0.001	0.091

Source: Research Data (2025)

The adjusted moderation model reveals that all financial resource mobilization strategies—business units, financial management practices, endowment funds mobilization, and investment in technology-enhanced learning—remain statistically significant predictors of financial sustainability when considered in the presence of intellectual capital. Each variable reported a p-value below 0.001 and odds ratios ranging between 3.669 and 4.953, indicating strong and consistent effects. Notably, endowment funds mobilization (OR = 4.953) and business units (OR = 4.481) emerged as the most influential predictors, emphasizing their crucial role in institutional financial viability.

The interaction terms between each strategy and intellectual capital were also statistically significant, with odds ratios ranging from 3.000 to 4.033, further confirming the moderating role of intellectual capital. For instance, the interaction between endowment mobilization and intellectual capital (OR = 4.033) suggests that the effectiveness of endowment strategies in promoting sustainability is significantly amplified when a university possesses strong intangible assets such as staff expertise, stakeholder trust, and organizational culture. These findings support previous research by Ndirangu and Muturi (2023), who emphasized that intellectual capital enhances institutional capacity to optimize financial strategies and achieve sustainable outcomes in resource-constrained

environments.

General Form of the Logistic Regression Model with Interaction Terms was:

$$\log\left(\frac{P}{1-P}\right) = -2.400 + 1.500X_1 + 0.300X_2 + 1.600X_3 + 1.400X_4 + 1.390X_5$$

Substituted Model Using Step 3 Results:

$$= -2.400 + 1.500 + 1.300 + 1.600 + 1.400 + 1.390 + 0.980 + 1.020 + 1.110 \\ + 1.030 = 8.930$$

Table 4. 37

Comparison of Model Fit Statistics at Each Moderation Step

Model Description	Deviate Score	Cox & Snell R Square	Nagelkerke R Square
Without Moderating Variable	141.415a	0.517	0.820
With Moderating Variable	125.519a	0.552	0.861
With Interaction Terms	112.350a	0.589	0.937

Source: Research Data (2025)

Table 4.38 presents the model fit statistics for three logistic regression models examining the influence of financial resource mobilization strategies on financial sustainability among Kenyan universities. The first model, which excludes the moderating effect of intellectual capital, recorded a Deviate Score of 141.415, a Cox & Snell R Square of 0.517, and a Nagelkerke R Square of 0.820. This indicates that the model explained approximately 82.0% of the variance in financial sustainability using the four main predictors business units, financial management practices, endowment fund mobilization, and investment in technology-enhanced learning.

With the introduction of the moderating variable (intellectual capital) in the second model,

the Deviate Score dropped to 125.519, and the explanatory power improved modestly to 86.1% (Nagelkerke $R^2 = 0.861$), indicating a better model fit. In the final model (Step 3), which incorporated interaction terms between each financial strategy and intellectual capital, the Deviate Score further declined to 112.350, and the Nagelkerke R Square increased substantially to 0.937. This demonstrates that the interaction between intellectual capital and the financial strategies significantly strengthened the model, enabling it to explain nearly 93.7% of the variation in financial sustainability. These results underscore the importance of considering intellectual capital not just as an independent factor, but also as a strategic enabler that amplifies the effectiveness of financial mobilization efforts.

4.11 Summary of Hypothesis

The study hypothesis was tested using the chi-squared test of significance. Chi-square test analysis assesses the relationship between each independent variable and the dependent variable. It was crucial to perform regression analysis tests in addition to using chi-square analysis to test the study hypothesis. This is due to the fact that whereas regression analysis provides insights on both the relationship of variables of interest and the actual contribution of each independent variable to the dependent variable, chi-square analysis only provides insights on the relationship of the variables of interest. Regression analysis of business units, financial management procedures, endowment fund mobilization, and technology-enhanced learning was thus conducted in the study in order to test hypotheses and gain understanding of how each independent variable affected the dependent variable.

Table 4.38*Summary of Hypothesis*

Hypothesis	P-Value	Action
H01: Business Units have no statistically significant influence on the financial sustainability of Universities in Kenya.	P=0.000<0.05	Rejected
H02: Financial management practices have no statistically significant influence on financial sustainability of Universities in Kenya.	P=0.000<0.05	Rejected
H03: Endowment funds Mobilization has no statistically significant influence on financial sustainability of Universities in Kenya.	P=0.000<0.05	Rejected
H04: Investment in Technology Enhanced Learning has no statistically significant influence on financial sustainability of Universities in Kenya.	P=0.000<0.05	Rejected
H05: Intellectual Capital has no moderating influence on the relationship between revenue generation strategies and financial sustainability of Universities in Kenya.	P=0.000<0.05	Rejected

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter gives a summary of study results and conclusions and subsequently drawing recommendations and further study suggestions. The summary of the results was guided by study objectives

5.2 Summary of Results

This study investigates the influence of a comprehensive set of financial resource mobilization strategies (Business Units, Finance Management Practices, Endowment Funds Mobilization, and Investment in Technology Enhanced Learning) on the financial sustainability of Kenyan universities. The summary of the results was guided by study objectives.

5.2.1 Influence of Business Units on financial sustainability

The chi-square analysis revealed a noteworthy correlation between business units and financial sustainability ($P = 0.000 < 0.05$). Binary logistic regression indicated that business units contribute to 32.0% of the variation in financial sustainability. Binary logistic regression indicated that universities with effective business unit practices are 5.288 times more likely to achieve financial sustainability compared to those in Kenya that do not implement such practices. Multivariate logistic regression (excluding the

moderating variable) revealed that when business unit practices are implemented, universities in Kenya are 2.665 times more likely to attain financial sustainability than those lacking adequate business unit practices.

5.2.2 Influence of Finance Management Practices on financial sustainability

The chi-square analysis revealed a notable correlation between financial management practices and financial sustainability ($P = 0.000 < 0.05$). Binary logistic regression indicated that financial management methods account for 49.0% of the variation in the dependent variable, financial sustainability. Binary logistic regression indicated that the presence of financial management strategies increases the likelihood of Kenyan universities achieving financial sustainability by a factor of 3.334, in comparison to those that do not implement such strategies. Multivariate logistic regression (excluding the moderating variable) revealed that when financial management practices are effectively implemented, universities in Kenya are 2.253 times more likely to attain financial sustainability in comparison to those that do not have such practices in place.

5.2.3 Influence of Endowment Funds Mobilization on financial sustainability

The chi-square analysis revealed a significant correlation between the mobilization of endowment funds and financial sustainability ($P = 0.000 < 0.05$). The analysis using binary logistic regression indicated that the practices related to endowment funds mobilization account for 68.5% of the variance in the dependent variable, which is financial sustainability. Binary logistic regression indicated that institutions with effective endowment funds mobilization are 6.737 times more likely to attain financial

sustainability than those in Kenya that do not engage in such practices. Multivariate logistic regression (excluding the moderating variable) revealed that universities that participate in endowment funds mobilization are 2.900 times more likely to achieve financial sustainability than those that do not adopt these strategies.

5.2.4 Influence of Investment in Technology Enhanced Learning on financial sustainability

The chi-square analysis revealed a significant correlation between technology-enhanced learning and financial sustainability ($P = 0.000 < 0.05$). Binary logistic regression indicated that investment in technology-enhanced learning accounts for 71.2% of the variation in the dependent variable, financial sustainability. Binary logistic regression indicated that investment in technology-enhanced learning significantly increases the likelihood of Kenyan universities achieving financial sustainability, with a factor of 6.343 compared to those that do not engage in such practices. Multivariate logistic regression (excluding the moderating variable) revealed that universities that invest in technology-enhanced learning are 2.159 times more likely to attain financial sustainability than those that do not make such investments.

5.2.5 Moderating influence of Intellectual Capital on the relationship between revenue generation strategies and financial sustainability

The chi-square analysis revealed a significant correlation between intellectual capital and financial sustainability ($P = 0.000 < 0.05$). The multivariate logistic regression analysis, which included Intellectual Capital as a predictor, revealed a significant

association between Intellectual Capital and financial sustainability ($P = 0.003 < 0.05$). This indicates that institutions possessing sufficient intellectual capital are 2.787 times more likely to achieve financial sustainability compared to those lacking adequate intellectual capital. The addition of Intellectual Capital as a moderating variable in the multivariate logistic regression model notably enhanced the model's explanatory capability, as evidenced by the increase in Nagelkerke R Square from 0.820 (accounting for 82.0% of variance without the moderator) to 0.861 (accounting for 86.1% of variance with the moderator). The Deviate Score has shown a reduction from 141.415 to 125.519, suggesting an improved model fit. Moreover, the analysis incorporating interaction terms between each financial strategy and intellectual capital revealed that all interaction terms were statistically significant ($P < 0.001$). The final model accounted for 93.7% of the variation in financial sustainability (Nagelkerke $R^2 = 0.937$). The findings indicate that Intellectual Capital plays a statistically significant moderating role, enhancing the effectiveness of financial resource mobilization strategies aimed at improving financial sustainability.

5.2.6 Comparison of findings for past studies

The study found out that that stronger business units practice significantly raises the odds of university financial sustainability implying that it's effective practice, not mere existence, that matters. This refines mixed prior evidence in Kenya that show that many business units have operated at a loss which is consistent with the study's conditional, practice-quality result (Kipkoech, 2018; Miranda et al., 2016; Murage & Onyuma, 2015). Other African and Asian studies generally find that diversified commercial activities lift

revenue, aligning with the study's positive main effect (Hussin & Rashid, 2017; Miranda et al., 2016).

The study found out that financial management practices significantly improves sustainability odds thus reinforcing the view that budgeting discipline, internal controls, and auditable reporting are foundational. This converges with prior work arguing universities with robust FMPs are more sustainable (Kamanzi & Neema-Abooki, 2018) and that common governance routines (budgeting, cash-flow, controls, asset registers) underpin efficient resource use (Ali & Isak, 2019; Demba, 2013).

The study shows endowment mobilization has a sizeable positive association with sustainability confirming its stabilizing role. Comparatively, studies emphasize endowments as buffers and signals of institutional health (Hasbullah & Rahman, 2021; Petlenko et al., 2021), echoing the findings where endowments underwrite core missions.

The study shows a significant TEL sustainability link consistent with the idea that TEL can safeguard revenue continuity and improve efficiency. Prior literature supports TEL's contribution to teaching/learning quality and institutional resilience (Sen & Leong, 2019; Visvizi & Daniela, 2019), but also documents inequalities and infrastructure constraints that temper impact (Mgaiwa & Poncian, 2016; Nakweya, 2021).

Kenyan evidence points to growing adoption and perceived effectiveness of LMS/TEL amid capability and policy gaps again consistent with the study findings of positive association but highlighting execution risks (Owidi et al., 2023; Wakholi, 2023). Earlier studies warn that fee-dependence is risky and tuition hikes are not a panacea, pushing

universities toward third-stream revenues which is consistent with the study's broad positive effects across strategies (Ahmad et al., 2019; Omona, 2019; Rwebiita, 2020).

The moderated models show IC amplifies the payoff from business units, finance management practices, endowments, and TEL and reported higher Odds ratios across predictors/better fit statistics, reframing IC from a sometimes-inconsistent direct predictor to a strategic enabler. This aligns with studies that link IC to performance through capability building and better resource deployment (Todericiu & Șerban, 2015; Tran et al., 2024) and addresses commercialization/implementation challenges noted in university settings (Omerzel, 2021).

5.3 Conclusion

Drawing on the results presented in the study, the following conclusions were drawn based on the research objectives:

5.3.1 Business Units

Business Units have a statistically significant influence on the financial sustainability of Universities in Kenya, leading to the rejection of the null hypothesis. Binary regression also suggested a positive relationship. This strongly suggests that universities that actively engage in business units Practices are more likely to achieve financial sustainability.

Universities should create an investment-holding subsidiary to professionalize all business units, adopt clear profitability targets per unit, have quarterly M&E dashboards (cost structure, receivables turnover, cash-cycle), and shut-down/turnaround rules for chronic loss-makers. They Should prioritize ventures that leverage university capabilities

(training, consulting, labs, farms, housing) and institute ring-fenced reinvestment of surpluses. The study model shows business significantly raise the odds of sustainability therefore scaling only the best-performing lines with disciplined governance will yield the fastest gains.

5.3.2 Financial management practices

Financial management practices have a statistically significant influence on the financial sustainability of Universities in Kenya, leading to the rejection of the null hypothesis. Similar to business units, binary regression indicated a positive relationship. This strongly suggests that universities that actively engage in financial management are more likely to achieve financial sustainability.

The Universities should tighten core finance controls like medium-term rolling budgets, cash-flow forecasting around fee cycles, commitment controls for capex/opex, aging-based collections policies, monthly variance analysis, and audit-ready reporting. They should establish finance/audit committees with KPI-linked management contracts. Given the strong association and effect sizes, prioritizing liquidity management and internal controls should be an immediate sector-wide standard.

5.3.3 Endowment Funds Mobilization

Endowment Funds Mobilization has a statistically significant influence on the financial sustainability of Universities in Kenya, leading to the rejection of the null hypothesis. Both binary and multivariate regression analyses consistently showed a positive relationship between endowment fund mobilization and financial sustainability. This strongly suggests

that universities that actively engage in endowment fund mobilization are more likely to achieve financial sustainability.

Universities launch a perpetual endowment with a written policy like gift acceptance, asset allocation, payout rule, governance. They should start with alumni micro-giving and payroll giving, corporate matching, named scholarships/chairs, and a transparent annual report to build trust. Adopt a conservative, diversified portfolio and a disciplined payout rule to protect intergenerational equity. With endowment practices showing the largest gains, an endowment should be a flagship pillar of university financing.

5.3.4 Investment in Technology Enhanced Learning

Investment in Technology Enhanced Learning has a statistically significant influence on the financial sustainability of Universities in Kenya, leading to the rejection of the null hypothesis. Both binary and multivariate regression analyses demonstrated a positive relationship between investment in technology-enhanced learning and financial sustainability. This indicates that embracing technology in learning contributes positively to the financial well-being of Kenyan universities.

Universities should adopt a phased TEL business plan, focus first on revenue-accretive, cost-efficient offerings like high-demand online modules, executive short courses, blended large-enrolment units with clear unit economics, centralized instructional design, shared content repositories, and LMS analytics for retention. They should negotiate bandwidth/device partnerships to lower student cost. The study model shows TEL highly explains financial sustainability and materially lifts sustainability odds. Therefore, universities should prioritize TEL lines with proven margin profiles and scale through

standardization.

5.3.5 Intellectual Capital

Intellectual Capital has a statistically significant moderating influence on the relationship between revenue generation strategies and financial sustainability of Universities in Kenya, leading to the rejection of the null hypothesis. The multivariate regression model that included intellectual capital showed a better fit (lower deviate score) compared to the model without it. Furthermore, universities with intellectual capital are significantly more likely to achieve financial sustainability. This underscores the importance of intangible assets and knowledge-based resources in shaping the effectiveness of financial resource mobilization strategies and ultimately contributing to the long-term financial health of Kenyan universities. Therefore, integrating intellectual capital into financial resource mobilization strategies is crucial for enhancing financial sustainability.

Universities must invest in staff upskilling like finance, venture management, online pedagogy, codify processes like SOPs, playbooks, IP policies, and deepen external ties with alumni, industry, and donors. Since IC significantly strengthened the model as a moderator, universities should pair every strategy (Business units , Finance Management practices , Endowment funds mobilization, TEL) with targeted IC actions to amplify returns and guarantee financial sustainability.

5.4 Contribution to the body of knowledge

5.4.1 Managerial implications

The findings regarding the significant positive influence of Endowment Funds Mobilization and Investment in Technology Enhanced Learning on financial sustainability suggest that university management should prioritize and strengthen efforts in these areas. This could involve developing robust fundraising strategies for endowments and strategically allocating resources to enhance technological infrastructure and online learning platforms. The significant association identified in the chi-square and binary regression analyses underscores the importance of effectively establishing and managing income-generating units and implementing sound financial management practices. Managers need to carefully consider the interplay of these strategies with other factors and potentially optimize their implementation. The study's conclusion that Intellectual Capital has a significant moderating influence highlights the critical role of intangible assets such as employee skills, knowledge, and organizational capabilities in enhancing financial sustainability. University management should invest in nurturing and leveraging their intellectual capital through staff development, promoting innovation, and fostering strong relationships with stakeholders.

5.4.2 Contribution to policy makers

The study offers several contributions relevant to policy concerning higher education in Kenya: The study will provide valuable data and timely advice on financial resource mobilization techniques that can significantly improve the financial sustainability of Kenyan universities. This information can be used by policymakers to understand

effective strategies that institutions are or could be employing. The findings will provide an intellectual foundation for the Kenyan government, potentially informing the development of more effective policies related to higher education funding and resource allocation. The study is expected to be useful to the Ministry of Education policymakers, providing them with insights into the impact of different financial resource mobilization tactics on the long-term financial health of universities. It is anticipated that the Kenyan Government, a major stakeholder in institutions of higher education, will find the study's findings useful as it develops and puts into practice the laws that control the nation's higher education budget. The research aims to highlight the challenges faced by management teams in these institutions, which can inform the creation of more realistic and supportive policies. The study will assist Kenyan university policy makers in addressing the financial sustainability challenges. By identifying factors that significantly influence financial sustainability, the research can guide policy interventions aimed at strengthening the financial base of universities.

5.4.3 Theoretical Contribution

The study's theoretical contribution lies in its application and integration of multiple established theories to the specific context of financial sustainability in Kenyan universities. It extends the scope and applicability of these theories, particularly Resource Mobilization Theory, Modern Portfolio Theory, Resource Dependency Theory, and, most notably, Intellectual Capital Theory, by examining their interplay in a unique institutional and geographical setting. The introduction of intellectual capital as a moderating variable is a key theoretical innovation of this research.

5.5. Recommendations

Based on the study's findings, universities and policymakers in Kenya should strategically focus on enhancing financial sustainability by strengthening key financial resource mobilization strategies. Universities should prioritize and invest significantly in Endowment Funds Mobilization and Investment in Technology Enhanced Learning, as these demonstrated the highest contributions to explaining the variation in financial sustainability. Simultaneously, improving Finance Management Practices and effectively managing Business Units are crucial components that also significantly enhance financial health. Furthermore, recognizing the significant moderating influence of Intellectual Capital, institutions must actively cultivate and leverage their human, structural, and relational capital through staff development, fostering innovation, and strengthening stakeholder relationships to amplify the effectiveness of their financial strategies. Policymakers should utilize these findings to inform funding frameworks and create policies that support universities in implementing integrated financial and intellectual capital strategies to build long-term financial resilience in the higher education sector

5.6 Suggestions for further research

Comparative studies could be conducted to examine the effectiveness of different financial resource mobilization strategies across public and private universities in Kenya, potentially identifying best practices specific to each type of institution.

The study focused on universities accredited by the CUE by December 2022. Future research could explore the financial sustainability of newer universities or other types of universities in Kenya, such as TVET institutions and middle level colleges.

Further research could also be done on the moderating or mediating effect of the new government funding model on the financial sustainability of universities in Kenya.

REFERENCES

- Afriyie, K. O., & Oppong, M. (2015). An empirical analysis of the sustainability of Ghana's trade deficits. *International Journal of Economics and Business Research*, 10(3), 213. <https://doi.org/10.1504/ijebr.2015.071840>
- Agallo, W. J. (2023). *Determinants of Adoption of E-learning Management Systems Among Students in TVET Institutions in Kenya: A Case of Nairobi County* [Master's thesis, University of Nairobi]. University of Nairobi Digital Repository. <http://erepository.uonbi.ac.ke/handle/11295/164174>
- Agunda, M. A., Were, S., & Mboya, M. A. (2024). Work-Life Balance Practices and Employee Performance in Public Universities in Kenya. *Human Resource and Leadership*, 4(3), 19–35. <https://doi.org/10.70619/vol4iss3pp19-35>
- Ahangar, R. G. (2011). The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company. *African journal of business management*, 5(1), 88. <https://doi.org/10.5897/AJBM10.712>
- Ahmad, R., Farley, A., & Kim Soon, N. (2019). Categorisation of Public Universities Funding. *Asian Social Science*, 10(10), 57. <https://doi.org/10.5539/ass.v10n10p57>
- Ahmad, S. N. S., Amran, F. H., Rahman, I. K. A., Salleh, K., & Haron, N. H. (2019). Funding trends of research universities in Malaysia. *Procedia-Social and Behavioral Sciences*, 164, 126-134. <http://dx.doi.org/10.1016/j.sbspro.2014.11.060>
- Ahmad, S. Z., & Buchanan, R. F. (2015). Entrepreneurship education in Malaysian universities. *Tertiary Education and Management*, 21(4), 349–366. <https://doi.org/10.1080/13583883.2015.1106577>
- AI-Youbi, A. O., Zahed, A. H. M., Nahas, M. N., & Hegazy, A. A. (2021). *The leading world's most innovative universities* (p. 106). Springer Nature.
- Akeel, U. U., Bell, S. J., & Mitchell, J. E. (2019). Assessing the sustainability content of the Nigerian engineering curriculum. *International Journal of Sustainability in*

- Higher Education*, 20(4), 590–613. <https://doi.org/10.1108/IJSHE-11-2018-0217>
- Akinyemi, N., & Ifijeh, G. I. (2013). Leadership style and job commitment of library personnel in universities: A study of private university libraries in Southwest Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 4(1), 92-105. <https://www.ajol.info/index.php/ijikm/article/view/144614/134257>
- Ali, A. Y. S., & Isak, A. O. (2019). Financial management practices and financial performance of service companies in Somalia. *Financial Management*, 10(4), 59-68. <https://www.iiste.org/Journals/index.php/RJFA/article/download/46619/48137>
- Ali, S., Murtaza, G., Hedvicakova, M., Jiang, J., & Naeem, M. (2022). Intellectual capital and financial performance: A comparative study. *Frontiers in Psychology*, 13, 967820. <https://doi.org/10.3389/fpsyg.2022.967820>
- Almagtome, A., Shaker, A., Al-Fatlawi, Q., & Bekheet, H. (2019). The Integration between Financial Sustainability and Accountability in Higher Education Institutions: An Exploratory Case Study. *International Journal of Innovation, Creativity and Change*, 8(2), 202–221. <https://www.researchgate.net/publication/337825961>
- Almahasees, Z., Mohsen, K., & Amin, M. O. (2021). Faculty's and Students' Perceptions of Online Learning During COVID-19. *Frontiers in Education*, 6, 638470. <https://doi.org/10.3389/feduc.2021.638470>
- Altman, E. I., Iwanicz-Drozowska, M., Laitinen, E. K., & Suvas, A. (2017). Financial Distress Prediction in an International Context: A Review and Empirical Analysis of Altman's Z- Score Model. *Journal of International Financial Management & Accounting*, 28(2), 131–171. <https://doi.org/10.1111/jifm.12053>
- Arante, R. B. (2024). Adequacy and Functionality of Information and Communication Technology Infrastructure for Online Learning in a Philippine Higher Education Institution. *Journal of Education and Learning (EduLearn)*, 19(3), 1484–1491. <http://dx.doi.org/10.11591/edulearn.v19i3.22336>

- Archuleta, K. L., Dale, A., & Spann, S. M. (2013). College Students and Financial Distress: Exploring Debt, Financial Satisfaction, and Financial Anxiety. *Journal of Financial Counseling and Planning*, 24(2), 50–62. <https://eric.ed.gov/?id=EJ1043230>
- Asawo, S. P. (2021). Social Capital and Organizational Sustainability: An Empirical Review. *Nigerian Academy of Management Journal*, 16(2), 137–145. <https://namj.tamn-ng.org/index.php/home/article/view/159>
- Baligidde, S. H. (2010). Towards a Five-Step Institutional Income Diversification Strategy for Institutions of Higher Education. *Journal of Science and Sustainable Development*, 3(1), 91–97. <https://doi.org/10.4314/jssd.v3i1.67757>
- Bastola, R. (2021). *Factors Affecting the Student Success: A Survey Study* [Doctoral Dissertation, Tribhuvan University]. <https://hdl.handle.net/20.500.14540/10656>
- Bell, R. (2019). Predicting entrepreneurial intention across the university. *Education + Training*, 61(7/8), 815–831. <https://doi.org/10.1108/ET-05-2018-0117>
- Bodunkova, A. G., & Chernaya, I. P. (2012). Fractal Organization as Innovative Model for Entrepreneurial University Development. *World Applied Sciences Journal*, 18(Special Issue of Economics), 74–82. <http://dx.doi.org/10.5829/idosi.wasj.2012.18.120012>
- Bondzi–Simpson, P. E., & Agomor, K. S. (2022). Financing Public Universities in Ghana Through Strategic Agility: Lessons from Ghana Institute of Management and Public Administration (GIMPA). *Global Journal of Flexible Systems Management*, 22(1), 1–15. <https://doi.org/10.1007/s40171-020-00254-6>
- Bontis, N. (2012). National Intellectual Capital Index: The Benchmarking of Arab Countries. In *Intellectual Capital for Communities*. Routledge.
- Burton, J. J., & Miroga, J. (2024). Working Capital Management Practices and Financial Performance of Public Universities in Kenya. *International Journal of Social Science and Humanities Research*, 2(3), 46–59. <https://doi.org/10.61108/ijsshr.v2i3.126>

- Byers, S. S., Groth, J. C., & Sakao, T. (2015). Using portfolio theory to improve resource efficiency of invested capital. *Journal of Cleaner Production*, 98, 156–165. <https://doi.org/10.1016/j.jclepro.2013.11.014>
- Cabrita, M. D. R., & Bontis, N. (2008). Intellectual capital and business performance in the Portuguese banking industry. *International Journal of Technology Management*, 43(1–3), 212–237. <https://doi.org/10.1504/IJTM.2008.019416>
- Casanueva, C., Gallego, A., & Revilla, M. A. (2015). Access and mobilization of network resources and competitive advantage in hotels: A conceptual framework. *International Journal of Contemporary Hospitality Management*, 27(6), 1279–1300. <https://doi.org/10.1108/IJCHM-03-2013-0144>
- Cernostana, Z. (2017). *Financial sustainability for private higher education institutions* (Working Paper No. 17/2017). Institute of Economic Research Working Papers. <https://www.econstor.eu/handle/10419/219840>
- Chahal, H., & Bakshi, P. (2014). Effect of intellectual capital on competitive advantage and business performance: Role of innovation and learning culture. *International Journal of Learning and Intellectual Capital*, 11(1), 52–70. <https://doi.org/10.1504/IJLIC.2014.059227>
- Chan, K. H. (2009). Impact of intellectual capital on organisational performance: An empirical study of companies in the Hang Seng Index (Part 1). *The Learning Organization: An International Journal*, 16(1), 4–21. <https://doi.org/10.1108/09696470910927641>
- Chelangat, V., Sang, P. K., & Simiyu, E. (2018). Effect of financial planning on financial sustainability of public governance non-governmental organizations in Nairobi County, Kenya. *International Journal of Current Aspects*, 2(5), 37–45. <https://www.academia.edu/download/57892621/IJCAB.2018.008.62.pdf>
- Chelangat, V., Sang, P. K., & Simiyu, E. (2018). Effect of Financial Planning on Financial Sustainability of Public Governance Non-Governmental Organizations in Nairobi County, Kenya. *International Journal of Current Aspects*, 2(5), 37–45.

<https://www.ijcab.org/201800862/>

Chokaa, V., Baimwera, D. B., Mugambi, D. K., & Senaji, T. A. (2023). Institutional Framework and Financial Corporate Compliance in Public Universities in Kenya. *Journal of Finance and Accounting*, 2(2), 11–18. <https://doi.org/10.70619/vol2iss2pp11-18>

Chumba, J. A. (2023). *Financial Resource Mobilization Strategies and Financial Sustainability of Universities in Kenya* [Thesis, Jomo Kenyatta University of Agriculture and Technology]. <http://localhost/xmlui/handle/123456789/6052>

Chumba, J. A., Muturi, W., & Oluoch, J. O. (2020). Green finance for Kenya's universities? Unpacking the effect of donor funding resource mobilization structure on the financial sustainability of universities in Kenya. *IOSR Journal of Business and Management*, 22(9), 29–40. <https://doi.org/10.9790/487X-2209072940>

Chumba, J. A., Muturi, W., & Oluoch, J. O. (2025). Effect of Financial Investment Strategies on the Financial Sustainability of Universities in Kenya. *International Academic Journal of Economics and Finance*, 3(3), 37–49. <https://www.iajournals.org/index.php/8-articles/516-iajef-v3-i3-37-4>

Crossman, A., Starkey, L., & Aber, J. L. (2019). Risk or resource: Does school climate moderate the influence of community violence on children's social-emotional development in the Democratic Republic of Congo? *Developmental Science*, 22(5), e12845. <https://doi.org/10.1111/desc.12845>

Curado, C., Henriques, L., & Bontis, N. (2011). Intellectual capital disclosure payback. *Management Decision*, 49(7), 1080–1098. <https://doi.org/10.1108/00251741111151154>

Dumestre, M. J. (2016). *Financial Sustainability in US Higher Education: Transformational Strategy in Troubled Times*. Springer.

Dyakona, V. (2015). Genesis of the theory of intellectual capital and its importance in modern economy. *Information technologies, management and society*, 8(1), 68-

71. https://ismaitm.lv/wp-content/uploads/proceedings_2015.pdf
- Edvinsson, L., & Lin, C. Y.-Y. (2013). National intellectual capital in Israel and financial crisis impact. *International Journal of Knowledge-Based Development*, 4(3), 245–273. <https://doi.org/10.1504/IJKBD.2013.055872>
- Edwards, B. & Gillham, P. F. (2013). *Resource Mobilization Theory*. <https://www.researchgate.net/profile/Bob-Edwards/publication/319581221>
- Eltantawy, N., & Wiest, J. B. (2011). The Arab Spring| Social Media in the Egyptian Revolution: Reconsidering Resource Mobilization Theory. *International Journal of Communication*, 5(0), 18. <https://ijoc.org/index.php/ijoc/article/view/1242>
- Estermann, T., & Pruvot, E. B. (with European University Association). (2014). *European universities diversifying income streams*. Europ. Univ. Assoc.
- Farah, A. A. (2020). *Effect of Intellectual Capital on Financial Sustainability of Savings and Credit Cooperative Societies in Kenya* [Master's Thesis, Kenya Methodist University]. <http://repository.kemu.ac.ke/handle/123456789/1295>
- Francis, J. C., & Kim, D. (2013). *Modern portfolio theory: Foundations, analysis, and new developments*. John Wiley & Sons.
- Gachanja, J., Deya, J., & Muturi, W. M. (2024). The Relationship between Knowledge Sharing Capability and Competitiveness of Chartered Public Universities in Kenya. *International Journal of Strategic Management*, 3(5), 41–54. <https://doi.org/10.47604/ijsm.3042iprjb.org>
- Ghazali, N. M., Marzukhi, M. A., & Leh Ling, O. H. (2023). University Land Used Potential to Generate Income. *IOP Conference Series: Earth and Environmental Science*, 1274(1), 012038. <https://doi.org/10.1088/1755-1315/1274/1/012038>
- Gichoni, E., & Njoroge, J. (2023). Effects of Debt Management Practices on Service Delivery among Public Universities in Kenya: A Case Study of Egerton University. *International Academic Journal of Arts and Humanities*, 1(3), 371–392. https://iajournals.org/articles/iajah_v1_i3_371_392.pdf

- Gichure, C. W., Ochieng, I., & Wanyoike, D. (2022). Strategic Role of Intellectual Capital in Enhancing Performance of Public Universities in Kenya. *Journal of Education and Practice*, 13(15), 58–68. <https://doi.org/10.7176/JEP/13-15-07>
- Githaiga, N. (2022). Intellectual capital and bank performance: The moderating role of income diversification. *Asia-Pacific Journal of Business Administration*, 15(4), 509–526. <https://doi.org/10.1108/APJBA-06-2021-0259>
- Gudo, C. (2014). Financing higher education in Kenya: Public-private partnership approach. *International Journal of Educational Policy Research and Review*, 1(1), 1-5. <https://journalissues.org/wp-content/uploads/2014/07/Gudo1.pdf>
- Guthrie, J., Ricceri, F., & Dumay, J. (2012). Reflections and projections: A decade of Intellectual Capital Accounting Research. *The British Accounting Review*, 44(2), 68–82. <https://doi.org/10.1016/j.bar.2012.03.004>
- Hasbullah, N. A., & Rahman, A. A. (2021). Endowment and waqf funds in Malaysian higher education: A conceptual study. *Journal Syariah*, 29(1), Article 1. <https://doi.org/10.22452/js.vol29no1.6>
- Hassan, A., & Forhad, A. (2013). The Role of NGOs in The Sustainable Development in Bangladesh. *Present Environment & Sustainable Development*, 7(2), 59-72. <https://www.pesd.ro/articole/nr.7/PESDVOL7NR22013/06TRONGOSITSDIB171020135972.pdf>
- Hearn, J. C., & Belasco, A. S. (2015). Commitment to the Core: A Longitudinal Analysis of Humanities Degree Production in Four-Year Colleges. *The Journal of Higher Education*, 86(3), 387–416. <https://doi.org/10.1080/00221546.2015.11777369>
- Hussin, R., & Rashid, R. A. (2017). Diversifying income generation through waqf in public Universities in Malaysia: Efforts and challenges. *IJASOS-International E-Journal of Advances in Social Sciences*, 3(7), 223-231. <https://dergipark.org.tr/en/download/article-file/298433>
- Institute for Fiscal Studies. (2017). *Education*. Institute for Fiscal Studies. <https://ifs.org.uk/election-2017/education>

- Jaafar, J. A., Latiff, A. R. A., Daud, Z. M., & Osman, M. N. H. (2023). Does Revenue Diversification Strategy Affect the Financial Sustainability of Malaysian Public Universities? A Panel Data Analysis. *Higher Education Policy*, 36(1), 116–143. <https://doi.org/10.1057/s41307-021-00247-9>
- Jachna, T. (2021). Digital Technologies and the Future of Public Space. In T. Jachna (Ed.), *Wiring the Streets, Surfing the Square: Producing Public Space in the Mediated City* (pp. 211–226). Springer International Publishing. https://doi.org/10.1007/978-3-030-66672-9_12
- Jenkins, J. C. (1983). Resource Mobilization Theory and the Study of Social Movements. *Annual Review of Sociology*, 9(1), 527–553. <https://doi.org/10.1146/annurev.so.09.080183.002523>.
- Johnstone, P., & Schot, J. (2023). Shocks, institutional change, and sustainability transitions. *Proceedings of the National Academy of Sciences*, 120(47), e2206226120. <https://doi.org/10.1073/pnas.2206226120>
- Jung, Y., Park, K., & Ahn, J. (2019). Sustainability in Higher Education: Perceptions of Social Responsibility among University Students. *Social Sciences*, 8(3), 90. <https://doi.org/10.3390/socsci8030090>
- Kalomo, C., & Chama-Chiliba, C. (2022). Assessing the Internal Financial Capacity of the University of Zambia for Financial Sustainability. *Open Journal of Business and Management*, 10(04), 2115–2126. <https://doi.org/10.4236/ojbm.2022.104107>
- Kamala, C. A. (2022). *Critical Success Factors for the Implementation of Resource Mobilization Strategies of Private Universities in Kenya* [Master's thesis, United States International University-Africa]. USIU-A Digital Repository. <http://erepo.usiu.ac.ke/11732/7279>
- Kamanzi, S. M., & Neema-Abooki, P. (2018). Financing higher education: Income generation in Ugandan public universities. *Journal of Public Administration*, 53(4), 904–918. <https://doi.org/10.10520/EJC-17245edabc>
- Kariuki, P. W., Karitu, L. K., & Kariuki, S. N. (2022). Revenue Mobilization, Budgetary

- Controls and Financial Sustainability of Public Universities in Kenya. *Webology*, 19(1), 1-10. <https://repository.kcau.ac.ke/handle/123456789/1505>
- Kathomi, A., Njeru, D. M., & Ocharo, K. N. (2022). Influence Of Revenue Streams on Financial Sustainability: Evidence from Kenyan Public Universities. *Webology*, 19(2), 1. <https://search.ebscohost.com/login.aspx>
- Kiambi, S. M., Walubaka, D. E., & Munene, D. H. N. (2022). The Influence of County Government Financial Mobilization on Service Delivery in Meru County, Kenya. *International Journal of Finance*, 7(1), 59-77. <https://www.researchgate.net/profile/Elijah-Walubuka/publication/360692306>
- Kikutadze, V., & Tabatadze, L. (2017). Diversification of Funding Models of Higher Education Service Market in Georgia. *European Scientific Journal, ESJ*, December(Special), 56–62. https://www.academia.edu/90608156/Diversification_of_Funding_Models_of_Higher_Education_Service_Market_in_Georgia
- Kimathi, B. K., & Irungu, A. M. (2024). Revenue Diversification on Financial Sustainability of Public Universities in Kenya. *Journal of Finance and Accounting*, 4(3), 31–41. <https://doi.org/10.70619/vol4iss3pp31-41>
- Kinuthia, W. (2009). Educational development in Kenya and the role of information and communication technology. *International Journal of Education and development using ICT*, 5(2), 6-20. <https://www.learntechlib.org/d/188086/>
- Kithinji, M. M., Wepukulu, J. M., Gekara, M., & Mwanzia, M. (2023). Cash Management and Financial Performance of Public Universities in Kenya. *Reviewed Journal International of Business Management*, 4(1), 41–59. <https://doi.org/10.61426/business.v4i1.61>
- Kobugabe, C., & Rwakihembo, J. (2022). Financial resource mobilization strategies and financial sustainability: Empirical evidence from private universities in Uganda. *American Journal of Finance*, 7(1), 18-33. <https://www.researchgate.net/profile/John-Rwakihembo/publication/359693351>

- Kobugabe, C., & Rwakihembo, J. (2022). Financial Resource Mobilization Strategies and Financial Sustainability: Empirical Evidence from Private Universities in Uganda. *American Journal of Finance*, 7(1), 18–33. <https://doi.org/10.47672/ajf.976>
- Kombo, K., & Mwangi, M. I. (2023). Strengthening University Partnerships and Collaborations in Kenya: Strategies for Sustainability. *The Cradle of Knowledge: African Journal of Educational and Social Science Research*, 6(3), 1–15. <https://www.ajol.info/index.php/ajessr/article/view/239685>
- Kosgei, A. J., Kipkoech, L., & Limo, A. (2023). The Availability of Infrastructure to Support Digital Learning in Public Universities During the Post COVID-19 Era in Uasin Gishu County, Kenya. *Journal of Research in Education and Technology*, 1(1), 47-59. <https://doi.org/10.69897/joret.v1i1.7>
- Kossey, M. M., & Ishengoma, J. M. (2017). Issues and Challenges of Student Financing Systems in Africa: The Case of Tanzania. *International Journal of African Higher Education*, 4(1), 65–90. <https://doi.org/10.6017/ijahe.v4i1.10250>
- Kowang, T. O., Khan, M. P., & Talib, N. A. (2018). Development of Sustainability Framework Based on the Theory of Resource Based View. *International Journal of Academic Research in Business and Social Sciences*, 8(7), Pages 636-647. <https://doi.org/10.6007/IJARBSS/v8-i7/4406>
- Kuria, P., Maore, S. K., & Munga, J. (2021). Influence of customer service strategies on organizational performance among private universities in Kenya. *The Strategic Journal of Business & Change Management*, 8(4), 720–739. <https://strategicjournals.com/index.php/journal/article/view/2137/2041>
- Leal-Filho, W., Brandli, L. L., Becker, D., Skanavis, C., Kounani, A., Sardi, C., Papaioannidou, D., Paço, A., Azeiteiro, U., De Sousa, L. O., Raath, S., Pretorius, R. W., Shiel, C., Vargas, V., Trencher, G., & Marans, R. W. (2018). Sustainable development policies as indicators and pre-conditions for sustainability efforts at universities: Fact or fiction? *International Journal of Sustainability in Higher Education*, 19(1), 85–113. <https://doi.org/10.1108/IJSHE-01-2017-0002>

- Lee, H.-S., Cheng, F.-F., & Chong, S.-C. (2016). Markowitz Portfolio Theory and Capital Asset Pricing Model for Kuala Lumpur Stock Exchange: A Case Revisited. *International Journal of Economics and Financial Issues*, 6(3), 59–65. <https://dergipark.org.tr/en/pub/ijefi/issue/31983/352657>
- Lutembo, G. M. (2020). *Financial resource mobilization business strategies used in public secondary schools of Lusaka district of Zambia*. [Doctoral Dissertation, The University of Zambia]. <https://dspace.unza.zm/items/acf130b5-f0f7-42e7-bcb1-3600389208ed>
- Mahmud, A., Nuryatin, A., & Susilowati, N. (2022). Income generating activity in higher education: A case study of a public university in Indonesia. *International Journal of Evaluation and Research in Education (IJERE)*, 11(1), 303-312. <https://doi.org/10.11591/ijere.v11i1.22050>
- Mahmud, A., Susilowati, N., Anisykurlillah, I., & Sari, P. N. (2023). Increasing Income Generation: The Role of Staff Participation and Awareness. *International Journal of Financial Studies*, 11(1), Article 1. <https://doi.org/10.3390/ijfs11010025>
- Mamo, F. (PhD). (2015). *Revenue Generation Strategies in Sub-Saharan African Universities* [Doctoral Dissertation, St. Mary's University]. <http://repository.smuc.edu.et/handle/123456789/2300>
- Mandanici, F., & Pace, R. (2016). University Financial Sustainability: A comparison between Italy and other EU Countries (Part II: The Analysis). *Rivista Di Studi Sulla Sostenibilità*, VI(1), 103–129. <https://doi.org/10.3280/RISS2016-001009>
- Manuh, T., Gariba, S., & Budu, J. (2007). *Change & transformation in Ghana's publicly funded universities: A study of experiences, lessons & opportunities*. James Currey.
- Manuh, T., Gariba, S., & Budu, J. (2007). *Change and transformation in Ghana's publicly funded universities*. Woeli Publishing Services.
- Marginson, S. (2017). The World-Class Multiversity: Global commonalities and national characteristics. *Frontiers of Education in China*, 12(2), 233–260.

<https://doi.org/10.1007/s11516-017-0018-1>

Markowitz, H. (1952). Modern portfolio theory. *Journal of Finance*, 7(11), 77-91.

<https://www.raymondjames.com/-/media/rj/advisor-sites/sites/s/t/sturgeonellett/files/february-2023.pdf>

Mathenge, P. W., & Muturi, W. (2017). *Effects of financial management practices on financial performance of public universities in Kenya*. *International Journal of Social Sciences and Information Technology*, 3(8), 2354 - 2363. <https://www.ijssit.com/main/wp-content/uploads/2017/10>

Mbithe, M., Ugangu, W., & Kigatiira, K. (2024). The Role of Stakeholder Engagement in Enhancing CSR in Private Universities in Kenya. *Kabarak Journal of Research & Innovation*, 14(3), 268–275. <https://doi.org/10.58216/kjri.v14i3.476>

Mbugua, A. M. (2023). *Public Sector Accounting Standards Practices and Quality of Financial Reporting of Public Universities in Kenya* [Master's thesis, University of Nairobi]. University of Nairobi Research Archive. <http://erepository.uonbi.ac.ke/handle/11295/166560>

McCarthy, J. D., & Zald, M. N. (1977). Resource Mobilization and Social Movements: A Partial Theory. *American Journal of Sociology*, 82(6), 1212–1241. <https://doi.org/10.1086/226464>

McIntosh (2011). *Endowment funds – the route to financial sustainability for civil society organizations or just a distraction? (Technical Report No. 398)*. Caribbean Natural Resources Institute. <https://canari.org/endowment-funds-the-route-to-financial-sustainability-for-civil-society-organisations-or-just-a-distraction-canari-technical-report-no-398/>

McLaren, J. I., & Struwig, F. W. (2019). Financial ratios as indicators of financial sustainability at a South African university. *Journal of Contemporary Management*, 16(2), 68–93. <https://doi.org/10.35683/jcm19030.0027>

Memba, F., & Nyanumba, J. A. (2013). Causes of financial distress: A survey of firms funded by industrial and commercial development corporation in

- Kenya. *Interdisciplinary journal of contemporary research in business*, 4(12), 1171-1185. <https://www.semanticscholar.org/paper/Causes-of-Financial-Distress>
- Mhedhbi, I. (2013). Identifying The Relationship Between Intellectual Capital and Value Creation of The Company Using Structural Equations Analysis-The Case of Tunisia. *Journal of Business Studies Quarterly*, 5(2), 216. <https://media.proquest.com/media/hms/OBJ/pcq1V>
- Midiwo, J. (2016). *Influence of Human Resource Information Systems on the Performance in Kenyan Public Universities* [Doctoral Dissertation, Jomo Kenyatta University of Agriculture and Technology]. <http://localhost/xmlui/handle/123456789/2125>
- Minyoso, J. (2020). Determinants of financial sustainability of public universities in Kenya. *The Strategic Journal of Business & Change Management*, 7(3), 97–111. <https://www.researchgate.net/publication/373985927>
- Minyoso, J., & Musiega, M. (2020). Effect of working capital management on financial sustainability of public universities in Kenya. *The Strategic Journal of Business & Change Management*, 7(3), 365–372. <https://strategicjournals.com/index.php/journal/article/view/1677/1605>
- Miranda, A. T., Tenedero, L. E., Fiel-Miranda, J. L., & Celestino, E. R. (2016). The income-generating projects of a government academic institution in The Philippines: The case of the University of Eastern Philippines. *Asia Pacific Journal of Innovation and Entrepreneurship*, 10(1), 5–16. <https://doi.org/10.1108/APJIE-12-2016-006>
- Miriti, D. M. (2016). *Donor Funding Practices and Financial Sustainability of Donor Aided Projects in World Vision Kenya* [Doctoral Dissertation, University of Nairobi]. <http://erepository.uonbi.ac.ke/handle/11295/99746>
- Mohamed, A. I., & Makori, D. (2022). Strategic Financial Practices and Funding Sustainability of Non-Governmental Organizations in Kenya: A Case of Islamic Relief Kenya. *International Journal of Current Aspects in Finance, Banking and Accounting*, 4(2), Article 2. <https://doi.org/10.35942/ijcfa.v4i2.248>

- Mohamed, M. H., & Muturi, W. (2017). Factors affecting financial performance of income generating units among universities in Puntland state of Somalia: The case Puntland State University (PSU). *International Journal of Economics, Commerce & Management*, 5(4), 287 - 318. <https://ijecm.co.uk/wp-content/uploads/2017/04/5418.pdf>
- Mohsin, A., Shehzad, A., Bilal, F., Imran, F., Akhtar, S., & Fatima, S. A. (2022). Assessment of Awareness on Climate Change among Public and Private Universities of Lahore. *Indonesian Journal of Innovation and Applied Sciences (IJIAS)*, 2(1), 80–87. <https://doi.org/10.47540/ijias.v2i1.439>
- Mori, M. (2021). Technology-Enhanced Financial Education and Sustainability Goals. In Z. Hu, S. Petoukhov, I. Dychka, & M. He (Eds.), *Advances in Computer Science for Engineering and Education III* (Vol. 1247, pp. 599–608). Springer International Publishing. https://doi.org/10.1007/978-3-030-55506-1_53
- Mose, N., Arthur, D. E., Fumey, M. P., & Thomi, J. (2024). An Empirical Analysis of Public Debt Sustainability in Kenya. *Asian Journal of Economics, Business and Accounting*, 24(9), 350–366. <https://doi.org/10.9734/ajeba/2024/v24i91497>
- Mtonga, T., & Banja, M. K. (2020). Exploring the Benefits and Challenges of Strategic Alliances in Zambia's Higher Education Markets. *East African Journal of Education and Social Sciences*, 1(2), 168-178. <https://doi.org/10.46606/eajess2020v01i02.0032>
- Mugo, M. N., & Siagi, D. A. (2024). Factors Affecting Retention of Academic Staff in Selected Private Chartered Universities in Kiambu County Kenya. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, 8(2). <https://sagepublishers.com/index.php/ijssme/article/view/484>
- Mujuru, N. M., & Obi, A. (2020). Effects of Cultivated Area on Smallholder Farm Profits and Food Security in Rural Communities of the Eastern Cape Province of South Africa. *Sustainability*, 12(8), 3272. <http://dx.doi.org/10.3390/su12083272>
- Munene, I. (2019). Profits and Pragmatism: The Commercial Lives of Market Universities

- in Kenya and Uganda. *Sage Open*, 5(4), 2158244015612519. <https://doi.org/10.1177/2158244015612519>
- Murage & Onyuma, S. M. (2015). *An evaluation of the contribution of income generating units in financing public universities: A case of Egerton university and former constituent colleges* [Thesis, Egerton University]. <http://ir-library.egerton.ac.ke/bitstream/handle/123456789/1789>
- Murage, S. M., & Onyuma, S. O. (2015). Analysis of Financial Performance of Income Generating Activities in Public Higher Learning Institutions: Experience from Egerton University, Kenya. *Research Journal of Finance and Accounting*, 6(7), 247-254. <https://www.academia.edu/download/98626593/22460.pdf>
- Mwanyasi (2022, October 20). Endowment funds provide a secure way of financing varsities. *Business Daily*. <https://www.businessdailyafrica.com/bd/opinion-analysis/columnists/endowment-funds-provide-a-secure-way-of-financing-varsities-3992344>
- Mwaura, S., Gichure, J., & Makokha, E. N. (2022). Financial Management Practices on Financial Performance of Government Funded Youth Group Businesses in Nakuru East Sub—County, Kenya. *International Journal of Recent Research in Commerce Economics and Management (IJRRCEM)*, 9(4), 46–59. <https://doi.org/10.5281/ZENODO.7225079>
- Mynewsgh (2018). *Central university to sack over 200 staff in latest revelation*. <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Central-University-to-sack-over-200-staff-inlatest-revelation-631919>
- Nalwoga, M. (2021). Financial Sustainability of Private Universities in Uganda; A Critical Perspective. *African Journal of Education, Science and Technology*, 6(3), 128-139. <https://ajest.info/index.php/ajest/article/view/537>
- Naseem, S., & Almasri, R. (2016). Resource Mobilization by Indian Mutual Fund Industry. *AMBER – ABBS Management Business and Entrepreneurship Review*, 7(1), 38-45. <https://doi.org/10.23874/amber/2016/v7/i1/121347>

- Nganga, G. (2021). *Thousands deregistered amid further funding cuts*. University World News. <https://www.universityworldnews.com/post.php?story=20210525105205938>
- Ngenoh, D. C. (2020). *Influence of third-stream activities on university sustainability: A comparative study of Bidii and Zurii University* [Thesis, Strathmore University]. <http://hdl.handle.net/11071/12082>
- Nteere, K. K. (2021). The influence of quality service on customer satisfaction among the students of institutions of higher learning: A case of The Co-operative University of Kenya. *The Strategic Journal of Business & Change Management*, 8(2), 477–484. <http://dx.doi.org/10.61426/sjbcm.v8i2.2009>
- Odero, K. O. (2020). *Strategic Leadership and Performance of University Alumni Associations in Kenya* [Master's thesis, University of Nairobi]. University of Nairobi Digital Repository. <http://erepository.uonbi.ac.ke/handle/11295/153624>
- Odhambo, L. (2020). *Challenges facing non-governmental organizations in financial resource mobilization in Kisumu central sub-county, Kenya*. [Doctoral Dissertation, UoN]. <http://erepository.uonbi.ac.ke/handle/11295/153984>
- Oganisjana, K., & Koleda, N. (2015). Challenges in Learning for Company's Financial Viability Assessment and Management. *Verslas: Teorija Ir Praktika*, 16(2), 195–204. <https://www.ceeol.com/search/article-detail?id=285052>
- Ogunbodede, K. F., Atchimi, I. A., & Agina-Obu, R. (2022). Students' Perception and Use of Digital Resources in University of Africa, Bayelsa State, Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 13(2), 75–87. <https://dx.doi.org/10.4314/ijikm.v13i2.6>
- Okuto, E., Githinji, L. M., & Agembo, W. (2018). Devolved Governance and Financial Resource Mobilization in County Governments in Kenya: A Case of Kiambu County. *The international journal of humanities & social studies*, 6(9), 16-30. <https://www.researchgate.net/publication/328079833>
- Omerzel, D. G. (2021). *Challenges in commercialization of intellectual property at universities: A European perspective*. *Journal of Innovation and Entrepreneurship*, 258

10(1), 1-16. <https://doi.org/10.1186/s13731-021-00142-z>

Omona, W. (2019). Supervising Phd students in a resource constrained setting: challenges and prospects. *IJSSHE-International Journal of Social Sciences, Humanities and Education*, 3(2), 1-10. <https://core.ac.uk/download/pdf/228734627.pdf>

Otiende, W., Omolo, J. W., Thuo, J. K., & Wagude, J. (2024). Influence of Organizational Resources on the Performance of Public Universities in Kenya. *African Journal of Empirical Research*, 5(1), 311–318. <https://doi.org/10.51867/ajernet.5.1.30>

Owens, S., & Suh, E. K. (2024). Queering the Language of Inclusion: Implications from a Content Analysis of Inclusion Language in Developmental Education Scholarship. *Journal of School Leadership*, 34(3), 295–316. <https://doi.org/10.1177/10526846231209433>

Petlenko, Y., Stavitsky, A., & Kharlamova, G. (2021). Is the endowment fund a panacea for the financial autonomy of classical universities in Ukraine? *Problems and Perspectives in Management*, 19, 396–407. [https://doi.org/10.21511/ppm.19\(3\).2021.32](https://doi.org/10.21511/ppm.19(3).2021.32)

Pilbeam, C. (2012). Pursuing financial stability: A resource dependence perspective on interactions between pro-vice chancellors in a network of universities. *Studies in Higher Education*, 37(4), 415–429. <https://doi.org/10.1080/03075079.2010.520696>

Riachi, C. K. (2021). *Determinants of financial sustainability of universities: A case of Strathmore university* [Thesis, Strathmore University]. <http://hdl.handle.net/11071/12513>

Ricceri, F. (2008). *Intellectual Capital and Knowledge Management* (0 ed.). Routledge. <https://doi.org/10.4324/9780203929308>

Rodrigues, A. J., Wainaina, G., & Mwangi, E. W. (2008). *Income generation at public universities: A case of the University of Nairobi Enterprises and Services Limited* [Paper Presentation]. 4th International Operations Research Society of Eastern Africa (ORSEA) Conference, University of Nairobi, Kenya.

<http://erepository.uonbi.ac.ke/handle/11295/13845>

- Rogers, W. P. (1974). *Guidelines and criteria for identification and land-use controls of geologic hazard and mineral resource areas* (No. 6-8). Colorado Geological Survey, Department of Natural Resources, State of Colorado.
- Rohayati, M., Najdi, Y., & Williamson, J. (2016). Philanthropic Fundraising of Higher Education Institutions: A Review of the Malaysian and Australian Perspectives. *Sustainability*, 8(6), 541. <https://doi.org/10.3390/su8060541>
- Rubarema, P. (2021). *Financial Resource Mobilization and Accountability in Local governments of Uganda: A Case Study of Kabale District Local Government* (Doctoral dissertation, Kabale University). <https://idr.kab.ac.ug/bitstream/handle/20.500.12493/577/>
- Rwebiita, M. K. (2020, June 27). Worrying state of Private Universities, a big concern. *New Vision*. <https://www.newvision.co.ug/news/1514096/worrying-private-universities-concern>
- Saha, N., Sáha, T., & Sáha, P. (2020). Entrepreneurial Universities Perception and Regional Innovation System: Do They Really Create an Environment for Regional Economic Development? *Journal of Entrepreneurship Education*, 23(2), 1–535. <https://www.abacademies.org/abstract/entrepreneurial-universities-perception-and-regional-innovation-system-do-they-really-create-an-environment-for-regional-9086.html>
- Sánchez, M. P., & Elena, S. (2006). Intellectual capital in universities: Improving transparency and internal management. *Journal of Intellectual Capital*, 7(4), 529–548. <https://doi.org/10.1108/14691930610709158>
- Sazonov, S. P., Kharlamova, E. E., Chekhovskaya, I. A., & Polyanskaya, E. A. (2015). Evaluating Financial Sustainability of Higher Education Institutions. *Asian Social Science*, 11(20), p34. <https://doi.org/10.5539/ass.v11n20p34>
- Sen, A., & Leong, C. K. C. (2019). Technology-Enhanced Learning. In A. Tatnall (Ed.), *Encyclopedia of Education and Information Technologies* (pp. 1–8). Springer

- International Publishing. https://doi.org/10.1007/978-3-319-60013-0_72-1
- Sherstobitova, A. A., Glukhova, L. V., Gudkova, S. A., Korneeva, E. N., Filippova, O. A., & Lyubivaya, T. G. (2021). The Concept of Transition from Smart University to Smart Business in Digital Economic Environment. In V. L. Uskov, R. J. Howlett, & L. C. Jain (Eds.), *Smart Education and e-Learning 2021* (pp. 273–284). Springer. https://doi.org/10.1007/978-981-16-2834-4_23
- Shipway, I. (2009). Modern Portfolio Theory. *Trusts & Trustees*, 15(2), 66–71. <https://doi.org/10.1093/tandt/ttn129>
- Sifuna, D. N. (2017). University of Nairobi: Review of the Flagship Role in Higher Education in Kenya. In D. Teferra (Ed.), *Flagship Universities in Africa* (pp. 197–240). Springer International Publishing. https://doi.org/10.1007/978-3-319-49403-6_6
- Tamrat, W., & Teferra, D. (2020). Private higher education in Ethiopia: Risks, stakes and stocks. *Studies in Higher Education*, 45(3), 677–691. <https://doi.org/10.1080/03075079.2019.1582010>
- Teferra, D. (2016). African flagship universities: Their neglected contributions. *Higher Education*, 72(1), 79–99. <https://doi.org/10.1007/s10734-015-9939-x>
- Tlali, P. G. (2018). *Learners' and teachers' perspectives about causes of poor argumentative English essay writing* (Unpublished Masters Dissertation). The National University of Lesotho
- Todericiu, R., & Șerban, A. (2015). Intellectual Capital and its Relationship with Universities. *Procedia Economics and Finance*, 27, 713–717. [https://doi.org/10.1016/S2212-5671\(15\)01052-7](https://doi.org/10.1016/S2212-5671(15)01052-7)
- Tran, Q. N., Phung, T. M. T., Nguyen, N. H., & Nguyen, T. H. (2024). Financial Knowledge Matters Entrepreneurial Decisions: A Survey in the COVID-19 Pandemic. *Journal of the Knowledge Economy*, 15(1), 2274–2297. <https://doi.org/10.1007/s13132-023-01137-8>

- Tumusiime, E. I. (2022). Resource mobilisation and allocation priorities on knowledge production in universities in Uganda: An empirical study. *Kabale University Interdisciplinary Research Journal*, 1(3), 31–47. <http://196.43.162.73/index.php/1/article/view/24>
- Umutesi, A. M. (2019). Alternative Income Generating Activities for Financial Sustainability of universities. *Cradle of Knowledge: African Journal of Educational and Social Science Research (The)*, 7(3), 115-121 <https://www.ajol.info/index.php/ajessr/article/view/239679>
- UPCEA and MindEdge Learning. (2024). *Doing More with Less: Strategies for Revenue Growth and Efficiency in universities*. <https://upcea.edu/doing-more-with-less>
- Vasi, I. B., & King, B. G. (2012). Social Movements, Risk Perceptions, and Economic Outcomes: The Effect of Primary and Secondary Stakeholder Activism on Firms' Perceived Environmental Risk and Financial Performance. *American Sociological Review*, 77(4), 573–596. <https://doi.org/10.1177/0003122412448796>
- Visvizi, A., & Daniela, L. (2019). Technology-Enhanced Learning and the Pursuit of Sustainability. *Sustainability*, 11(15), 4022. <https://doi.org/10.3390/su11154022>
- Wachira, R. N. (2018). Effect of Working Capital Management on Financial Sustainability of Government Owned Entities in the Ministry of Agriculture, Livestock and Fisheries (moalf), Kenya. *Strategic Journal of Business & Change Management*, 4(3), 147–175. <https://doi.org/10.61426/sjbcm.v4i3.498>
- Wakholi, B. (2023). *Effectiveness of Technology-Enabled Learning in Kenyan Universities: A Case of Kibabii University*. GRIN Verlag. <https://www.grin.com/document/1388926>
- Wanambiro, R. V. (2019). *Influence of intellectual capital initiatives on value creation in universities in Kenya* [Doctoral Dissertation, Jomo Kenyatta University of Agriculture and Technology]. JKUAT Digital Repository. <http://ir.jkuat.ac.ke/handle/123456789/5113>
- Wandera, T. V., & Sang, P. (2017). Management Practices and Sustainability of Non-Governmental Organisations Projects in Juba, South Sudan. *International Journal*

- of Finance*, 2(4), 38–57. <https://ir-library.ku.ac.ke/bitstreams/4b2fa6f8-b1cf-4bc1-9294-4d051300c9c4/download>
- Wang, M. S. (2011, January). Intellectual capital and firm performance. In *Annual conference on innovations in business & management* (pp. 1-26). The Center for Innovations in Business and Management, Practice London, UK. <https://www.cibmp.org/Papers/Paper566.pdf>
- Wanjala, G. J., Nchaga, A. M., & Nyambane, D. O. (2024). Availability and Utilization of University Funds and Implementation of the Core Mandates of Public Universities in Kenya. *Newport International Journal of Research in Education*, 4(1), 14–24. <https://www.researchgate.net/publication/379814708>
- Wanzala, W. (2017). Quest for Quality and Relevant Higher Education, Training and Learning in Kenya: An Overview. *Education Journal*, 2(2), 36. <https://doi.org/10.11648/j.edu.20130202.13>
- Wekesa, S., & Nzulwa, R. D. (2021). *Effect of Intellectual Capital on Organizational Performance in Public Universities in Kenya*. *International Journal of Business and Management*, 16(4), 112–122. <https://doi.org/10.5539/ijbm.v16n4p112>
- Woodhall, M. (2007). Changing Sources and Patterns of Finance for Higher Education: A Review of International Trends. *Higher Education in Europe*, 17(1), 141–149. <https://doi.org/10.1080/0379772920170110>
- Yu, M. (2022). Technology-Enhanced Education. In K. A. A. Gamage & N. Gunawardhana (Eds.), *The Wiley Handbook of Sustainability in Higher Education Learning and Teaching* (pp. 133–151). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781119852858.ch7>

APPENDICES

Appendix I: Research Questionnaire

I am conducting a study in order to determine the effects of financial resource mobilization strategies on financial sustainability of universities in Kenya gathering information from Registrars in charge of Administration and Finance Officers in Universities Kenya.

Kindly fill out all parts of this questionnaire. I guarantee you that all the information provided will be treated with utmost confidentiality.

Thank you.

PART I: Background Information

What is your gender?

- 1) Is your University Private or public?.....
- 2) How old is your university?

Age	Tick ☐ as Appropriate
Less than 5 years old	
Between 6 to 10 years	
Over 11 years	

- 3) Please indicate the student population in your university

Student Range	Tick ☐ as Appropriate
Less than 5,000 students	
Between 5,001 to 10,000 Students	
Between 10,001 to 15,000 Students	
Between 15,001 to 25,000 Students	
Between 25,001 to 30,000 Students	
Above 30,000 students	

4) What is your staff population?.....

5) Please indicate the University's Average Annual Budget in Ksh?

PART II:

A) BUSINESS UNITS

Business units affect university sustainability as sources of alternative revenue streams.

Please indicate your level of agreement with the following statements on a scale of 1 to 5, where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

(Tick✓ as appropriate)

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A1	Research and consultancy gives the institution reasonable Revenues					
A2	The University has entered into corporate alliances which has monetary value.					
A3	Professional Dev Centers or short courses generate sufficient revenues for the University .					
A4	University uses Intellectual Property and patents to generate income					
A5	General Production units e.g., farming give university reasonable revenues					
A6	Asset driven revenues e.g., rentals and hire form part of the revenue bases of the University					

SECTION B: FINANCE MANAGEMENT PRACTICES

Below are finance management practices that the university uses to control and secure financial resources. Please indicate your level of agreement with the following statements on a scale of 1 to 5, where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
B1	The university effectively manages its cash flow to ensure liquidity and smooth operations.					
B2	The university has an effective budgetary control system that ensures financial discipline and accountability.					
B3	The university's financial reports are accurate, timely, and align with standard accounting practices.					
B4	Financial audits are conducted regularly, ensuring transparency and accountability in the university's finances.					
B5	The university has well-managed investment practices that contribute to long-term financial growth and stability.					
B6	The university has a robust financial risk management system that helps mitigate financial instability.					

SECTION C: ENDOWMENT FUNDS MOBILIZATION

Indicate the extent to which you agree that your Institution relies on the following methods of Endowment fund mobilization on a scale of 1 to 5, where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree. (Tick✓ as appropriate)

	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
C1	The University has Fund raising mobilization activities in place					
C2	Charitable donations form part of the income of the University					
C3	The University has Philanthropy support for its projects					
C4	Scholarship funds mobilizations net significant revenues					
C5	Alumni Fund Mobilization is done for the University					
C6	Endowment funds policy is in place and guides the resource mobilization					

SECTION D: INVESTMENT IN TECHNOLOGY ENHANCED LEARNING

Universities have done deliberate investment in technology enhanced learning in order to ensure their financial sustainability. Please indicate your level of agreement with the following statements on a scale of 1 to 5, where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree.

	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
D1	The institution has invested in a modern Learning Management System. (LMS)					
D2	The University has increased investment in ICT infrastructure that supports online learning					
D3	The University has continuously invested more in bandwidth expansion and reliable power sources					
D4	The University has continuously invested in learner empowerment tools					
D5	The University has sought accreditation for online learning					
D6	The University has an approved internal online teaching policies/framework					

SECTION E: INTELLECTUAL CAPITAL

Institutions employ components of intellectual capital for financial sustainability namely; Human Capital, Customer capital, Relational Capital and Structural Capital. Please indicate your level of agreement with the following statements on a scale of 1 to 5, where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree. (Tick✓ as appropriate)

	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
E1	The university effectively develops and utilizes the skills, knowledge, and expertise of its staff to achieve its goals.					
E2	The university has strong relationships with students, alumni, and other key stakeholders, contributing to its success.					
E3	The university has established valuable partnerships with external organizations, government bodies, and the community.					
E4	The university has robust systems, processes, and organizational structures that support its operations and long-term growth.					
E5	Customer loyalty has been attained through customer service delivery process					
E6	Customer capital is treated like a critical asset					

SECTION F: FINANCIAL SUSTAINABILITY

Financial sustainability of the Universities is influenced by key factors. Please indicate your level of agreement with the following statements on a scale of 1 to 5, where: 1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, and 5 - Strongly Agree. (Tick✓ as appropriate)

	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
F1	The university has sufficient liquidity to meet its short-term financial obligations without difficulties.					
F2	The university effectively manages its debt, ensuring a sustainable level of borrowing to finance its operations.					
F3	The university efficiently utilizes its assets to generate revenue and improve financial performance.					
F4	The university's financial performance ratios indicate strong profitability and overall financial health.					
F5	The university maintains adequate reserves to cover unforeseen financial challenges and ensure long-term stability.					
F6	The university has diverse revenue streams such as tuition fees, government funding, research grants, donations, and investment income.					

Appendix II: Secondary Data Collection Sheet

Period / Year	Financial Sustainability					Total Assets
	Net Income	Total Revenue	Current Assets	Current Liabilities	Total Debt	
2018						
2019						
2020						
2021						
2022						

Appendix III: List of Public and Private Universities in Kenya

	NAME OF UNIVERSITY / UNIVERSITY COLLEGE	YEAR ACCREDITATION
1	University of Nairobi	Chartered – 2013
2	Moi University	Chartered – 2013
3	Kenyatta University	Chartered – 2013
4	Egerton University	Chartered – 2013
5	Jomo Kenyatta University of Agriculture and Technology	Chartered – 2013
6	Maseno University	Chartered – 2013
7	Masinde Muliro University of Science and Technology	Chartered – 2013
8	Dedan Kimathi University of Technology	2012
9	Chuka University	2013
10	Technical University of Kenya	2013
11	Technical University of Mombasa	2013
12	Pwani University	2013
13	Kisii University	2013
14	University of Eldoret	2013
15	Maasai Mara University	2013
16	Jaramogi Oginga Odinga University of Science and Technology	2013
17	Laikipia University	2013
18	South Eastern Kenya University	2013
19	Meru University of Science and Technology	2013
20	Multimedia University of Kenya	2013
21	University of Kabianga	2013
22	Karatina University	2013
23	Kibabii University	2015
24	Rongo University	2016

25	The Co-operative University of Kenya	2016
26	Taita Taveta University	2016
27	Murang'a University of Technology	2016
28	University of Embu	2016
29	Machakos University	2016
30	Kirinyaga University	2016
31	Garissa University	2017
32	Alupe University	2022
33	Kaimosi Friends University	2022
34	Tom Mboya University	2022
35	Tharaka University	2022
36	National Defense University-Kenya	2021
37	Turkana University College	2016
38	Bomet University College	2017
39	Koitaleel Samoei University College	2018
40	Mama Ngina University College	2021
41	University of Eastern Africa, Baraton	1991
42	Catholic University of Eastern Africa (CUEA)	1992
43	Daystar University	1994
44	Scott Christian University	1997
45	United States International University	1999
46	Africa Nazarene University	2002
47	Kenya Methodist University	2006
48	St. Paul's University	2007
49	Pan Africa Christian University	2008
50	Strathmore University	2008
51	Kabarak University	2008

52	Mount Kenya University	2011
53	Africa International University	2011
54	Kenya Highlands Evangelical University	2011
55	Great Lakes University of Kisumu	2012
56	KCA University	2013
57	Adventist University of Africa	2013
58	KAG EAST University	2016
59	Umma University	2019
60	Presbyterian University of East Africa	2020
61	Aga Khan University	2021
62	Kiriri Women's University of Science and Technology	2022
63	The East African University	2022
64	Zetech University	2022
65	Lukenya University	2022
66	Hekima University College	1993
67	Tangaza University College	1997
68	Marist International University College	2002
69	GRETSA University	2006
70	Management University of Africa	2011
71	Riara University	2012
72	Pioneer International University	2012
73	International Leadership University	2014
74	RAF International University	2016
75	AMREF International University	2017
76	Uzima University	2020

Appendix IV: Ethical Clearance Letter



KENYA METHODIST UNIVERSITY

P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171

FAX: 254-64-30162
EMAIL: INFO@KEMU.AC.KE

January 22, 2024

KeMU/ISERC/BUS/04/2024

HUMPHREY MWENDA MURUGU
BUS-4-0120-1/2022

Dear Humphrey,

SUBJECT: FINANCIAL RESOURCE MOBILIZATION STRATEGIES, INTELLECTUAL CAPITAL AND FINANCIAL SUSTAINABILITY OF UNIVERSITIES IN KENYA

This is to inform you that Kenya Methodist University Institutional Scientific Ethics and Review Committee has reviewed and approved your research proposal. Your application approval number is KeMU/ISERC/BUS/04/2024. The approval period is 22nd January, 2024— 22nd January 2025.

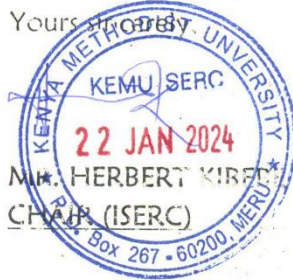
This approval is subject to compliance with the following requirements:-

- I. Only approved documents including (informed consents, study instruments, MTA) will be used.
- II. All changes including (amendments, deviations, and violations) are submitted for review and approval by Kenya Methodist University Institutional Scientific Ethics and Review Committee.
- III. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KeMU ISERC within 72 hours of notification.
- IV. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to KeMU ISERC within 72 hours.

- V. Clearance for export of biological specimens must be obtained from relevant institutions.
- VI. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- VII. Submission of an executive summary report within 90 days upon completion of the study to KeMU ISERC.

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

Yours sincerely,



Appendix V: Introduction Letter to NACOSTI



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

DIRECTORATE OF POSTGRADUATE STUDIES

January 22, 2024

Commission Secretary

National Commission for Science, Technology and Innovations

P.O. Box 30623-00100

NAIROBI

Dear Sir/Madam,

RE: HUMPHREY MWENDA MURUGU – (REG. NO. BUS-4-0120-1/2022)

This is to confirm that the above named person is a bona fide student of Kenya Methodist University, in the KeMU Business School, Department of Business Administration undertaking a Doctoral Degree in Business Administration and Management. He is conducting research on; “Financial Resource Mobilization Strategies, Intellectual Capital and Financial Sustainability of Universities in Kenya”.

We confirm that his research proposal has been presented 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,


22 JAN 2024
Dr. John M. Muchiri (PhD)
Dean, Postgraduate Studies

Cc: Dean KeMU Business School

CoD, BA

Program Coordinator - KeMU Business School

Student Supervisors

Appendix VI: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 640065	Date of Issue: 06/February/2024
RESEARCH LICENSE	
	
This is to Certify that Mr., Humphrey Mwenda 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 Meru on the topic: FINANCIAL RESOURCE MOBILIZATION STRATEGIES, INTELLECTUAL CAPITAL AND FINANCIAL SUSTAINABILITY OF UNIVERSITIES IN KENYA, for the period ending : 06/February/2025.	
License No: NACOSTI/P/24/32851	
640065 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	