FINANCIAL RESOURCE MOBILIZATION STRATEGIES AND FINANCIAL SUSTAINABILITY OF UNIVERSITIES IN KENYA

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Financial Resource Mobilization Strategies and Financial Sustainability of Universities in Kenya

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DECLARATION

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

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This thesis has been submitted for examination with our approval as the university supervisors

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DEDICATION

This work is dedicated to my mother, Mrs. Antonina Chumba, Zablon and Nicholas who have meant and continue to mean so much to me. Secondly, to my late daughter Yvonne and my late grandmother Marsela Ojuka (Mama), whose love for me knew no bounds and whose memories continue to regulate my life.

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Dr Oluoch Oluoch with the most incredible combination of decisive wit, and intellect, boundless energy and commitment helped me shape this thesis as a meaningful academic treatise about a fundamental practical issue: Investigating the funding strategies that are likely to guarantee the fiscal sustainability of institutions of higher learning in Kenya.

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ABBREVIATIONS AND ACRONYMS

ANOVA   Analysis of Variance

AUCC   African University College of Communications

CIDA   The Canadian International Development Agency

DVC   Deputy Vice Chancellor

EUA   European University Association

GDP   Gross Domestic Product

GoK   Government of Kenya

HED   Higher Education for Development

ICT   Information and Communication Technology

IHE   Institute of Higher Education

IOs   International Organizations

IPAs   International Public Administrations

K-R   Kunder-Richardson

MFIs   Micro-Finance Institutions

MM   Modigliani and Miller

MoE   Ministry of Education

MoS& T   Ministry of Science and Technology

NGOs	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
PPP	Public-Private Partnerships
R & D	Research and Development
RBV	Resource-Based View Theory
SACCO	Savings and Credit Cooperative
SD	Standard Deviation
SJ	San Juan Nuevo
STEM	Science, Technology, Engineering and Mathematics
SWOT	Strengths, weaknesses, opportunities and threats
SWOT	Strengths, Weaknesses, Opportunities and Threats
UK	United Kingdom
UNES	University of Nairobi Enterprise Services
USA	United States of America
USAID	United States Agency for International Development
VIF	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Assets: Refers to economic resources; that are tangible or intangible and can be owned or controlled to produce value, in this case, the resources held by the university to produce positive economic value (Pandey, 2008; Shipway, 2009).

Consultancy: Refers to the provision of expert knowledge to a third party for a fee (Vasi &King, 2012).

Financial Sustainability: Ability to maintain or improve financial viability over time to assure continued and long-term achievement of mission, goals and objectives of an organization (Shipway, 2009; Barrow &Rouse, 2016).

Investment Income: Is revenue that comes from interest payments, dividends, and capital gains collected upon the sale of a security or other assets, and any other profit made through an investment vehicle of any kind within the university (Shipway, 2009; Bomberg &McEwen, 2012)

Linkages: Relationships and interactions between tasks, functions, departments in a university and other organizations, which promote flow of information, ideas and foster integration in the achievement of shared objectives to promote university education (Vasi &King, 2012).

Partnership: An arrangement where parties or in the context of this study universities, known as partners, agree to cooperate to advance their mutual interests of promoting university education. The partners in a partnership may be individuals, businesses, interest-based research organizations, schools in a university, governments through ministries or combination of these categories. They partner to increase the likelihood of each achieving their mission and to amplify their reach (Vasi & King, 2012).

| **Resource Mobilization:** | It refers to all activities involved in securing new and additional resources for your organization. It also involves making better use of existing resources. Resource mobilization is often referred to as 'New Business Development. It is the enabler of the activity that not only satisfies the need, but also satisfies the giver that the resources have been wisely and effectively used (Vasi & King, 2012). |

ABSTRACT

Universities in Kenya have developed various strategies to mobilize resources to mitigate against the difficulties arising from the reduction of government funding and the pressing need for the institutions to cover part of their costs. This change in strategy is in pursuit of financial sustainability for the institutions of higher learning. Despite the tremendous range of ways that exist to mobilize resources, the rising number of students, coupled with the increasing cost of teaching and research, continues to pose a challenge in the quest to identify sustainable funding models. This study assessed the effect of financial resource mobilization strategies on the fiscal sustainability of universities in Kenya. The specific objectives were to critically evaluate the influence of five strategies of resource mobilization on the financial sustainability of universities in Kenya. These were the fees collection strategy, donor funding strategy, investment strategy, consultancy funding strategy, and the linkages and partnership strategy. The study adopted quantitative and cross-sectional correlational research design. Quantitative data were analyzed using STATA and were summarized using bar charts, frequencies and percentages. The qualitative data were analyzed and presented using narrative description. The study relied on the resource mobilization theory, knowledge-based view theory, Modern Portfolio theory, Modigliani-Miller theory, Regression Discontinuity Theory of Education Interventions and resource dependency theory. This census study comprised a population of all 71 universities in Kenya as of 31st December 2018. The primary and secondary data were collected using a structured questionnaire and data-collection sheet respectively. This study used 10% (N = 7) of the target population for pilot testing of the validity and reliability of the research instruments. Accordingly, the Cronbach's $\alpha > .75$, for all the variables of the study hence met the conditions of reliability. The descriptive and statistics were used. The findings of simple linear regression analysis indicated that all the five resource mobilization strategies yielded a statistically significant positive effect on financial sustainability. Similarly, the results of multiple linear regression analysis exhibited a statistically significant influence of all the resource mobilization strategies on financial sustainability. The findings therefore provide meaningful insights regarding how stakeholders in the higher education sector can utilize various resource mobilization strategies especially in order to realize improved financial sustainability of institutions of higher learning in Kenya. The limitation encountered during the study was the combination of the public and private universities into the study yet the two have some differences in the financing structures. This however made the study more comprehensive for generalization to the entire country and countries with similar regulatory regimes. This study recommends that universities put in place mechanisms of ensuring that they have identified a team of researchers who can develop fundable proposals to secure sufficient donor funding in an effort to enhance financial sustainability. Further, universities need to establish a consortium of researchers through partnerships and linkages to benefit from their diverse expertise and innovations that will lead to intellectual properties for financial sustainability.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Financial sustainability of an institution reflects how well the management team of that institution makes use of the resources at their disposal towards creating value for their various stakeholders as per their mandate so as to maintain the institution as a going concern (Kinde, 2012). In the contemporary world, public universities across the globe are increasingly facing dwindling financial support from governments and are therefore under pressure to look for other ways of ensuring that they remain financially sustainable. The reducing government support is a direct consequence of competition for government revenue from other priorities such as healthcare, infrastructure development, public order as well as poverty alleviation programmes. At the same time, private universities are expected to be financially sustainable from their operations and therefore must look for other means of raising revenues besides their promoters (Kinde, 2012).

Efforts aimed at realizing financial sustainability have invariably been preceded by financial resource mobilization strategies. The idea of resource mobilization has to do with the amount of effort undertaken to activate network ties in the quest to realize the resource mobilization benefits in an organizational context (Thornton *et al.*, 2019). Nabulime (2021) defines resource mobilization as the process used in assembling resources as well as activities which are involved in securing new and additional resources in an organization. This definition concurs with that by Michael, Kinyua and Mwamba (2021) who looked at resource mobilization as a set of activities executed in securing new and additional resources for an organization. Additionally, resource mobilization has to do with the steps undertaken with the aim of collecting additional funds to finance development activities (Mohsin, 2022). Based on the foregoing definitions, it can therefore be synthesized that financial resource mobilization has to do

with concerted efforts made by organizations towards achieving financial sustainability by putting in place mechanisms aimed at improving their financial status.

Progressively, a wide range of views are presented with regard to realisation of financial resource mobilization within organizations, with Gebru (2020) outlining the significance of applying financial management principles in ensuring optimal mobilization of financial resources. Rubarema (2021) argues that effective financial resource mobilization requires a high level of professionalism. Moreover, some scholars argue that financial resource mobilization can yield better organizational performance (Asawo, Aseey, & Chandi, 2021). Additionally, there is a need to make use of better revenue collection and utilisation practices in order to realize effective financial resource mobilization strategies (Kiambi *et al.*, 2022). Moreover, other academics recognised the need to utilise available resources within institutions in the quest to realize optimal effective mobilization of financial resources (Lutempo, 2022). Accordingly, these and other similar studies offer important insights with regard to what factors need to be considered for an organization to realize successful mobilization of financial resources. For instance, the need to tap into the existing human and material resources is an important pathway towards realising prudent use of financial resources within organizations.

Institutions of higher learning can utilize various financial mobilization strategies in the quest to realize financial sustainability. Bondzi–Simpson and Agomor (2021) while reflecting on the financing of public universities in Ghana underscored the significance of adopting entrepreneurial approaches through the commercialization of academic services to generate resources for sustainable funding. Lutempo (2022) makes a case for the need for institutions of higher learning to come up with innovative strategies to bridge the funding gap due to reducing government support and improve financial sustainability in institutions of higher learning. Tumusiime (2022) in a study on the financial resource mobilization strategies in Ugandan universities opined that funded research projects and collaborations between universities and industries can be used as ways of mobilizing financial resources for universities.

The nexus between financial resource mobilization and organizational outcomes has remained at the centre stage of various empirical studies. This is evidenced in studies citing improved internal efficiency as a result of utilising wide-ranging financial resource mobilization strategies (Wakoli, & Kitainge, 2019). Additionally, this kind of relationship is also reaffirmed in studies pointing out that financial resource mobilization strategies can improve on service delivery as well as revenue collection in organizations (Kiambi *et al.*, 2022). Progressively, the nexus between financial resource mobilization and financial sustainability has been exhibited in prior studies (Gebru, 2020). This is also corroborated in recent studies suggesting how financial sustainability can be achieved following implementation of various financial resource mobilization practices (Kobugabe & Rwakihembo, 2022).

Financial sustainability remains a key focal point in empirical studies outlining the significance of organizational performance from the financial perspective. Progressively, a wide range of conceptualizations have been presented with regard to the idea of financial sustainability with some researchers taking note that this has to do with a situation where the financial system is functioning properly (Aghaie, Sokhanvar & Yousef, 2021). Rasooli *et al.* (2021) hold a view that financial sustainability has to do with situations where financial crises or external shocks do not affect the core functioning of a financial system in an organization. Additionally, the idea of financial stability can also be viewed as the smooth functioning of the markets which creates the financial systems within a given organizational context (Nugroho, Adam, Widiyanti & Sulastri, 2021).

Overtime, evidence from prior empirical studies suggest that a wide array of approaches have been utilized in the quest to objectively measure financial sustainability. For instance, financial stability can be assessed in terms of the organization's return on assets(ROA), return on capital as well as return on equity (ROE). Further, use of various financial scoring matrices can be applied in measuring financial stability (Lyman-Torres, 2018; Imhanzenobe, 2019; Quartey & Kotey, 2019). These approaches in measuring financial stability also bear similarities with recent studies which take note that financial

stability can be proxied by use of return on assets (ROA), as well as financial stress indicators (FSI) (Nugroho *et al.*, 2021). Arifin *et al.* (2021) also shared the same point of view by taking note that financial stability can be measured by use of return on assets in addition to other approaches such as insolvency risk (Z-score) and return on equity (ROE). Kobugabe and Rwakihembo (2022) contend that both liquidity as well as net income can be used as indicators of financial stability within an organization. This study therefore borrowed from these conceptualizations in coming up with measures for financial sustainability as an outcome of various financial resource mobilization practices in the selected Kenyan universities.

Financial sustainability has a lot to do with how well an organization performs its value-adding activities in order to generate enough resources from its clients so as to remain in operation into the foreseeable future. Corporate objectives of stakeholder welfare maximisation and corporate wealth maximisation can only be achieved in the long run if the organizations are financially sustainable. In a nutshell, financial sustainability is the ability to maintain or improve financial viability over time to assure continued and long-term achievement of mission, goals and objectives of an organization (Shipway, 2009; Barrow & Rouse, 2016). Institutions of higher learning are expected to offer higher education that would support the socio-economic development of a nation. Therefore, to remain relevant in this role both in the short run and the long run, they should be financially sustainable.

Kotha and George (2012) pointed out that university education is considered to be one of the most influential and critical success-factors for individuals and the society in general. To deliver on this mandate, the institutions of higher learning need adequate human and capital resources, both of which hinge on financial resources and their sustainability. Financial resources, like all these other resources, are however finite, hence the need for these institutions to develop various financial resource mobilization strategies to meet their financial obligations as and when they fall due. Ismail, Da Wan, and Ibrahim (2018) while drawing on the experiences of universities in Malaysia highlighted the significance of revenue diversification efforts aimed at improving

financial stability in public universities. They also emphasized the need to have government and higher education partner to initiate management reforms towards improving financial performance.

Leal-Filho *et al.* (2018) contend that lack of adequate resources can be one of the challenges in the quest to realize financial sustainability in institutions of Higher Education. As such, efforts aimed at improving financial sustainability are justifiable and make a case for the need for institutions of higher learning to come up with ways and means to amass necessary financial resources in order to realize financial sustainability. Al-Ghaswyneh (2020) used a case of Northern Border University to underscore the criticality of maintaining a good reputation of institutions of higher learning through formulating strategies that boost financial stability. In this regard, the idea of marketing academic services can be one of the key sources of revenue for universities. Based on the findings of the study, training and educational courses were significant contributors to the financial sustainability of the universities alongside other channels of revenue generation such as scientific research, consultancy services, as well as conferences and seminars.

AI-Youbi and Zahed (2021) provided reflections on how universities in Saudi Arabia realize improved financial sustainability through a wide range of mechanisms spelt out in the bylaws at the beginning of the year 2020. The introduction of the bylaws provided justification for the need for universities to tap into the revenues generated from the tuition as well as research and other consultancy services. The study also covered the idea of provision of revenue from the state subsidy as well as donations and grants as means of financial resource mobilization. Such approaches of revenue generation were also echoed by AI-Youbi, Zahed, and Atalar (2021) who made a case for the need to use a wide range of approaches towards realising financial sustainability without compromising the quality of the training programmes offered by these institutions.

In Zambia, Lutempo (2022) analysed some of the financial resource mobilization strategies used by public secondary schools in Lusaka district. The findings of the study

justified the need for grants as a source of revenue in secondary schools. Whereas the context of the study was not institutions of higher learning, the significance of resource mobilization strategies such as grants comes to the fore as critical in raising financial resources and contributing to financial stability. This approach can also be replicated in institutions of higher learning in order to realize improved financial stability, which is one of the objectives of this study.

Kobugabe and Rwakihembo (2022) recently analysed the nexus between financial resource mobilization and financial sustainability by drawing on the experiences of Uganda private universities. A positive correlation exhibited between financial resource mobilization strategies and financial stability was evidence enough of the need for universities and other institutions of higher learning to tap into a wide variety of mobilizing financial resources with the aim of realizing improved financial performance. As such, the quest to realize financial sustainability within universities can be achieved through utilisation of wide-ranging financial resource mobilization strategies.

In Kenya, Wakoli and Kitainge (2019) analysed the internal efficiency of technical training institutions in Bungoma County and how it was impacted upon by various financial resource mobilization strategies. The study findings reaffirmed the existence of a positive relationship between financial resource mobilization strategies and internal efficiency of the sampled institutions. The scholars also strongly recommended the need to have automation of financial systems in public technical institutions in the quest to improve financial performance. This study makes a similar suggestion and discusses how this can affect financial stability within the context of both private and public universities in Kenya.

Development of policy framework has been critical in terms of ensuring a structured way of tapping into various financial resources for universities. In this regard, a policy document in Kenya titled *Sessional Paper No. 1 of 2005 on Policy Framework for Education, Training and Research* clearly stated that university education was particularly expensive to the government and unsustainable when viewed against the

available resources (Rodriguez, Wainaina & Mwangi, 2006; Reeves, Herrington & Oliver, 2015). At the university level, significant strides have been made towards achieving financial sustainability. Egerton University for instance has embarked on strategies such as development of grant proposals, increasing student enrolment, establishment of public-private partnerships, as well as investment in automation all of which align with the university's policy framework dubbed *The Resource Mobilization* (Egerton University, 2015).

University of Eldoret through a policy framework on financial resource mobilization has embarked on various approaches aimed at leveraging funding using approaches such as improved internal savings; bilateral linkages, strategic partnerships including public-private partnerships as well as establishment of the endowment fund among a series of measures aimed at mobilizing financial resources(University of Eldoret, 2015). Karatina University also established a resource mobilization directorate with the aim of generating funds for running the university. One such approach as to the strategy is to provide consultancy and advisory services alongside offering paid-for training to organizations as well as individuals. In this regard, the registration of the Karatina University Business Unit (KUBUNI) whose purpose is to provide consultancy and training is one such approach aimed at raising funding for the university (Karatina University, 2022).

Funding of universities throughout the world has witnessed dramatic challenges in the last decade of the 20th century and the first decade of the 21st century (Manuh, Gariba & Budu, 2007). These changes are in response to a worldwide phenomenon of the rising cost of university education, a rise which is higher than the corresponding rate of increase of the available revenues. To cope with reduced government funding, universities worldwide now generate additional sources of funds (Bomberg & McEwen, 2012). The emerging popular sources of financial resources are research grants, income from investments, sponsorship by philanthropists as well as fees collected from the university students (Bomberg & McEwen, 2012). It is however still not clear if the existing and emerging financial resources mobilization strategies and avenues have any

effect on the financial viability of universities. Therefore, this study set out to critically evaluate the effect of the various strategies for the mobilization of financial resources adopted by universities as they strive to ensure their financial sustainability.

Financial distress is yet another critical term in discussions revolving around financial sustainability. The question of financial distress basically refers to a situation where a firm experiences difficulty in paying off its financial obligations to their creditors (Helmold, 2021). Oktaria *et al.* (2021) define financial distress as liquidation downtown in financial situations in an organization. Put another way, the idea of financial distress can be termed as a situation where an individual corporation is unable to keep the promise of paying their debts on time (Rawal, Rastogi, Sharma & Rastogi, 2022). This is an agreement with studies which define financial distress as the inability of firms to fulfil their debt obligations (Julasaria & Mandal, 2022). Fai, Siew, and Hoe (2022) also concur with these definitions by pointing out that financial distress is a scenario in which companies lack sufficient cash flows in order to fulfil their debt obligations. Accordingly, the idea of financial distress becomes pertinent in the present study considering that financial resource mobilization aims to provide mechanisms of scaling down the financial distress in order to realize financial sustainability within the context of the selected universities.

The financial distress facing universities in Kenya have been problematized in earlier news reports. Munene (2019) noted that as of the year 2019, the public universities' debt stood at US$120 million (approximately KSh12 billion, at an exchange rate of KSh101 to the US dollar, the mean exchange rate as per the Economic Survey 2022 published by the Kenya National Bureau of Statistics). Business Daily (2021) reports that by the year 2021 the impact of Nairobi and Kenyatta University had a combined financial deficit of KSh4.3 billion which signified underlying cash flow problems at the institutions prompting the need to increase student fees. Further, data sourced from the Universities Fund (UF) indicate that the funding gap experienced in Kenyan public universities was close to KSh27 billion which has doubled within a period of two years – an increase of 107.7%. At the same time, the report suggested that capitation per student had reduced

by KSh35,616 within the period pushing for increased tuition and accommodation fees in the quest to fill the gap. These and other related reports provide evidence of the challenge of financial distress that ought to be addressed in the quest to stabilize the financial situation of various Kenyan universities. Accordingly, this justifies the need for a study to be conducted in order to reflect on financial sustainability in its antecedents including financial resource mobilization strategies.

The moderating effect of government grants on the relationship between financial resource mobilization and financial sustainability has been articulated in prior studies. A moderating variable refers to a variable that influences the direct or the strength of the relationship between independent and dependent variables (Liu, Mo, & Yin, 2021). A moderating variable can also be defined as an independent variable which has an influence on either the direction or strength or both of the relationship between an independent and an outcome variable (Al Shbail, Alshurafat, Ananzeh & Bani-Khalid, 2022). The moderating variable can serve the purpose of either strengthening or weakening the influence of independent variable and dependent variable (Rasyad, Iskandar, & Azis, 2020). This is in agreement with Kesumaningrum and Andriyanto (2021) who argued that moderating variable can strengthen or weaken the effect of the independent variable on the dependent variable.

On the basis of these definitions, the present study considers government grants as a moderating variable on the relationship between financial resource mobilization strategies and financial sustainability. This is in tandem with the findings of empirical study targeting higher education sector by Lucianelli and Citro (2017) who called for public funding for higher education sector in order to realize long-term financial sustainability. In other words, the fact that such funding mechanisms can affect long-term financial sustainability implies that the relationship between financial resource mobilisation and financial sustainability can be strengthened on account of presence of financing from the government in form of grants. Stachowiak-Kudła and Kudła (2017) while reflecting on financing mechanisms regulations in the context of higher education institutions in Europe underscored the significance of having proper regulatory

framework with regard to providing grants for such institutions in their quest to realize financial sustainability. This would imply that a favourable regulatory framework would strengthen the influence of financial resource mobilization strategies on financial sustainability of such institutions; while an unfavourable one who will lead to the contrary. Similarly, research on Australian universities funding mechanisms outline the significance of a policy framework that aims to achieve financial health in the institutions. As such, any policy framework such as provision of grants that could improve financial health of the institutions was strongly encouraged (Irvine & Ryan, 2019). The implication of this will be that a favourable policy framework strengthening the effect of financial resource mobilization strategies on financial sustainability of the selected institutions. Additionally, this is corroborated in the findings of a study among Malaysian public universities by Ahmad, Ismail, Siraj (2019) who pushed for the need to have public policy in favour of government grants in order to improve financial sustainability of public universities in the country.

Government grants given to universities continues to be at the centre stage of discussions relating to financing in public universities; particularly how it influences the relationship between financial resource mobilization strategies in the universities and the financial sustainability of these institutions. Recently, Song *et al.* (2022) examined how government subsidies in the higher education sector affects financial sustainability. The study illustrated that university and industry collaborations could benefit from subsidies from the government in order to come up with innovations aimed at generating finances in these institutions. Accordingly, such innovations as financial resource mobilization strategies could be strengthened as result of favourable government policy, which ultimately strengthens its influence on financial sustainability in the institutions. In order to build on the foregoing studies, this study analyses how government grants influence the relationship between financial resource mobilization strategies and the financial sustainability of the selected universities.

1.1.1 Global Perspective on Financial Resource Mobilization Strategies and Sustainability

Researchers worldwide have conducted studies on resource mobilization and their effect on the overall performance of firms. In European universities, as Vasi and King (2012) showed, financial sustainability is viewed as one of the main challenges on the overall agenda of the universities and tertiary education institutions. In this dynamic environment, it follows that the institutions which fulfil their mission are those with robust and sound financial structures. Put another way, with fiscal sustainability an institution has to be in a position to generate sufficient income for effective and efficient operations, including adequate investment in the academic and research, without relying on external funding sources such as the government (Bacq, Ofstein, Kickul & Gundry, 2015).

Esterman and Pruvot (2011) helpfully explained that the pursuit of financial sustainability in public universities is grounded on the following three pillars: The granular and thoughtful costing of all activities and projects; the diversity of the sources of income; and a regular, reliable and sufficient public funding with adequate accountability measures. The three pillars look at sustainability from two perspectives. These are the revenue perspectives that stress the importance of the income streams both from university own resources as well as the cost perspective that checks how the revenues of the institutions are utilised. These two perspectives make sense when there are proper internal controls to enhance accountability and very accurate costing structures for all the activities undertaken by the institutions of higher learning.

In Pakistan, Mirza and Javed (2013) examined the possible association between financial performance of a firm and the economic indicators, the corporate governance mechanisms, the ownership structure, the capital structure, and the risk management structures. The study noted that financial sustainability played a significant role in motivating employees because of its communication of future opportunities and prospects within the firm. The findings indicated that good corporate governance

practices enhance the performance of the firm. Good corporate governance ensures that shareholders' and stakeholders' rights are protected, and assures, in a way, the existence of proper disclosure and transparency mechanisms, plus a guarantee that the oversight body will fulfil its responsibilities. From this study that was based on public companies, it emerges that financial sustainability indicators are the same whether a firm is an educational institution or any other kind of a value adding entity.

The study by Mirza and Javed (2013) further identified firm characteristics as critical components of financial sustainability. For instance, large firms have been found to attract better managers and workers who, in turn, contribute to the performance of the firm. Mirza and Javed (2013) argued that optimal risk management in a firm promotes better financial sustainability. Past studies indicate that governance varies substantially among European universities and that the most highly productive European universities, such as those in the U.K. and Sweden, have substantial autonomy in most dimensions. Firm characteristics especially age and size have an implication on economies of scale, diseconomies of scale, economies of scope, diseconomies of scope as well as increasing and reducing returns of the organizations' variable productive resources (Mirza &Javed, 2013)

In Kenya however, a study by Ongore and Kusa (2013) indicated that Swiss universities have strong research performance despite having autonomy only on some dimensions. These Swiss universities have little control over their own budgets, even as they enjoy a high level of public funding with the authority to use resources flexibly to attract top researchers from all over the world. Further it is revealed that competition for basic research funding makes universities more productive because competition restructures the environment for universities, inducing them to focus on whether their research is compelling and productive.

Such a focus on competition for research grant funds motivates these institutions of higher learning to make strategic choices like resource mobilization that can improve the efficiency with which they turn research budgets into research results. But it is unclear

so far, as to what level the resource mobilization structures can be associated with the financial sustainability of universities. This is especially the case because of the varying resource mobilization structures among public and private universities on one hand and universities in developed and developing countries on the other (Ongore & Kusa, 2013).

When universities are considered in the financing context, much of their investments and resources are mostly financed by the government, sponsors and foundations for the purpose of their core mandate – teaching and research. This is particularly true for state sponsored universities which are dominant among the available universities in the world. But some of these activities have been recently recognized as revenue sources for these universities. This situation diverts the universities' role from its non-profit orientation to the commercial obligation measured by financial performance (Ongore & Kusa, 2013).

In a multinational organization system, Patz and Goetz (2017) studied resource mobilization structures and administrative structures in the United Nations system. The study acknowledged that in the contemporary world, many international public administrations (IPAs) consider successful resource mobilization as a key function. Many international organizations (IOs) depend, to a large degree, on reserved voluntary contributions which are often accompanied by substantial effort to maintain the resource levels, or to even increase these levels. The practitioners understand these dynamics, perhaps the reason why, in recent years, it has increasingly gained scholarly attention in the international relations and public administration field. Given the close interconnection of the rationale for such multilateral organizations as the United Nations and the role of universities in the world, the experience of the UN is easily relatable to that of the institutions of higher learning in general and universities in particular.

In Turkey, Demirhan and Anwar (2016) examined the factors affecting organizational performance in general and financial sustainability in particular during the international financial crisis which also affected the Turkish economy. The study categorized factors into internal and external so as to determine the strategic actions that firms needed to undertake to ensure financial sustainability. This was achieved through an environmental

scanning that involved the analysis of organizational strengths, weaknesses, opportunities and threats (SWOT). To improve overall firm performance, it is important that an organization uses its internal strengths to exploit new opportunities as they arise while at the same time minimizing the challenges arising from internal weaknesses and external threats. These would help an organization overcome the effects of a financial crisis and remain financially sustainable beyond financial and other crises.

To be considered financially sustainable, an institution should be in a position to cover its annual budgets without constraints (Pollinger, Outhwaite & Cordero-Guzman, 2007). Such a situation is premised on the accounting principle that in such instances, the income or revenues generated exceed the operational costs (Pollinger, Outhwaite & Cordero-Guzman, 2007). For private and middle-level colleges, the implication is the same—the revenue generated must be greater than the cost of providing educational services. This means that the resultant income will be sufficient to cater for salaries, wages and allowances to staff, in addition to covering the cost of educational goods and services needed to keep the institutions running.

Leon (2001) suggests that there's a minor but important distinction that has to be made between financial sustainability and financial self-sufficiency. On one hand, financial sustainability is about ensuring a longer functionally operational life for an organization, while on the other hand, financial self-sufficiency implies that a firm is able to fully cover all its costs without relying on external funding. All said, a self-sufficient and sustainable organization is one that is able to thrive in the long term through the generation of its own revenues, and without depending on external sources, including contributions from donors, financiers and well-wishers.

Sergei, Ekaterina Khalomora and Irina (2015) evaluated financial sustainability of higher education institutions in Russia and suggested that for higher education institutions to achieve financial sustainability, there has to be economic independence and flexibility of the management structure. Economic independence implies that the internally generated financial resources from such avenues as fees from students,

research grants, internal business units, philanthropic efforts and legal revenues must be adequate enough to meet the periodic costs incurred on the related activities despite the fluctuations in the external sources particularly the government financing.

In the United States, Kotha and George (2012) acknowledged that universities were faced with major challenges, and had gone through significant changes in the nature and scope of their mission, their governance as institutions, the knowledge they produce, the value of these knowledge, and their relations with the wider economy and society. Linking them to entrepreneurs, Kotha and George (2012) show that the categories of resource mobilization by entrepreneurs vary by the mix of the work interrelationships, especially the helper network. Universities can largely draw from this because they often have a large pool of alumni network that can always be called upon to complement and supplement the available resource mobilization structures.

The sentiments of Kotha and George (2012) are echoed by Eriksson and Hansson (2013) who argue that universities have become increasingly reliant on student contributions and student fees. This led to the prediction of existence of cost-funding squeeze due to lack of additional budget supplementation. The elasticity of student fees' revenue lags far behind the cost elasticity of running institutions of higher learning particularly universities and this contributes to financial difficulties and places a big hindrance on the financial sustainability of the universities.

In the United States of America, Vasi and King (2012) established that States in the contemporary world have become minority partners in the colleges and universities that typically bear their names considering that on average, States supplied only a little over one-third of public colleges' revenues. This has been seen where more public universities are being privatized. Based on social movement theory, Vasi and King (2012) indicate that the dwindling resources from the federal government in the USA and the State governments in financing universities has meant that the institutions require re-engineering of their financial resource structures in order to remain financial

sustainable into the long term and maintain USA as the hub of scientific and technological innovations that steer the world to research and societal advancement.

In Australia, Noonan (2015) provides a blueprint on how the country could build a sustainable finding model for higher education. This was following the instability in the university funding system in 2014 when the reform legislation by the government of that country was defeated in the senate. According to him, the government was to consider various issues in coming up with a sustainable funding model. These were the agenda with respect to university fee deregulation; the institution of a scheme after consideration of the risks of fee reregulation; the impact of the university education fee reforms on the entire economy and the increasing variance between university education on one hand and vocational education training on the other. Noonan (2014) notes that public funding is not a self-sustainable mode of funding universities given the increasing enrolment and outreach. He argues for variable pricing of university causes with respect to their relative costs. This is likely to improve learning and also teaching within the universities.

Hicks (2012) advocates for the re-examination of the apparent paradigm shift towards performance-based university research funding systems. The recommendation is done in the context that universities worldwide have been experiencing tremendous changes in how they are financed and that performance-based university research funding systems have gone a long way in becoming part of the new models of financing. This approach was developed in the mind that it improves funding competition and the related prestige even where the distribution of research funding may not be at the optimal. Whereas it could complement existing funding sources, Hicks (2012) is of the view that it may negatively affect some critical higher education goals and values like equity and diversity.

Across the OECD countries, Jongbloed and Vossensteyn (2016) set to compare the similarities and variations in the approaches to higher education funding among countries. They compare not only the public and private funding of the institutions but

also the emerging trends towards cost sharing and funding based on institutional performance. Their paper goes on to outline the differences in countries with respect to the amount of fees that is paid by the higher education students as well as the respective financial support to those students. Based on their research, they show that OECD countries are increasingly undertaking reforms in the university funding approaches, especially with emphasis on performance contracts and agreements on which the budgets for funding of public universities are based.

All over the world, Bacq *et al.* (2015) indicate that universities mobilize resources in order to ensure the continuation of organization's service provision to clients, to support their sustainability, and to allow for improvement and scaling of products and services currently being provided. Therefore, to stay afloat, both the private and public sector universities must continuously engage in the generation of new business. They mobilize resources from four sources namely individuals- in form of donations/gifts, legacies/endowments and in kind contribution; NGOs- in terms of grants, donations and fees for services; corporations- in terms of fees, donations and cause related marketing and Government-grants, loans and bailouts. All these ensure universities are financially stable (Bacq *et al.*, 2015).

1.1.2 Regional Perspective on Resource Mobilization and Financial Sustainability of Universities

On the regional front, Ayako, Githui and Kungu (2012) argue that effective funding is a prerequisite for growth and development of organizations in Nigeria. In order for a corporation to implement its strategies, there needs to be adequate resources to finance it. The resources should include both financial and non-financial in terms of human capital that is adequate and well experienced. In addition, the human capital needs to possess the right skills required in different tasks in the strategy implementation process. This applies to all types of organizations including institutions of higher learning and universities.

In Uganda, Turyahebwa, Sunday and Ssekajugo (2013) assessed the relationship between student enrolment and the management of private universities, determining the effect of variations in flow of financial resources on the management of private universities and assessing the human resource situation and its effect on the management of private universities. It is noted that in private universities, management practices such as financial management, diversity management practices, relationships management, staffing processes, recruitment and selection are important. There needs to be prudent financial management processes if a university is to be financially sustainable especially for private universities as they do not access any form of financing from the government.

Amponsah and Onuoha (2013) examined the performance and challenges of private universities in Ghana and Nigeria. The patterns explored are private universities operating in collaboration with foreign institutions; those established through government or the public universities with foreign collaboration; those owned by religious organizations; and those operated as private firms within the country and owned by nationals. Like Ahemba (2006), they attributed the emergence of private universities to the failure of Africa's once glorious public universities. Ahemba (2006) described the state of public institutions of higher learning thus: Amponsah and Onuoha (2013) found that many public universities across Africa, from Nigeria and Cote d'Ivoire to Kenya and Uganda, are replete with overcrowded lecture halls and hostels; libraries stocked with old books and lacking basic information repositories relevant to the knowledge economy, and ill-equipped laboratories – all these evidence of continuous shortages in funding and investment in university education. Under those circumstances, faced with the prospect of better salaries and well-equipped facilities in overseas universities, the universities in Africa have seen the exit of talented teaching staff who are keen on self-development, a situation which has seen dwindling academic standards in Africa's once renowned alma maters (Amponsah& Onuoha, 2013).

A study conducted by Chu, Jayaraman, Kyamanywa and Ntakiyiruta (2014) on influence of resource mobilization on sustainability of universities in Sub-Saharan Africa acknowledged that sustainability of universities is a great challenge in most developing

countries. Evidently, it is sustainability that differentiates between universities that have succeeded and ones that have failed. Higher education institutions need resources to enable them to continue to provide the services to members and also the country's students at large. Universities have for a long time relied on government funding in order to support their project activities. But, this funding is often insufficient to cover the cost of project operations and implementation, and to guarantee the sustainability of projects undertaken.

Saymeh, Ariqat and Aqel (2014) suggested that the quality of higher education in developing countries needs professional support. Using the case of Uganda's Kyambogo University based in Kampala, the authors examined why students sought university education, explored the basis for the choice of course of study, reviewed the quality of university education, and identified the challenges facing many university students, and came up with suggestions on how to improve university education. They identified a broad classification of economic, political and administrative resources as major determinants of the quality of higher education in many public universities in the developing world, mainly in Africa.

Kamanzi and Neema-Abooki (2018) while discussing financing in the context of the Ugandan public universities put emphasis on the need to tap into various sources of financing including donations and grants, research and consultancy services, hiring facilities introduction of stem courses as well as research and consultancy services. In summary, the authors were in favour of the idea that the institutions of higher learning especially in the public sector need to make additional effort towards diversifying the sources of funding in order to improve financial sustainability of such institutions.

1.1.3 Kenyan Perspective on Resource Mobilization and Financial Sustainability of Universities

Gakuu and Kirimi (2014) emphasized that for an organization to be considered financially sustainable, it must have the resources to meet all its financing obligations,

and to fulfil its mission. Therefore, the argument can be made that for Kenyan universities and colleges to achieve financial sustainability, they ought to deploy their resources effectively, efficiently and prudently while remaining focused on their core mission. The main thrust of this argument is that fiscal sustainability can be boosted through a broad-based interdisciplinary approach, including developing the management and technical capacity of these organizations, without which, it would be difficult to generate and attract sufficient resource levels (Gakuu &Kirimi, 2014). To put it differently, as Kamau (2006) said, without prudent financial management, it is difficult for and improbable that an organization will achieve financial sustainability.

In 2018, a report of Kenya's auditor general indicated that most public universities lack sufficient financing to run their programmes, in essence, negatively affecting the quality of education. A number of studies have also been focused on the resource mobilization and financial sustainability of organizations in Kenya. These studies have identified some factors which contribute to the financial distress in universities in Kenya. The main factor is the enrolment pressure arising from the high number of secondary school leavers fighting for limited spaces in universities and institutions of higher learning, at a time when the universities are already struggling with high student population and inadequate facilities (Midiwo, 2016). Further, the unit costs in higher education continues to rise faster than the unit cost in the overall economy resulting in increasing scarcity of public revenue for higher education due to competition from other public needs like basic education. It is unclear the extent to which this scenario of financial distress can be associated with investing activities, revenue sources and sustainability of public universities (Etzkowitz *et al.*, 2013).

Kinuthia (2009) suggests that many public universities in Kenya have capacity limitations in discharging their core mandate of delivering university education to students, including teaching and research, mainly because of reduced funding from the national government. The reduced funding, diminished capitation, and increased competition among the public universities and even from private universities, forced the public universities to find innovative ways to raise revenues. The reduction in the

allocations to universities has been going on since the 1990s, because the institutions have been receiving less money than their estimated expenditure, leading to delays in payment of suppliers and service providers, and ultimately the accumulation of debt (Maina & Kodongo, 2013). A 2005 government report on ministerial expenditure showed that the government was no longer able to fully fund public universities (GoK, 2005).

It is evident that because university enrolment rose faster than the government's proportional funding to public universities, these institutions have in recent years experienced funding shortfalls as Sifuna (2017) illustrates. With a deficit created by the reduced government funding, it was inevitable that the public universities created income-generating activities, not only to alleviate the financial distress but also maintain institutional sustainability in teaching and research.

However, even with that, the fiscal difficulties persist as evidenced by the delays in the payment of suppliers of goods and services; piling debts; delays in the implementation of collective bargaining agreements for staff; a limited course menu; failure to purchase books, journals, and other information material to support research; reduced support for academic conferences; and even reduced or elimination of research grants (Mange, 2013). It is reasonable to say that over the years, the income-generation measures introduced in public universities have only offset a small fraction of the financial burden facing these public universities. As Murage and Onyuma (2015) noted, the adoption of various resource mobilization strategies is not unique to Kenyan universities. Also, the underfunding of public universities appears to be partly a consequence of the growing demand for university education as the population in Africa, and in Kenya, seeks to satisfy the needs of the knowledge-driven modern economy. In the pursuit of money, the universities have lost sight of their core mandate, teaching and research, a situation which has led to poor quality of the teaching and research deliverables (Chumba, Muturi & Oluoch, 2019). It is not only the academic aspect that has suffered. Many public universities are littered with abandoned infrastructure projects – lecture halls,

laboratories, offices, hostels—and even the existing physical facilities appear to be neglected (Ayuya, Awino, Machuki & Wainaina, 2017).

This study addresses constraints to enhanced revenue mobilization and spending quality in Kenya. The structure and growth of Kenya's economy and spending quality have a bearing on its taxable capacity. Constraints to enhancement of revenue mobilization and spending quality include the existence of a large informal sector; inadequate information on property ownership; perceived corruption; inefficient use of public resources; political interference; volatile election cycles; abuse of tax incentives; uneven transfer pricing; illicit financial flows; and untaxed online businesses, coupled with poor administrative capacity and tax policy design.

Policy implications on revenue performance are:

   i.   the National Treasury and Kenya Revenue Authority (KRA) should focus on property taxes and capital gains taxes to expand the tax base;

  ii.   development partners are needed to direct technical assistance to the informal sector, to aid with transfer pricing, to monitor illicit financial flows, and to properly tax online businesses;

 iii.   greater use of technology is needed to increase efficiency;

 iv.   intervention by the Geospatial Information System is needed to link data on land and property ownership with tax information in the existing database;

  v.   a pay-for-results model needs to be deployed;

 vi.   need to reduce tax expenditures; and policy reforms to be initiated in the agricultural sector.

The policy implications on expenditure are:

1. the need for efficient utilization of tax revenues;
2. the need for implementation of digital technologies;

3. the need to revisit an integrated financial management information system (IFMIS) configuration;

4. the need to adhere to long-term planning; and

5. adoption of the GFS 2014 reporting standard. Overall, an independent entity needs to be established that will set budget ceilings, monitor budget implementation, and carry out audits.

Chelangat (2018) reflected on the financial stability in the context of non-government organizations based in Nairobi, Kenya. Based on the findings, accountability stands out as one of the key factors that influence the financial sustainability of the selected organizations. The findings also suggest that this relationship can be moderated by financial planning, financial monitoring and evaluation as well as financial control. The authors outline the need for proper accountability measures as a means to realize financial sustainability within these institutions. Similarly, the idea of financial sustainability remains the focal point in the present study; however, the difference in the approach is that it considered financial resource mobilization mechanisms as a means to realize financial sustainability within the context of Kenyan universities.

1.2 Statement of the Problem

Empirical studies have underscored the significance of realizing financial sustainability within institutions of higher learning notably in the wake of financial challenges facing institutions (Ismail *et al.*, 2018; Leal-Filho *et al.*, 2018; AI-Youbi & Zahed, 2021). Realization of financial sustainability within universities means that these institutions can make use of the resources at their disposal for the purpose of value creation for the stakeholders in accordance with the mandate in order to maintain the institution as a going concern (Kinde, 2012). Alonso-Cañadas *et al.* (2017) in their study on Spanish public universities contend that financial sustainability can be achievable on account of increasing productivity within the institutions. Moreover, putting in place sound mechanisms of financial accountability together with effective management are

significant steps towards realising financial sustainability in institutions of higher learning (Musiega, Rading, & Oruko, 2021).

Whereas justification to realize financial sustainability within institutions of higher learning remains emphatic in extant scholarly literature, the challenge of ensuring sustainability of such funds towards bridging the spending gap has often been problematized. For instance, financial deficits experienced in universities can be as a result of lack of financial and administrative authorities (Almagtome, Shaker, Al-Fatlawi & Bekheet, 2019). Moreover, Malaysian public universities experienced a 16% cut in operational budget in the year 2016, and an additional 20% reduction in the subsequent years which severely affected financial sustainability of the universities (Kowang, Fei, Hanafi & Long, 2018). Accordingly, these inadequacies significantly contribute to funding deficit in these institutions.

Subsequently, such inadequacies of resources in institutions of higher learning have prompted utilization of various financial resource mobilization strategies in order to realize financial sustainability (Kotha & George, 2012). For instance, collection of tuition fees is critical in ensuring financial sustainability within institutions of higher learning (Robinson & Sensoy, 2013; Pavlov & Katsamakas, 2019). In Kenya, Chumba, Muturi and Oluoch (2019) cited both investment and consultancy strategies as useful in augmenting financial sustainability within universities. Further, revenue diversification strategies are useful in realisation of financial sustainability within institutions of higher learning (Ismail, Da Wan, & Ibrahim, 2018). Al-Ghaswyneh (2020) also argues in favour of formulation of strategies aimed at boosting financial sustainability within institutions of higher learning.

Reports indicate that Kenyan universities have often experienced challenges of financial sustainability in the last five years. This challenge has been partly attributed to the rising debt which stood at $120 million by the year 2019 (Munene, 2019). Business Daily (2021) reported that in the year 2021 alone, both the University of Nairobi and Kenyatta University had a combined public debt of KSh4.3 billion signifying cash flow problems

at the universities. Additionally, empirical data sourced from Universities Fund (UF) indicated that the funding gap experienced in Kenyan universities was close to KSh27 billion between the year 2020 and 2021. The report further suggested that a KSh35,616 capitation per student raised speculation of an increase in tuition fee (*ibid*). Failure to address the rising challenge of financial instability could lead to eventual closure of some of these institutions.

Despite the challenge of financial distress facing universities, there is still a paucity of information with regard to what needs to be done in order to reverse the financial instability faced by Kenyan universities. For instance, Gudo, Olel and Oanda (2011) examined the challenges and opportunities following university expansion in Kenya and issues of the quality of higher education. Findings show that to absorb the large number of students in a double intake and to offer the quality of higher education envisaged, careful investment in physical facilities, teaching and research resources, innovative ICT and collaboration with the private universities is inevitable. Aluede and Idogho (2012) identified financial shortages and limited research as key challenges facing institutions of higher learning in Nigeria. Also, Mutula (2002) noted with concern the declining trend of government funding to public universities with the donor community also insisting that public universities and the Government of Kenya seek alternative means of financing university education.

The studies examined above have concentrated on other aspects affecting the quality of education and ignored the aspects of financial resource mobilization strategies and financial sustainability of universities. In the quest to fill the research gap, the present study applied quantitative and cross-sectional correlational research designs in order to analyse how financial resource mobilization strategies such as fees revenue, donor funding, investment income, consultancy, linkages and partnership strategies impact on financial sustainability of universities as manifested in poorly trained academic staff, inadequate libraries, and overcrowded classrooms. Further, the study sought to bridge the knowledge gap by subjecting the foregoing relationship to the moderating effect of government grants given to the universities.

1.3 Research Objectives

The general and specific objectives of this study are as shown below

1.3.1 General Objective

As a general objective, this study set out to assess the effect of financial resource mobilization strategies on financial sustainability of universities in Kenya

1.3.2 Specific Objectives

The following specific objectives guided this study:

1. To evaluate the effect of fees revenue mobilization strategy on financial sustainability of universities in Kenya.
2. To examine the effect of donor funding mobilization strategy on financial sustainability of universities in Kenya.
3. To find out the effect of investment income mobilization strategy on financial sustainability of universities in Kenya.
4. To determine the effect of consultancy revenue mobilization strategy on financial sustainability of universities in Kenya.
5. To establish the effect of linkages and partnership financial resource mobilization strategy on financial sustainability of universities in Kenya.
6. To identify the moderating effect of government grants on the effect of financial resource mobilization strategies on financial sustainability of universities in Kenya

1.4 Research Hypotheses

H_{01}:   Fees revenue mobilization strategy has no significant effect on financial sustainability of universities in Kenya.

H_{02}:   Donor funding mobilization strategy has no significant effect on financial sustainability of universities in Kenya.

H_{03}:   Investment income mobilization strategy has no significant effect on financial sustainability of universities in Kenya.

H_{04}:   Consultancy revenue mobilization strategy has no significant effect on financial sustainability of universities in Kenya.

H_{05}:   Linkages and partnership financial resource mobilization strategy has no significant effect on financial sustainability of universities in Kenya.

H_{06}:   Government grants have no significant moderating influence on the effect of financial resource mobilization strategies on financial sustainability of universities in Kenya

The research hypotheses guiding this study were:

1.5 Scope of the Study

The study focused on financial resource mobilization strategies and their effect on the financial sustainability of universities in Kenya. Specifically, the study evaluated the effect of investment activities, fees, donor projects, consultancies services and linkage and partnership as well as the moderating effect of government grants. The study targeted 71 institutions of higher learning as listed by CUE (2018). The study was anchored on seven theories, specifically the resource mobilization theory, knowledge-based view theory, the dynamic capabilities theory, modern portfolio theory, Modigliani Miller theory, regression discontinuity theory of education interventions, and resource dependency theory. Moreover, both primary and secondary data collection techniques were applied in the study. This was useful in order to ensure triangulation of the information emanating from both primary and secondary tools of data collection.

The quantitative paradigm that the study adopted ensured appropriate data was collected using appropriate methods and specifically covered research philosophy, cross sectional correlational survey design, population of the study, sampling method and primary and secondary data that was used, data collection procedures, pilot testing, data analysis and presentation. The study was conducted in 2018 on a cross-sectional basis although the financial sustainability data was based on a score covering five years from 2014 to 2018 when the Universities Act of 2012 had come into force.

1.6 Significance of the Study

Financial sustainability of universities in Kenya has attracted much concern lately in the face of expansion of the education sector with a view to bring education closer to the citizens. However significant cuts in government funding as well as increasing cost of teaching has created a need for university management to work towards achieving financial sustainability. The present study is timely in providing evidence and suggestions on the financial resource mobilization strategies that can significantly contribute to financial sustainability of universities in Kenya.

The discoveries from this study are likely to provide primary data and an intellectual foundation for the benefit of future researchers and academicians, donors, financial institutions, the Government of Kenya, management teams in institutions of higher learning and the students in various universities across the nation. For future scholars and academicians, the finding of this study extends the existing literature on financial resources mobilization strategies and financial sustainability of universities. The findings of the study also provide crucial information on how various financial resource mobilization strategies contribute towards the ability of public universities to meet the financial obligations as and when they fall due. In addition, the study suggests more areas for further scholarly inquest in order to fill relevant research gaps that were beyond the scope of this study.

For the university management teams, the findings of this study are likely to inform them of viable and effective resource mobilization strategies for their institutions so as to ensure better financial stability and sustainability. The best resource mobilization strategy would assure the management of meeting the financial institutions' obligations as and when they fall due.

It is further hoped that the conclusions and recommendations of this study are likely to be relevant to the Government of Kenya, as a key stakeholder in the Kenyan higher education in the process of formulation and implementation of policies that govern funding of higher education in the country. The study aimed at highlighting the challenges being faced by management teams in institutions of higher learning in order for them to formulate policies that would ensure financial sustainability in institutions of higher learning.

The study is significant in such a way that it helped shed some light on the areas that have not been addressed by previous research. With insufficient government funding, it was also evident that universities needed financial resources to run their operations. Further, it is rather obvious that to grow, universities need resources to fuel such growth. However, it is not clear how universities identify investing activities that besides promoting teaching and research, also generate revenue that support their financial sustainability.

The conclusions of this study are likely to support and enrich the theories and models of sustainable financing of the public sector which include resource mobilization theory, knowledge-based theory, dynamic capabilities theory, regression discontinuity theory of education interventions and modern portfolio theory. With regard to the resource mobilization theory, the study is likely to raise awareness on the need for universities to strengthen and mobilize their financial resources so that they are financially sustainable. The study would impact on knowledge-based theory since knowledge is among the resources that firms use to remain financially sustainable. In view of the dynamic capability theory, the study would discuss the need for universities to align the key

financial resources and capabilities that occur in internal and external forms so that the institutions are able to enhance their financial sustainability. The findings of the study are likely to influence how universities balance the risks and returns that are part and parcel of financial resource mobilization process. The results will also enable universities to develop informed and effective policies on financial management of Universities. Similarly, the public in Kenya will benefit from the empirical information on the effect of financial resource mobilization structures on the financial sustainability of universities in Kenya.

Theoretical framework introduced theories that can support the research study. The theories have been used to predict and understand phenomena and challenge and extend existing knowledge within the limits of critical bounding assumptions. Empirical review presents a discussion on previous studies as undertaken by scholars in relation to this study variable and finally a conceptual framework provides a connection between variables in research graphically or dramatically. It gives ideas of the variables covered by the research.

1.7 Limitations of the Study

Limitations of the study can be defined as some weaknesses experienced in a given research study that can affect generalizability of the findings (Maisya, Rahmat, & Rina, 2019). Limitations of the study can also refer to methodological factors that can influence interpretation as well as application of the findings of the study (Soneka, & Phiri, 2019). Aldhshan *et al.* (2019) define limitations of the study as characteristics of a research design or methodology which have an influence on the interpretation of the results of the research study. This is also echoed by Silva *et al.* (2021) who define limitations of the study as the characteristics of the research design that may not allow the generalizability of the results. Consequently, the limitations exhibited in the present study was accompanied by relevant mitigation measures in order to ensure credibility and generalizability of the study findings.

Accordingly, the first limitations faced in the present study was time constraints considering the study was cross-sectional in nature. This was however overcome by ensuring proper allocation of time frames for various key activities during the data collection and analysis process. Additionally, efforts were made to ensure that the journal manuscripts were submitted in time for publication. Moreover, a combination of the public and private universities were used in the study yet the two have some differences in the financing structures. This however made the study more comprehensive for generalization to the entire country and countries with similar regulatory regimes.

Yet another limitation experienced in the present study was the sample size that was used in the study($n = 71$ universities) instead of 77 in universities that were operational at the time of the study. This was occasioned by the fact that the respondents were unwilling to provide information relating to financial resource mobilization together with financial sustainability at that particular time. This however did not affect the generalizability of the findings as the response rate recorded was 92%; which was way above the 70% recommended threshold of response rate to make meaningful conclusions from studies (Chin *et al.*, 2022).

1.7.1 Delimitations of the Study

Delimitations of the study can be defined as boundaries which are imposed by the researcher with regard to both the purpose and the scope of the study (Tlali, 2018). Ferguson (2019) holds a point of view that delimitation of the study has to do with both the nature and the size of the sample of what is used to the study, alongside the uniqueness of settings and the timing within which are given research study is conducted. Additionally, the study delimitations can also be regarded as the set of boundaries that have been set up by the researcher with the aim of controlling the range of the study (Bastola, 2021) which closely relates to the observation by Suh and Owens (2021) who contend delimitation of the study is basically all things that will be excluded

from a given research study by design. Accordingly, efforts were made towards delimiting various aspects of the present study.

Firstly, the theoretical anchoring of the study was delimited to seven theories—Resource Mobilization Theory, Knowledge-Based Theory, Dynamic Capabilities Theory, Modern Portfolio Theory, Modigliani Miller Theory, Regression Discontinuity Theory of Education Interventions and Dependency Theory. The resource mobilization theory was useful in pinpointing the independent variable being financial resource mobilization structures. The knowledge-based theory is used to describe how knowledge plays an important role as a resource which firms leverage on to remain financially sustainable. The dynamic capabilities were used to explain how institutions can align the internal and external competences so as to enhance financial sustainability. The portfolio theory was used to explain the ability of institutions to balance between risks and returns which are critical components of financial resource mobilization structures. The resource dependency theory was useful in explaining how development policies in developing countries depend on external influences. Regression discontinuity theory of education interventions was useful in explaining the importance of donor funds in the advancement of student academic development. The delimitation to the seven theories was informed by the fact that these theoretical postulations were sufficient in explaining the reasoning behind implementation of financial resource mobilization strategies and its eventual influence on financial sustainability within the context of universities.

Conceptually, the study was limited to exploring the effect of financial resource mobilization strategies on financial sustainability of universities in Kenya. Specifically, the study focused on five specific independent variables; fees collection strategy, donor funding strategy, resources from investment strategy, consultancy resource mobilization strategy and linkages and partnership resource mobilization strategy with the moderating variable being government policies on university funding. The rationale for selection and use of these variables was informed by the reviewed literature. Furthermore, financial sustainability, which was the outcome variable of the study was operationalised

in terms of net assets ratio change and current ratio change, the empirically tested indicators of financial sustainability in organizations .

Methodologically, the study was delimited to 71 universities that are certified by the Ministry of Education to operate as of 31 December 2018. Census was used to cover all the targeted 71 universities. The study adopted cross-sectional correlational survey research design. The study utilized the primary data and the secondary data as informed by the variables. To gather primary data, the study used questionnaires. For secondary data, the study used data collection sheets. From the analytical perspective, the study invoked frequencies, percentages, means and standard deviations in providing descriptive analysis of the study findings. With regards to the inferential analysis, the study was delimited to two techniques—simple linear regression analysis, multiple linear regression analysis, panel data analysis as well as hierarchical multiple linear regression analysis.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on studies undertaken by different scholars and researchers that inform the research objectives of the current study. The chapter first covers the theoretical underpinnings of the study where it introduces different schools of thought and how relevant they are to the study. It then outlines the conceptual framework clearly indicating the independent and dependent variables before presenting the review of variables and empirical literature. The chapter further gives a critique of the reviewed literature to bring out the gaps in research that drive the current study.

2.2 Theoretical Framework

This section describes the various theories on which the study is anchored. It specifically discusses the resource mobilization theory, knowledge-based view theory, the dynamic capabilities theory, modern portfolio theory, Modigliani and Miller theory, regression discontinuity theory of education interventions, and resource dependency theory. These theories are discussed in detail below:

2.2.1 Resource Mobilization Theory

Oberschall (1973) is the proponent of Resource Mobilization Theory. This theory has its roots in the study of social-economic movements, and posits that successful social movements are those that have the resources – money, time, and skills etc.—and the power to use these resources. At its inception, the theory was considered revolutionary because it extracted social-economic movements from the realm of psychology to the realm of sociology. Essentially, it was an emphatic theory that, with the resources held constant, the success or failure of social-economic movements could also be credited to the goodwill and support from various organizations, including governments, and not

simply the organic, (ir)rational, (dis)organized and emotion-driven character of social movements (Crossman, 2019).

The resource mobilization theory of social movements holds that a social movement arises from long-term changes in a group's organization, available resources, and opportunities for group action (Edwards & Gillham, 2013). According to resource mobilization theory, participation in social-economic movements is a rational behavior, based on an individual's conclusions about the costs and benefits of participation, rather than one born of a psychological predisposition to marginality and discontent (Klandermans, 1984). Resource mobilization theory of social movements explains how social movements mobilize resources, from inside and outside their movement, to reach goals (Jenkins, 1983).

Principally, the resource mobilization theory posits that the effective mobilization of resources and the development of political and economic opportunities for members of social-economic movements, is a ground for the success of these movements. Social-economic movements can mobilize both material and non-material resources. Material resources include money, organizations, manpower, technology, means of communication, and mass media. Non-material resources on the other hand include legitimacy, loyalty, social relationships, networks, personal connections, public attention, authority, moral commitment, and solidarity (McCarthy & Zald, 1977).

Further, Turner (2012) argued that the basis of the resource mobilization theory was that in the context of social-economic movements, organizations with resource-poor beneficiaries need external funding and support. The binary nature of the members of social-economic movement organization, with a classification as either a beneficiary constituent, or as a conscience constituent, allow for a thoughtful unpacking of the theory. Conscience constituents are the groups or individuals outside the social-economic movement who share the movement's mission, cause, or goal. They form the key target for the social-economic movements in terms of personnel, skill, time and even intellectual resource. Thus, it is upon the social movement on their own or in an alliance

with the mass media, to frame the movement's message and package the movement's character in a way that attracts the conscience constituents. Eltantawy and Wiest (2011) found out that when the messaging about the social-economic movements emphasizes commonalities with conscience constituents, the contributed more than the beneficiary constituents.

The support of influential organizations, the positions and actions of the elite, the strategic choices and the governing coalitions and regimes, influence the outcomes of social movements, according to resource mobilization theorists (Edwards & Gilham, 2013). These outcomes range from failure, to benefits and gains without acceptance, to acceptance without benefits or gains, all the way to full success. It therefore follows that when it comes to social movements' political participation, the mass media is an integral part, for it influences the politics of social movements through its dual informational role – informing the public about the actions of the elite, and the elite about the actions of the public, and how to interpret the actions with the context of the cause, mission and goal of the social movement (Jenkins, 1983).

In the context of this theory, it helps explain how resource mobilization leads to financial sustainability of socio-economic units. Universities are such kind of units and hence the theory is relevant for this study as it will help explain the philosophy of donors and other funders who extend their support to universities and projects or programmes run by universities on social grounds. In effect, the theory will be useful in answering the research objective on donor funding mobilization strategy as one of the approaches used by the selected universities in mobilizing financial resources.

From time to time, several empirical studies have applied this theory in explaining how firms can leverage on financial resources to remain financially viable. For instance, Davcik and Sharma (2016) used the resource mobilization theory to predict the interaction between marketing resources and financial viability of the firm. Casanueva, Gallego and Revilla (2015) also borrowed the knowledge of resource mobilization

theory to explain the interrelationship between resource mobilization and the ability of the firm to remain competitive.

The applicability of the theory notwithstanding, critics note that the theory does not adequately explain the communal nature of social-economic movements, especially the networks of other groups and individuals allied to the social-economic movements and providing services to the movements. Also, the resource mobilization theory does not explain how socio-economic movements with limited resources or those which fail to raise adequate resources can thrive to bring social-economic change. The theory assigns insufficient weight to many macro-sociological issues including identity, culture and grievances as well the emerging trends where movements rely on micro finance sources of funding as well as the support of movements that are purely economic with little or no attention to social issues.

The theory provides insight on financial resource mobilization strategies. As noted earlier, the success of social-economic movements, according to this theory, is dependent on effective mobilization of resources and on the political opportunities developed for members. Social-economic movements can mobilize both material and non-material resources that are used in financial resource mobilization strategies. It also holds that social-economic movement organizations with powerless or resource-poor beneficiaries require outside support and funding.

2.2.2 Regression Discontinuity Theory of Education Interventions

This theory was proposed by Thistle, Thwaite and Campbell (1960) with intent to justify the evaluation of programs. According to the theory, merit-based scholarship awards to students is an intervention that leads to the academic performance improvement by the awardees and that when well targeted, such interventions by the government, philanthropists and other funders of education programs can enhance the performance of the students. Taken to the logical conclusion, if students can be helped to improve their performance through scholarship awards, then indeed such scholarships are merited, and

that continuous flow of scholarship funds will go a long way in enhancing the financial sustainability of institutions of higher learning. In a nutshell, the theory presupposes that the exogenous interventions on academic funding can be used to draw conclusions on their causality with respect to academic performance of beneficiaries. The evaluation is based on a cut-off point in evaluating the level of academic performance *ex post*. Different gradients fit intercepts usually fit the data on either side of the cut-off. Subsequently, the proceeds from this academic funding can go a long way towards boosting fee collection of the selected institutions, and therefore the theoretical perspective closely linked to the first objective of the study that envisages attainment of financial sustainability as a result of operationalizing fee collection strategy.

The most enduring of the assumptions of this theory is that it assumes that all relevant variables in addition to the treatment variable (in this case the merit scholarship awardees) as well as the response variable be continuous variables at the point of where discontinuities arise. This implies that the treatment assignment is approximately random. This indicates that on either side of the discontinuity or cut-off point, the ability of being selected as a beneficiary of the merit scholarship should be the same. It is the ranking aspects of students on the basis of merit for the purposes of identifying the beneficiaries that makes the theory lose some of its practicability. Considering that the theory touches on the significance of scholarships, it resonates with the research objective on donor funding strategy as resource mobilization strategy that can impact on financial sustainability of the selected institutions of higher learning.

Progressively, this theoretical standpoint has been widely applied in programme evaluation studies. This is an agreement with Hill *et al*. (2017) who argued that the theory is characterized by two distinctive Features namely treatment of the subjects based on observed variable as well as the conditional probability of treatment status equivalent to the probability of treatment assignment under perfect compliance. Cattaneo and Vazquez-Bare (2017) add that the key design feature of the theory is that unit have an observable running variable, score or index and usually assigned to treatment whenever the variable exceeds the known cutoff. The theory has proven useful in

providing an estimate of the treatment effects of a given intervention. furthermore, it provides a basis to carry out a policy evaluation given the type of treatment; thus providing evidence on the effectiveness of a given intervention in the specific treatment group of beneficiaries. (Melly & Lalive, 2020; Bartalotti, Bertanha, & Calonico, 2021).

Critics of the theory like Moss, Yeaton and Lloyd (2014) however believe that the theory fails to explain the real causal association between such awards and the actual performance especially because the allocation criteria is often biased. In their argument, students who benefit from merit scholarship awards are already of above average academic performance and that they are likely to perform well whether the intervention is carried out or not. In this argument, the theory fails to control for the endogenous treatment of the interventions and therefore does not have a perfect explanatory power with respect to the impact of *ex ante* funding interventions on *ex post* academic performance, social welfare and therefore financial sustainability of universities. Criticism notwithstanding, the theory provides a perfect platform to interrogate the significance of donor funding strategy as an important source of finances for the day-to-day running of institutions of higher learning. Subsequently, the donor funds can also be useful in scaling up the fee collections strategy in the event where such donor funding is channeled towards fee payment for the beneficiaries.

2.2.3 Knowledge-based Theory

Knowledge-based Theory was viewed as just another important theoretical standpoint in analysing resource mobilization strategies. Grant (1996) is the proponent of the knowledge-based theory; whose conceptualization was that in terms of strategic hierarchy within an organization, knowledge ranks as one of the most strategically significant resource, whose inherent characteristic is the social complexity and uniqueness. As Sveiby (2001) explained, the major determinant of sustained competitive advantage and great corporate financial performance is the heterogeneity of the knowledge base. This study construes knowledge as that which is carried and embedded in an organization's culture, captured in documents, policies, systems and even by

employees. The origin of this theory appears to be domiciled in the strategic management literature regarding the Resource Based View of the firm (RBV) initially promoted by Grant (1996) and later expanded by others (Eisenhardt & Santos, 2002).

From a financial perspective, the role of financial knowledge is critical in coming up with appropriate financial resource mobilization strategies. This is based on such considerations as the cost of capital, the capital strategy, the risk and returns associated with the finance source, the liquidity and impact on financial solvency as well as the financing restrictive covenants (Mirza &Javed, 2013). This theory is relevant to the study as it supports the objective on research which hinges on the role of knowledge in bettering the welfare of society. The theory supports research activities undertaken by universities with the aim of generating new knowledge that would improve the welfare of the society at large. Thus, this theory is valid for this study and will further anchor the study. However, as to whether or not knowledge-based theory actually constitutes a theory has been the subject of considerable debate (Phelan & Lewin, 2000).

Although the resource-based view of the firm recognizes the important role of knowledge in firms that achieve a competitive advantage, proponents of the knowledge-based view argue that the resource-based perspective does not go far enough (Phelan & Lewin, 2000). Specifically, the RBV treats knowledge as a generic resource, rather than having special characteristics. It therefore does not distinguish between different types of knowledge-based capabilities. Information technologies can play an important role in the knowledge-based view of the firm in that information systems can be used to synthesize, enhance, and expedite large-scale intra and inter-firm knowledge management (Grant & Baden-Fuller, 1995).

Some empirical studies have been conducted focusing on knowledge-based theory. For example, Loebbecke, Fenema and Powell (2016) relied on the knowledge-based view to explain how firms can effectively manage inter-organizational knowledge sharing as a way of creating financial viability. De Silva, Howells and Meyer (2018) relied on knowledge-based theory to explain how firms can leverage on their financial resources

to be more innovative and thus achieve financial sustainability. The theory highlights that knowledge-based resources are usually difficult to imitate, and socially complex, heterogeneous knowledge bases and capabilities among firms are the major determinants of sustained competitive advantage and superior corporate performance. It therefore hinges on the role of knowledge in bettering the welfare of society.

2.2.4 Agency Theory of Resource Mobilization

In general terms, agency theory is attributed to Jensen and Mackling (1976) who postulated that whenever the principals are separated from the agents such that agents have delegated authority to act on behalf of the principals, the likely outcome is that the agents have a tendency of acting to maximize their private interests at the expense of the principals and other stakeholders. Additionally, some scholars argue from the standpoint that the theory is about a contractual relationship that exist between the agent and the principal (Devi, Widanaputra, Budiasih, & Rasmini, 2021). From time to time, this theoretical underpinning has been useful in the context of mobilization of resources with the aim of improving organisational performance.

In the context of financial resource mobilization, the expectation is that universities through their managers must use resource mobilization strategies that enhance the sustainability of the universities into the long-term. However, in the context of the agency problem, they may take less than adequate effort and engage in managerial activities that put to doubt the future survival of the universities. Such satisfying activities may relate to resource misallocation, poor investment decisions, unwillingness to support emerging financing options like research grants, overreliance on government financing and extortion of fees from students. These actions may imply that in reality, the long-term financial sustainability of the universities is put to question and that the managers of universities do not have the best interests of these institutions at heart. From this perspective, the agency problem is inversely related to financial sustainability. The greater the agency conflict, the lower the potential of financial sustainability and vice versa.

University owners for private universities and university councils for public universities usually put in place measures to limit the damage caused by the agency conflicts, the potential that university administrators may place personal goals ahead of university overall goals. The most common of these are firstly, reliance on market forces where the government for public universities, and large stockholders for private universities become far involved in the running of the institutions. The non-performing managers can be ousted through not renewing their contracts or failing to appoint them where past performance is found to be wanting. Competition from other universities, especially the private universities and the potential for hostile takeover is one of the market forces that is mostly used in curtailing the agency conflict among the managers. The persistent possibility of hostile takeovers is likely to cause managers to act in the best interests of the stakeholders of the universities and the overall university goals of teaching, research and community outreach.

University councils and boards can also incur agency costs to limit the negative implications of the agency conflicts and assure long-term survival and sustainability of the educational institutions. According to Keown, Scott, Martin and Petty (2020), the most common agency costs include monitoring costs, internal control and audit costs, corporate governance guidelines, organizational structuring costs and opportunity costs of increased bureaucracy due to the increased agency cost procedures. Some deterrent measures for agency problems are positive. In this class falls managerial incentives like incentive plans and performance plans where managers are encouraged to perform at their level best knowing well that if they meet or surpass their performance target, they are bound to be rewarded in a monetary way.

Though agency theory is very logical and cross-cutting, it is still held back by a number of limitations. The theory for instance makes an explicit existence of a contractual agreement among the principals and their agents for a future period yet the future time horizon is never defined. It remains uncertain. The belief by the theory that controls, contracts and cost incurrence can eliminate the agency problem is somehow far-fetched given that in reality, there are numerous stumbling blocks originating from lack of

information homogeneity, irrationality among the parties as well as possibilities of fraud and corruption. In addition, the roles of the owners and other stakeholders is grossly limited in the organization. It is often said that the theory fails to recognize managerial competence and instead focuses on opportunistic behaviour which may not apply to a wide cross-section of managers.

Some critics of the theory like Arthurs and Busenitz (2003) are of the opinion that agency theory does not fully explain corporate managerial behaviour. They contend that whereas the theory works well in a profit maximization set-up, it fails to explain the behaviour of voluntary management teams whose motivation is not compensation but enhancement of organizational welfare. In addition, it excludes approaches by which exploitation can be encouraged in a structural form because power, especially among bureaucracies, is more often than not, asymmetrical.

2.2.5 Modern Portfolio Theory

This theory was developed by Markowitz (1952) to help explain how individual investors go about making their investments with the aim of maximizing expected returns of a given amount of portfolio risk which can also be achieved by minimizing the level of risk for a given level of investment's expected return (Shipway, 2009). This is achieved through careful selection of different proportions of various assets. The idea is to always maximize returns at every level of risk or put differently, to minimize risk at every level of return. The efficient set is all that investors should be striving to achieve. If this is true, then it follows that optimum investment portfolio would be positively related to sustainability of universities via the optimized returns and the minimized investment risk.

A university is a legitimate entity and hence it must make decisions on investing so as to be able to source for extra funds for its projects. The returns from the projects will supplement what the government allocates to public universities and the contribution of funds from fee charged to the students. For private universities funds to run operations is

from its investment projects and fees charged and collected. Thus, this theory helps investors with key tools that they can use to estimate the expected risk and return associated with a given investment. Many scholars such as Shipway (2009) have proven that the assumption on investors acting rationally is wrong. In the same way, scholars in the area of behavioral finance, have challenged the idea that all investors have an exact idea of potential returns, as normally the expectations of investors are biased.

Taken from the law of large numbers, careful portfolio diversification in a wide array of portfolio that are not positively correlated should not only enhance portfolio investment income, but should go a long way is diversifying away the idiosyncratic risk leaving only the market risk to be the relevant risk in the investment process (Markowitz, 1952). The theory assumes that when presented with a spectrum of alternatives, investors will consider all expected rates of return over a specified holding period and that their investment decisions are based on risk-return considerations. For any given risk level, investors will always rather go for portfolios with higher expected returns than for those with lower returns. Alternatively, for any given expected return level, investors are likely to prefer portfolios with less risk than those with higher risk. Conversely, only portfolios with the highest expected return at the same or lower risk level are considered as efficient. It further assumes that portfolio return is the proportion-weighted combination of the constituent assets' returns and portfolio volatility is a function of the correlation of the component assets (Markowitz, 1952).

Byers *et al.* (2015) indicate that scarce literature available is not adequate to give out dynamic, theory-based approaches to measuring the influences of sharing capital. They further provide insights to demonstrate the mechanism by which portfolio principles can provide benefits. These incorporate the realization of individual and collective needs using a lower level of resources. This directly has and implication on the financial sustainability of business and other organisation. Avoiding what is so called as "putting all eggs in one basket" is a good way of pooling resources to meet uncertain demands from different stakeholders of an asset pool. It is this that is likely to yield advantages from portfolio diversification impacts.

Despite its wide application in the investment set-up, portfolio theory has been characterized by a number of critics. Firstly, the definition of risk within the theory seems to be unrealistic. The definition seems to be premised on an assumption that risk is demarcated by unpredictability which is measured either in terms of standard deviation or beta. Whereas this measure makes perfect sense, a better analysis would entail fundamental analysis of securities to determine their intrinsic characteristics on which basis to make investment choices. Secondly, from the perspective of the theory, investors are assumed to be rational risk averse individuals who aim at minimizing risk and maximizing returns. Logically, this implies that investors are indifferent to both upward and downward swings in the return volatility. This ignores the stylized fact that whereas investors would want to avoid downward swings in portfolio returns, they are most likely to welcome upward swings in returns and cash flows. Further, investors are likely to be affected by behavioural biases during investment decision-making such as narrow framing, the endowment effect, the loss-aversion effect (Byers *et al.,* 2015).

In addition, in the theory, the fact that there is no permanent correlation between risk, when defined as volatility and return, investments seldom have a fixed level of volatility and hence it is impossible to use that factor to make meaningful changes to a portfolio unless one has an *ex-ante* knowledge of expected volatility. Volatility only becomes obvious following an *ex-post* analysis. Finally, portfolio theory is based on some limiting assumptions. These include absence of transactions costs; ability of investors to take a position of any size in any investment security; ignorance of taxes in investment decisions by investors; risk homogeneity perception by all investors; risk diversification is the only approach to risk treatment; infinite ability to borrow at the risk-free rate, and that returns are normally distributed. These assumptions do not sometimes hold in the actual markets.

2.2.6 Modigliani and Miller Capital Structure Irrelevance Theory

This theory was developed by Modigliani and Miller (1951) and provides an overview of how organizations are financed. There are many arguments that an ideal capital structure of a firm is a challenge, and the debate has been in determining the best capital structure composition as per the Modigliani and Miller theory as advanced by Modigliani and Miller (1951). Financing has been a fundamental issue in many organizations; they consider the best model of financial framework that would be applicable to them. Universities like other organizations face the same problem of capital structure composition (Handoo & Sharma, 2014). Accordingly, this attests to the significance of this theoretical standpoint in analyzing financial sustainability and its antecedents in the context of universities.

Progressively, the capital structure theory has been useful in terms of articulating the need to strike a balance between debt and equity within organizations. In this regard, the capital structure theory explains the financial policy used in determining the company's capital structure; the mix between debt and equity which helps in optimizing firm's value (Ukhriyawati, Ratnawat i& Riyad, 2017). The theory further postulates that a debt increase is likely to decrease a firm value in situations where position of the capital structure is above its optimal structure target (Sitompul, Bukit & Erwin, 2020). Recently, Saifi (2021) was of the point of the view that the capital structure theory is centered on the notion that optimal capital structure is one that maximizes the value of the organization.

The nexus between capital structure and financial sustainability has been largely featured in previous empirical studies particularly in the field of finance. Firstly, the idea of capital structure refers to a combination of both debt and equity in an organization (Podile & Sree, 2018). Kajola, Olabisi, and Fapetu (2019) define capital structure as a combination of both equity and debt capital employed by an organisation with the aim of financing its assets as well as operations. Capital structure can also be viewed in terms of a combination of financial liabilities as well as its equities (Onyebuchi, 2022).

The linkages between capital structure and financial sustainability is exemplified in a research study targeting Vietnamese stock market by Dang *et al*. (2019) whose findings exhibited the impact of capital structure on financial performance through profitability. Similarly, these findings are replicated in a study on Bangladesh microfinance institutions by Parvin *et al*. (2020) whose result suggests that capital structure indicators such as equity to assets ratio (EAR); debt to loan ratio (DTL) can have an influence on financial sustainability outcomes such as return on assets (ROA) and net income to expenditure (NIER). Moreover, the results of an empirical study from the Malaysian property sector by Mohamad and Murugesu (2020) also outline the significance of the relationship between capital structure and financial sustainability. Furthermore, the findings are in tandem with an observation by Mubeen, Han, Abbas, and Hussain (2020), whose study revealed that capital structure is among the factors that can affect financial sustainability in organizations. Subsequently, these set of findings bring justification to the idea that capital structure has an impact on company's financial sustainability.

From time to time, empirical studies continually articulate the significant role played by capital structure towards achieving financial sustainability. Mujahid and Akhtar (2014) evaluated the impact of capital structure on a firm's financial sustainability and shareholders' wealth in textile sector of Pakistan. The study focused on return on assets, return on equity and earnings per share ratios as measures to evaluate the impact of capital structure on firm's financial sustainability and shareholders' wealth. The study established that the capital structure positively impacts the firm's financial sustainability and shareholders' wealth. Furthermore, these scholars asserted that the relationship between firm's capital structure and the firm's profitability is very significant as the profitability of the firm can directly be affected by the capital structure decisions therefore impacting on the long-term sustainability of the firm. Velnampy and Niresh (2012) argued that profitability of the firm is dependent upon the capital structure decisions.

Moreover, Abor (2005) revealed that there is a significant relationship between total debts and total assets that make up the capital structure, suggesting that firms depend more on debt as a way of financing which influenced financial sustainability. The composition on the capital structure in organizations is structured in terms of equity and debt distribution. Capital structure, being total debt to total asset at book value influences both profitability and riskiness of the firm (Handoo & Sharma, 2014). Companies have been struggling with the composition of capital structure for many decades in an effort to balance and be stable and it is not unique to the universities. The capital structure theory has been adopted for this study to help analyse how government entities including universities structure their capital and how they source their capital in order to maximize returns, while ensuring that they maintain the costs of capital that they don't supersede the benefits. The limitation of this theory is that it does not provide all of the answers; it does provide useful insights which will aid management in their decision-making process. Limitations notwithstanding, the theory touches on the significance of investment in equities which is linked to the third study objective focusing on investment income mobilization strategy and how it influences financial sustainability of the selected universities.

2.2.7 Resource Dependency Theory

The theory was first introduced by Pfeffer and Salancik (1970) with a viewpoint that external environment plays a pivotal role towards the sustainability of organizations (Baporikar, 2021). Additionally, the proponents of the model argue that organizations rely on other actors in the environment and that if the environment is not stable, then sustainability of an organization is threatened. It posits that organizations are embedded in networks of interdependencies are often reciprocative in nature. The strategy employed by this theory is that organizations manage their resource base and optimize their autonomy to achieve strategic objectives for sustainability. David and Cobb (2010) support this theoretical framework by emphasizing that resources are dependent on the internal and external activities of organizations that can only be understood by those who hold the power. Resources within higher education are ever changing with

diminishing government funding forcing institutions to operate on an increasingly constrained environment. This results in increased competition and desire for collaborations with the competitors forcing institutions to manage incompatible and competing demands (Pilbeam, 2012).

This theory supports donor funding strategy since universities like other organizations rely on the external environment for sustainability. In this respect, the sustainability of organizations in general and universities in particular is a function of the resources available at their disposal. The management of universities can only work towards achieving organizational short-term, medium-term and long-term academic and financial goals if well supported by a variety of human, capital and other organizational resources. Failure to which, the organizations are less likely to be financially sustainable. In addition to this, an organization might experience financial challenges due to over-dependence on single source of income, for example, an organization that depends on government funding may experience delays which may have negative implications on the operations of an organization (Mitchelle, 2018). This is amplified by Kenyan case where universities depend on government funding and any delays have led to stalled projects and delays in payment of staff dues.

2.3 Conceptual Framework

A conceptual framework is often a written or diagrammatic modelling of the anticipated interrelationship among variables of a study. It is usually developed from appraisal of extant empirical and theoretical literature and often incorporates the sub-construction of the variables (Mugenda & Mugenda, 2012), the conceptual framework for this study is illustrated in Figure 2.1.

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┌─────────────────────────────────────┐
│ Fees Revenue Mobilization            │
│   • Payment mode                     │
│   • Recovery strategy/methods        │
│   • Amount charged                   │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ Donor Fund Mobilization              │
│                                      │
│   • Research grants                  │
│   • Project grants                   │
│   • Academic scholarships            │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐         ┌─────────────────────────────┐
│ Investment Income Mobilization       │         │ Financial                   │
│   • Real estate                      │         │ Sustainability              │
│   • Stock                            │  ──────▶ │   • Net Assets ratio        │
│   • Fixed deposits and Treasury bills│         │     change                  │
└─────────────────────────────────────┘         │   • Current ratio change    │
                                                 └─────────────────────────────┘
┌─────────────────────────────────────┐
│ Consultancy Fund Mobilization        │              Dependent Variable
│   • University wide consultancy      │
│   • Departmental consultancy         │
│   • School/faculty consultancy       │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐         ┌─────────────────────────────┐
│ Linkage and Partnership              │         │ Government Grants            │
│ Mobilization                         │         │   • Annual Grants Budgets   │
│   • PPP                              │         │   • Actual Grants           │
│   • Academics                        │         └─────────────────────────────┘
│   • Collaborations                   │
└─────────────────────────────────────┘
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Independent Variables   **Moderating Variable**

Figure 2.1: Conceptual Framework

In the context of this study, the conceptual framework is the pictorial representation that indicates the dependent (financial sustainability) and independent variables (fees collection strategy, donor funding strategy, resources from investment strategy, consultancy resource mobilization strategy, linkages and partnership resource

mobilization strategy) and the moderating variable (government Grants) in a study with clear illustration of their relationship as indicated in Figure 2.1

The Figure 2.1 identifies the independent variables as: fees charged, donor funds, investments, linkages and partnerships as well as consultancies which all act together to affect the overall recorded level of financial performance in a university. The conceptual framework draws the picture between the independent variables and the dependent variables. As a variable, the fees collection strategy was measured in terms of the payment mode adopted by each university, the fee charged per student and how the fee can be recovered. On the variable of donor fund mobilization strategy, the focus was on how the grants, donations, projects and scholarships from the donors help in sustaining the financial position of the universities (Mirza &Javed, 2013).

To sustain the financial position of the universities, some universities are engaging in investments strategies so as to mobilize funds (Perkmann, King & Pavelin, 2011). Investments are done in real estate, stocks, fixed deposits and treasury bills that earn an interest as a source of income (Bogan, 2013). While on the study variable of consultancy fund strategy, its indicators include deposits at individual basis, university wide consultation or school-wide consultations which help in financial sustainability of universities.

2.3.1 Fees Revenue Mobilization

Universities charge fees for the services they offer including teaching, research and community outreach. Rationally, it is expected that the fees charged to students and other service beneficiaries should be commensurate with the cost of the services. Evidence has proved to be otherwise. Robinson and Sensoy (2013), for instance, stated that higher education institutions are presently charging higher fees as compared to the last few decades in an effort to sustain their study programmes. Higher education at the beginning of the 21st century has never been in greater demand, both from individual students and their families, for the occupational and social status and greater earnings it

is presumed to convey, as well as from governments for the public benefits it is presumed to bring to the social, cultural, political and economic well-being of countries (Robinson & Sensoy, 2013). Parents in rural areas can pay school fees for their children through other means besides relying on farming. Schools in rural areas can produce desired outcomes. In order to foster high school fees payment in rural areas, parents need to be enlightened and educated, so that they prioritized education in their budget

Niki, Alima, Suhaiza and Siti (2017) indicated that increasing tuition fee may not be a feasible revenue enhancement strategy for universities. This is because most students who attend public universities are not well off and when the fees are increased beyond a given threshold, the majority poor will be locked out of school and the few who would afford may not provide a critical mass for financial sustainability. This is especially the case because the average cost per unit per university student is high, and a critical mass must be attained for the university to benefit from economies of scale and economies of scope. Otherwise, the financial sustainability becomes difficult to achieve. (Niki, Alima, Suhaiza &Siti, 2017)

The trouble with the fees collection strategy for revenue mobilization is that it is not perfectly inelastic. A tremendous increase in fees is likely to put university education out of reach of most prospective college students and as such, this may actually reduce the fees rather than increase it. Dumestre (2016) for instance indicates that in the USA, higher education has become extremely expensive. Dumestre (2016) shows that it is financially unsustainable unless strategic re-engineering of university operations is instituted. He indicates that fee increases are outpacing the growth in median middle-class incomes and well as inflation, thereby pushing education out of reach for many prospective college students.

2.3.2 Donor Fund Mobilization

According to Koehn (2012), interest in the financial well-being of institutions higher education, whether public or private, for-profit or not-for-profit such as: regulatory

agencies, licensing officials, accreditation agencies, equity owners whether present or potential in the case of for-profit institutions funding, and other financial resource providers (e.g. donors) and recipients of institutions' service, the governance of projects has suffered sustainability due to poor community participation, low educational levels among households, undiversified households and poor understanding of governance

Wield (1997) explains that the loss of government resources to core activities has meant that universities and institutions of higher learning have increasingly turned to donor funding as a major source of obtaining financial resources to run core activities including university infrastructure, teaching and the development of academic and non-academic staff. Universities must develop strategies that align with the objectives of the donor, i.e private individuals, institutions and agencies, in order to benefit from the targeted donor funds. If care is not taken, Wield (1997) is of the opinion that universities can easily lose focus especially when single donors provide large amounts of the funding to university programmes.

In line with this concern by Wield (1997) universities must develop sustainable donor funding strategies that are broad enough to provide adequate resources without compromising on the core agenda of the university – teaching, research focus, innovation and community outreach. This calls for a trade-off that balances out the donor funds revenue with the need to sustain the university operations without compromising on the core agenda of the institutions. Most western countries have development arms and agencies some of whose funds are directed to funding of educational programmes. Some of these include USAID from the USA, JAICA from Japan and DAAD from Germany.

2.3.3 Investment Income Mobilization

Just like other organizations, universities engage in investments for future returns. An investment involves foregoing current cash flows to acquire future income generating assets such as real estate, financial securities, intangible assets, and tangible assets

(Bomberg & McEwen, 2012). Investment revenue is that income that comes from interest payments, dividends, and capital gains collected upon the sale of a security or other assets, and any other profit made through an investment vehicle of any kind within the university (Shipway, 2009; Bomberg & McEwen, 2012).

Investment income is likely to provide tremendous supplementary income to support the activities of universities. They are able to engage in investments given the academic cycles and that there are periods of time when they can access huge amounts from financial resources especially at the onset of academic calendars when large amounts of fees are paid. It is from these sums that a variety of investments can be made in financial and real assets to help generate interest, dividends, royalties, rent and similar associated incomes (Shipway, 2009). This is a critical strategy given that financial markets are increasingly vibrant and provide a wide variety of funding opportunities.

Provision of post-secondary education scholarships with incentives to meet performance, enrolment, and/or attendance benchmarks induced students to devote more time to educational activities and to increase the quality of effort toward, and engagement with, their studies; students also allocated less time to other activities such as work and leisure. Income generating activities and non-income generating activities in schools are significantly different in terms of category, student population, age, annual income and number of paid workers (Murage & Onyuma, 2015).

Investment income of education institutions is rooted in the portfolio theory where risks and returns must be balanced to ensure that the derived income is sustainable into the long run, in line with institutional expectations (Sharpe,1963). Optimal investment implies that the universities must adequately evaluate the available risks and returns before investing university resources into income generating activities that may assure such income as rent, royalties, dividends, interest, lease income and such like. If not well evaluated, investment income may dwarf investment costs and thereby cost the university the hard-earned resources.

2.3.4 Consultancy Resource Mobilization

Consultancy refers to the provision of expert knowledge to a third party for a fee (Vasi & King, 2012). Elaborating a consultancy resource mobilization strategy helps to avoid sending different messages to donors and to forestall in-house competition. It helps to avoid piecemeal efforts and to prioritize the need to strengthen capacities and efforts; creates a sense of ownership and accountability, thus leading to better-planned, up-front pipeline resources; helps in allocating resources where they are most needed; and ultimately leads to comprehensive programme delivery and impact. The activities of the executive head, the board and the legislative body constitute an enabling environment for successful resource mobilization (Shattock, 2010).

Universities in Kenya have set up consultancy arms which also double up in carrying out business activities outside the core activities of the institutions. University of Nairobi has for instance an arm called University of Nairobi Enterprise Service (UNES) while Jomo Kenyatta University of Agriculture and Technology has Jomo Kenyatta University of Agriculture and Technology Enterprises –JKUATES (CUE, 2021). The consultancies apply both by providing services to the public and the private sectors.

This is a critical avenue for revenue mobilization given the high level of technical skills available at the universities and is a way of bridging the gap between university education and industry practice. From the university's point of view, consultancy is critical and if properly and professionally handled, it can create a number of new commercially viable opportunities. In addition, it is instrumental in assisting to update the skills of the academic staff and bridging the gap between research output and applied research problems (Akinyemi, 2013).

2.3.5 Linkages and Partnership Strategy

Relationships and interactions between tasks, functions, departments in a university and other organizations, which promote flow of information and foster integration in the

achievement of shared objectives to promote university education (Vasi & King, 2012). Technological capabilities and financial resources are important predictors of organizational performance. Among external linkages, alliance with other firms and venture capital companies significantly enhances organizational performance. World class research universities are at the forefront of pioneering such partnerships. These partnerships have had a positive impact in financial sustainability of the learning institutions.

Another emerging approach of indirect financial resource mobilization emanating from linkages and partnerships is the public private partnerships (PPP). PPP financing is available for both services and university infrastructure. Common of the linkages in this approach include service contracts in which public sector entrusts private companies with providing some services provided traditionally by government such as maintenance of equipment and/or cleaning services and payment for these services are according to contracts, as well as management contracts in which the public sector entrusts private companies with operating infrastructure or providing management services according to contract.

PPPs have increasingly become popular because of the need to exploit the private sector efficiency in providing value for money for public engagements. Universities are increasingly using PPPs as an avenue for developing their infrastructure including laboratories, hostels, office buildings and classrooms. In Kenya, PPPs are co-ordinated at the Ministry of Finance's Treasury through a Public Private Partnership Directorate. It formulates the guidelines to be used in engaging in PPP financing activities by public sector entities like universities (GoK, 2021)

2.3.6 Government Grants

The moderating variable refers to a variable that can strengthen, diminish negate or alter the correlation between the independent and dependent variable. It explains the relationship between the two variables by providing additional information regarding the

correlations in quantitative research (Allen, 2017). Government is a provider of resources to universities. There are multiple universities competing for government resources, therefore a single university has greater dependency upon the government in case of public universities as opposed to private universities who depend on self-generated resources as well as external support.

According to European University Association, financial sustainability will remain a central concern for universities worldwide. Only universities that have financially sound strategies and stable cash flow will be able to fulfil their mandate and respond positively to the current challenges experienced by universities globally. Ultimately the main objective behind financial sustainability is their ability to attract funds both from government and from other sources to achieve financial sustainability and hence their mission.

Governments across the world and even the United Nations, give a lot of attention to education. Most of the developmental agenda of governments and supranational have provisions with respect to not only basic education, but sometimes tertiary and technical education as well. Given the importance of education in the governments' development agenda, governments often give out financial support to ensure financial sustainability of educational programmes (Akinyemi, 2013).

2.3.7 Financial Sustainability

Financial sustainability is the ability of an entity to maintain or improve financial viability over time to assure continued and long-term achievement of mission, goals and objectives of an organization (Shipway, 2009; Barrow & Rouse, 2016). Financial sustainability is part and parcel of an entity as a going concern with no risk of failure or material rescaling of its operations. It accordingly touches on all aspects of the financial health of a business including operating liquidity, long term solvency, profitability, leverage and risk exposure, turnover and revenue generating ability as well as financial

position and financial adaptability. It falls at the core of the value adding chain of an entity (Barrow & Rouse, 2016).

From the university funding perspective, Mandanici and Pace (2016) indicate that financial sustainability relates to the interaction between three principal factors. These are identified as leverage, financial autonomy and liquidity. The value adding chain of universities revolve around a triplet of concepts namely teaching, research and innovation as well as community outreach. This implies that to be financially sustainable, the universities must maintain financial health in terms of financial performance, financial position and financial adaptability from these three activities. The universities are increasingly finding it very hard to maintain reasonable financial performance, attain health financial positions and remain financially adaptable into the future because of the decreasing financial support from governments (Almagtome, Shaker, Al-Fatlawi and Bekheet, 2019). Mandanici and Pace (2016) indicate that in Italy, small and medium size universities present the lowest prospects of financial sustainability.

Sherstobitova *et al.* (2020) propose models of evaluating financial sustainability of universities. They observe that there are limited financial resources among the universities across the globe and that this is particularly so in South Africa where they carried out the study. This is especially dire because the government in South Africa has called for free education. Sherstobitova, *et al.* (2020) accordingly examine financial ratios as indicators of financial sustainability among the universities in South Africa. They identify five categories of financial ratios for this purpose. These are financial performance ratios, ratios indicating liquidity, asset management ratios, debt management ratios as well as ratios indicative of reserves. Strategy, operating sustainability, risk control and investment are other four aspects of financial self-sustainability that are explored by the research. The findings indicate that financial performance ratios are instrumental in three of these four aspects of financial sustainability being investments, strategy and operating sustainability. Further, the findings showed that reserve ratios are critical in two of the four aspects of financial

sustainability. Finally, risk control incorporated three categories of financial ratios being liquidity ratios, asset management ratios and debt management ratios.

2.4 Empirical Literature

In this section, there is evaluation of the extant studies with respect to financial resource mobilization among universities in Kenya and the expected financial sustainability among these universities. This relates to the researchers, the scope of the studies, their objectives, methodology as well as findings and the interrogation thereof. This is useful in identifying empirical research gaps.

From a general sustainability perspective, Nalwoga (2021) evaluated the financial sustainability of private universities in Uganda in the context of the Covid-19 pandemic. Using a dataset of universities registered by the National Council for Higher Education, the study focused on 34 universities that qualified from a list of 39 registered universities as at the year ended December 2019. The study relied on a composite index of financial sustainability and ended up with four distinct groups of financial sustainability. These were absolute sustainability, normal sustainability, unstable and critical financial sustainability. From the findings, 19% of the universities are financially sustainable while the rest fall in the unstable and financially unsustainable categories. The results reflect the cross-section of the situation facing many universities across the globe which calls for strategies that can improve their financial sustainability including financial restructuring, revenue stream diversification and possibly government support.

Baligidde (2010) explores the strategic points of view of financial management among institutions of higher learning amidst dwindling financial resources. He provides a five-step institutional revenue diversification model directed at institutions of higher learning. These are specified as embracing the principles of corporate financial management and funding, coming up with income generating units and activities, strategic mergers and acquisitions, export commercialization of education and involving students and several other university stakeholders in resource mobilization. In essence, Baligidde (2010)

recommends that financial sustainability of universities and other institutions of higher learning calls focusing on key priorities, financial restructuring, administrative restructuring and revenue diversification. These strategies for the main themes in the evaluation of empirical literature with respect to fee, donor funding, investment and other avenues of resource mobilization and how they impact financial performance in general and financial sustainability in particular.

In Tanzania, Memba and Feng (2016) indicate that the funding of post-secondary school education is thought of as being a vital feature in leading towards the nation's development goals and agenda. They further argue that it is for these motives that Tanzania has been at the forefront in financing its university education since its independence. As noted from other countries, Tanzania has similarly experienced dwindling funding of university education from the central government. Memba and Feng (2016) attribute this turn of events to diminishing resource capacity as well as the high competition for the scarce financial resources from other sectors of the economy that require government funding. This has forced universities to explore a variety of other funding options so as to remain financially sustainable. Memba and Feng (2016) sought to evaluate the impact of the trends of enrolment, budget and actual expenditure in higher education in Tanzania to sustainable human capital investment. The study covered an eleven-year period from 2005 through 2015. The study relied on secondary data. This data was collected from the Ministry of Education and Vocational Training (MoEVT) budgets and other records of actual expenditure. Records of student enrolment from the same ministry were also used to extract student enrolment data. From the findings, Memba and Feng (2016) show that there was an increasing trend with respect to both the financing from the government and other sources as well as the enrolment by students in universities in the country. When the case is compared relative to the other East African countries including Kenya, Uganda, Rwanda, Burundi and Zambia, it is seen that the financing and enrolment numbers in Tanzania are still relatively low. It is from this standpoint that the study recommends diversification of university education

funding away from central government funding to other alternative financing approaches.

2.4.1 Fee Collection Strategy and Financial Sustainability

Robinson and Sensoy (2013) investigated the financial trends in higher education in the United States. The study covered 27 years over 1984 through 2010 and had a population of 837 funds. The study found out that higher education institutions are presently charging higher fees as compared to the last few decades in an effort to sustain their study programmes. Higher education at the beginning of the 21st century has never been in greater demand, both from individual students and their families, for the occupational and social status and greater earnings it is presumed to convey, as well as from governments for the public benefits it is presumed to bring to the social, cultural, political and economic well-being of countries.

Lee, Kim and Lee (2020) carried out a study to establish the influence of tuition fee collection and control policy on financial management of universities in Korea. The study was carried out using data from 93 universities all of which were private universities in Korea. The study covered a period of 10 years running from January 2006 through December 2015. The independent variables were tuition fees and government subsidies, and it was the intention of the study to show how these influenced operating expenses, labour cost and other university expenses. The study was rooted in the agency theory of financial management. The model of analysis the Least Squares Dummy Variable (LSDV) evaluation based on polynomial regression. The findings revealed that while fees were increasing in Korea, the rate of increase decreased after the year 2011 at which time, the rate of government subsidies were also increasing. Other university cost items that were shown to increase were labour costs, operating costs as well as student support fees. Those that remained relatively stationery were research costs, laboratory fees and investment expenditures.

Pavlov and Katsamakas (2019) evaluated the long-term sustainability of tuition-based colleges. These colleges have tuition fees as their main source of revenue. These were small colleges analysed from the perspective of fast and accelerating demographic-occasioned changes for the market that is focused on undergraduate studies in America. The study is rooted in systems theory with the assumption that higher education institutions are holistic in the context of complex service systems. Using a computational systems dynamics model, the study modelled the inter-relationship between available facilities, teaching staff, tuition revenue, financial and service outcomes of the colleges. The results of the study showed that when looked at as a service system, a regular college incorporates complex cause and effect feedback loops and that sustainability solutions like facility improvements and variable cost reduction help improve short term financial viability of the colleges but are inadequate to assure long term financial sustainability. This calls for a strategic approach to planning to take into account, long-term, medium-term and short-term sustainability variables so that the colleges are financially viable through all the time scopes.

Ngwenya (2016) conducted a study on the best way of collecting fees without infringing on the liberties of learners in Zimbabwean primary schools. The objective of the study was meant to establish the best way of collecting fees in primary schools without infringing on the liberties of learners using the grounded theory design as the government of Zimbabwe could no longer sustain the education for all policy vis-à-vis the financial demands. This thrust was achieved by way of an internet survey design meant to generate ideas. Information-rich respondents were purposefully sampled and thereafter a snowball sampling technique was employed to identify the twelve participants giving a summation of seventeen. Most respondents indicated that tuition in primary schools was only free in the rural areas not in urban schools considering the exorbitant levies parents pay inclusive of the private costs incurred.

With respect to the need to raise university fees as a means to university revenue enhancement, Ahmad, Ismail and Siraj (2019) evaluate the financial sustainability of public universities in Malaysia by relying on the opinions of the university officials.

They examine the senior officers' views on the critical revenue diversification and expense control practices. The study relies on the use of a questionnaire administered to 275 senior academic administrative staff from a sample of 20 public universities. The study had a response rate of around 25%. From the findings, there is a clear view that the universities are facing financial sustainability problems. With respect to raising university fees, the study finds that this is not a feasible revenue boosting strategy. The study suggests that there is need for full utilization of the resources available at the disposal of the universities.

Chitsama (2016) conducted an analysis on the effects of low school fees collection in running schools using Nakuru County in Kenya as the basis of the case study. The main objective of that dissertation was to study on how low school fees payment in schools affects school's administration and finance. The study was done through qualitative research methods where 100 respondents were given questionnaires and four school heads were interviewed in one ward on Nakuru County. From the research analysis it was noted that school heads were facing numerous challenges that led to them feeling inferior as they compared themselves with their counterparts in other schools such as those in urban areas. The results of the research showed that parents in rural areas can pay school fees for their children through other means besides relying on farming. Furthermore, the study was trying to give an insight on how the problem of school fees collection can be solved so that schools in rural areas can produce desired outcomes. In order to foster high school fees payment in rural areas, parents need to be enlightened and educated, so that they prioritized education in their budgets. From the study undertaken, it showed that other parents have potential to pay school fees through their possessions. The study articulated strategies that the school's heads can employ in order to raise school fees from the parents, such as engagement of debt collectors, inviting parents to school for payment plans and involvement of school development committees to encourage parents.

2.4.2 Donor Funding and Financial Sustainability

Koehn (2012) conducted a study on donors and higher education partners, which comprised a critical assessment of US and Canadian support for transnational research and sustainable development. The objective of the study was to explore the potential benefits and risks of partnering transnationally for contextually informed research and sustainable development from the perspective of Southern and Northern American higher education institutions. Comparative analysis of datasets compiled from AUCC- and HED-managed sources that encompass 74 CIDA-supported and 186 USAID-supported university partnerships active during 2007–2009. The study indicated that interest in the financial well-being of institutions of higher education, whether public or private, for-profit or not-for-profit— such as: regulatory agencies, licensing officials, accreditation agencies, equity owners whether present or potential in the case of for-profit institutions funding and other financial resource providers (e.g. donors), recipients of institutions' services (students and their parents), faculty members and administrators, as well as the public at large.

Lungo, Mavole and Martin (2017) examined the determinants of project sustainability beyond donor support in Mansa diocese, Zambia. That study was prompted by alleged failure by communities to perpetuate governance project outcomes after Caritas Norway's financial and technical support in Mansa Diocese, as part of efforts to improve community projects and their sustainability. The researcher used a descriptive study design to conduct this study. Two parishes from Mansa Diocese were sampled. Purposive and random sampling techniques were used to select a sample size of 96 key informants and households respectively. The researcher collected data using questionnaires and interview guides. Both the qualitative and quantitative data were analyzed separately, and results converged during interpretation. Quantitative data were analyzed using STATA and were summarized using bar charts, frequencies and percentages. The qualitative data were analyzed and presented using narrative description. The findings show that the governance project has suffered sustainability

due to poor community participation, low educational levels among households, undiversified households and poor understanding of governance.

Cheboi (2014) conducted an investigation on the effect of donor funding on the organizational performance of government ministries in Kenya. The objective of the study was to establish the relationship between donor funding and performance of government ministries in Kenya. The descriptive study targeted a population of 42 government ministries that existed during the coalition government in the five-year period between 2008-2013. The study used secondary data sources from the Treasury and Ministry of Devolution and Planning for 2008/2009 to 2012/13. Simple linear regression analysis was conducted. The findings, at 95% confidence level, show that there were significant negative linear association between donor funding and performance. The study concludes that on average, there is a negative linear relationship between donor funding, total debt (control variable) and performance score based on annual government ranking.

In America, Millett (2020) evaluated the ecosystem of support and financial sustainability of sponsored colleges. The study drew from a population of college promise programmes which are oriented to assist students to commence and complete their college degrees and post-secondary certificate programmes without having to resort to high levels of student college debt. The population included colleges supported by donor funds from non-governmental advocacy and campaign institutions. The study tried to understand the strategies that the sponsorship programs can use to enhance the financing while accommodating more diversity among the post-secondary student population. It further tried to find out how existing and new financing models could be aligned to exploit the funding support required to develop and implement the targeted student population as they progress to, through and beyond college education. It recommended a variety of funding opportunities required to sustain the sponsorship programs.

Murray (2013) indicated that donor funds and philanthropy played a significant influence on university-based scientific, engineering, and medical research in the US. According to Murray (2013), these contribute huge sums of money in excess of US$4 billion annually and are geared towards the financing of operations, endowment, and infrastructure geared towards research. Murray (2013) showed that when pooled with endowment revenue, university research financing from science philanthropy tops US$7 billion on an annual basis. It is noteworthy that this significant contribution to US scientific competitiveness originates from private foundations and also come in as gifts from individuals. The Murray (2013) analysis shows that science philanthropy brings in nearly 30% of the annual research funds of those in the top universities. Despite these significant finances from donors for scientific research, Murray (2013) goes on to show that science philanthropy still falls below by the enormous rise of central government research funding as well as industry financing of scientific research. Donor funding and philanthropy's contribution to the general levels of scientific financing and, more significantly, the distribution of philanthropy across various types of research are yet to be well understood. This motivates Murray (2013) to provide the first empirical evaluation of the role of science philanthropy in American research universities. Accordingly, the study finds that science philanthropy is heavily biased towards transnational medical research. The study recommends the need to also focus the science philanthropy and donor funding to other sectors of scientific inquiry.

Nwakpuda (2020) indicates that donor funding and philanthropic support of university and other higher education is increasingly attracting the attention of academic fundraisers and scholars of philanthropy. Nwakpuda (2020) contends that the academy in general and the research and academic fields of science, technology, engineering, and math (STEM), in particular, are in essential need to better comprehend their major donors, their objectives and more critically the sustainability of such donor funding. Nwakpuda (2020) analyses a distinctive database of announced gifts to universities and other institutions of higher learning for twenty-two years running from 1995 to 2017. The objective was to appraise the relationships between major donors' idiosyncrasies

and the size of their gifts to STEM and all other academic disciplines and areas of research. Based on causal research design, the study uses quantile regressions to carry out the analysis. The findings indicate that the major donors to STEM are disproportionately entrepreneurs. These entrepreneurs, the findings indicate, are on average most likely to give larger gifts to STEM than other major donors. The findings further indicate that there is a positive and statistically significant association between major donors' entrepreneurial status and the amounts given as gift amounts at the 99th quantile which is valued at least US$100 million. Nwakpuda (2020) finds this to be very critical especially in the era when the main funding sources for academic STEM are dwindling. The donor and philanthropic funding is therefore one source universities can leverage on to ensure financial sustainability and assure that their scientific activities are perpetuated into the future.

2.4.3 Investment Income Funding and Financial Sustainability

Barrow and Rouse (2016) investigated financial incentives and educational investment. The study particularly focused on the impact of performance-based scholarships on student time use. This study is in line with the regression discontinuity theory of Thistle, Thwaite and Campbell (1960) which tries to check the link between *ex ante* education interventions and *ex post* performance of students. It was revealed that provision of post-secondary scholarships with incentives to meet performance, enrolment, and/or attendance benchmarks induced students to devote more time to educational activities and to increase the quality of effort toward, and engagement with, their studies; students also allocated less time to other activities such as work and leisure.

Rambo (2013) investigated the effect of school-based income generating activities on the financial performance of public secondary schools in Rwanda. The study adopted the static group comparison design; which has two groups' project beneficiaries and non-beneficiaries, which are not randomly constituted. The study established that income generating activities and non-income generating activities in schools were significantly

different in terms of category, student population, age, annual income and number of paid workers.

In South Africa, Kotze and Ferreira (2020) sought to evaluate the possibility of financial sustainability and profitability of university high performance centres by comparing them with such units for commercial, private and government-operated entities. They note that universities in South Africa are under immense pressure to be financially self-sustainable given the dwindling government funding and therefore they strive to seek funds from third stream revenues. In this context, university high performance centres are seen as strategic revenue generating units for the universities and are expected to become self-sustainable after the initial stages of funding by the universities. They are expected to be profitable and to use their retained earnings to invest in capital assets, make facility improvements, renovations and major repairs and generally fund the day to day running and operating expenses. The study relies on variance analysis of financial ratios of the university high performance centres against the ratios of their corresponding counterparts among the commercial, private and government operated centres. The findings indicate that when corporate financial management practices are incorporated and the centres are given operational freedom with less interference from the parent university, the facilities attain a reasonable degree of financial self-sustainability.

Murage and Onyuma (2015) analyzed the financial performance of income generating activities in public institutions of higher learning using a case of Egerton University in Kenya. Secondary data was collected from financial statements from which key financial ratios were computed and used to analyze the financial performance of the income generating activities over a period of ten years. Empirical results indicated that the Module II study programmes are the most profitable income source. Furthermore, the income generating activities recorded a 15% rate of return on investment and a liquidity ratio of over three years. However, the declared surpluses did not take into account the personnel emoluments for the university staff working in the income generating activities. There is a need for public universities to maintain accurate and complete sets of financial statements for informed decision-making. This should follow

the public sector financial reporting standards for public universities and the international financial reporting standards for the private universities.

Musau (2016) investigated the effect of investment decision on financial performance of savings and credit cooperatives in Kitui central sub-county. The study adopted an empirical study design for a time series data of a ten-year period from 2006-2015. The study findings indicated that replacement, renewal and, research and development decisions, positively contributed to SACCO performance as measured by dividends while expansion decisions had a negative contribution. This shows that the investment strategy adopted dictates the amount of returns an organization gets.

Alshubiri (2020) set to analyse the relationship between financial sustainability indicators of universities and foreign direct investment among the OECD countries. These comprised 26 countries. The study relied on income generation vis-à-vis the operational costs as a proxy for financial sustainability. This according to Alshubiri (2020) incorporates not only financial self-sufficiency but excludes the need to seek outside financial help to finance such operations. Alshubiri (2020) shows that this is dependent on investment attractiveness. Financial sustainability was measured by current tertiary education expenditure (financial expenditure), university life expectancy (efficiency) and gross enrolment tertiary ratio (endogenous growth). The study relied on quantitative data gathered from the World Development Indicators of the World Bank for a period of 15 years running from 2001 through 2015. It was anchored in the pecking order theory of funding organisations. For analytical purposes, the generalized method of moments was used at 95% confidence interval to test the hypotheses. The findings revealed a positive relationship between financial sustainability and direct foreign investment when sustainability is measured by efficiency and expenditure. When gross tertiary education enrolment was used, the association became negative. In addition, when university life-cycle was used, the association became null. The conclusion is that the indicators of financial health are inadequate to explain educational activities of universities and the resultant financial sustainability. That there is need to incorporate

other educational activities like research output, community outreach, quality of infrastructure, risk exposure, productive capacity and student achievement.

2.4.4 Consultancy Resource Mobilization and Financial Sustainability

Achamkulangare (2014) conducted an analysis of the resource mobilization function within the United Nations system. The aim of the study was to map out the existing resource mobilization strategies, identify experience and good practices related to their implementation, explore the coordination within and among entities in their headquarters locations and in the field, review the functioning and staffing of resource mobilization units/offices; and seek to understand the perspective of major member state contributors. From the 28 organizations reviewed, five do not have a formal, comprehensive organization-wide strategy for resource mobilization, although most have policies and procedures in place; five are in the process of developing their strategies. Elaborating a strategy helps to avoid sending different messages to donors and to forestall "in-house" competition; helps to avoid piecemeal efforts and to prioritize the need to strengthen capacities and efforts; creates a sense of ownership and accountability, thus leading to better-planned, up-front pipeline resources; helps in allocating resources where they are most needed; and ultimately leads to comprehensive programme delivery and impact. The activities of the executive head, the board and the legislative body constitute an enabling environment for successful resource mobilization.

Anderson (2014) in South Africa noted that the two primary assignments for professors in any institution of higher learning is tasked with the generation of new knowledge and teaching responsibilities in many STEM (science, technology, engineering, math) disciplines. Due to inefficiencies within institutions of higher learning throughout the world, the management within these institutions has been using the research work drawn by the professors to tackle different social issues. And in return, the institutions of higher learning have been compensated for their efforts. Many governments pay highly for academic research done by these institutions of higher learning. This has become a

second source of income which comes in handy to cater for the budget deficits as Shattock (2010) noted in the book titled 'Managing successful universities'.

Rodrigues, Wainaina and Mwangi (2006) conducted a study on income generation in public universities in Kenya as the main objective of the study. The study noted that revenues from industry and commerce are becoming an important source of income for universities. These sources are gradually accounting for a larger proportion of the total income. The generation of this income, along with certain other activities, has sometimes been referred to as 'academic entrepreneurship'. The study also noted that University of Nairobi (UoN) has continued to receive reduced financial allocations from the Kenyan government than the estimated expenditure. Hence the institution has been accumulating debts over several years and this trend will continue as a result of the strong indications that the government will no longer be able to fully finance public universities. In an attempt to bridge the gap between the budgetary allocations and actual expenditures, the university established University of Nairobi Enterprises and Services Ltd. (UNES) in 1996 as its commercial arm and charged it with the responsibility of promoting and coordinating income-generating activities in the university. The UNES came up with strategies that are income generating in nature such as pressing enrolment for Module II students and establishing consultancies that earn the university an income and enables the sustainability of the university's activities.

According to Ahmad, Soon and Ting (2015), education institutions of higher learning have learnt to come up with numerous income generating activities owing to their limited funding from respective governments. The activities serve as additional income to carry out their teaching, research, innovation and community outreach activities. This is particularly so in Malaysia where Ahmad, Soon and Ting (2015) undertook their study. They focused their study on activities undertaken by academic members of staff to generate additional finances for their universities. They observed that academic members of staff of universities are more often than not in charge of income generating activities due to their wide scope of work that goes beyond teaching. The study was done as a qualitative study relying on interviews to provide insights into the activities of

the academic staff members of universities. The interactive model of data collection was therefore employed. The findings revealed that the two main extra revenue generating activities were research and consultancy. The findings further revealed that research output commercialization contributed the most amount of revenue. It was further revealed that consultancy income provides a big percentage of income arising from this commercialization. The revenue generating activities of academic staff members of universities in Malaysia were shown to be very critical in financial sustainability of public universities in the country.

Just like is the common theme from most of the researchers on financial sustainability of universities, Dovey and Rembach (2015) confirmed that higher education is facing financial challenges emanating from reduced financing from central government in Australia. They observed that despite commercialization of education through such programmes as online learning, the challenges still persist and surprisingly, universities management strategies have not responded to these changes and that governance strategies remain rigidly similar to those that have existed for ages. Accordingly, Dovey and Rembach (2015) did an experiment to offer an alternative approach to management of academic programmes in universities to fit contemporary times and possibly enhance financial sustainability into the long term. The study used action research design and engaged a wide range of stakeholders in the university education industry including the government. They showed that entrepreneurship and consultancy activities are likely to improve financial sustainability of universities and institutions of higher learning.

2.4.5 Linkages and Partnership Strategy and Financial Sustainability

Lee, Lee, and Pennings (2013) conducted an investigation on internal capabilities, external linkages, and performance of internal capabilities. Their aim was to understand how the university-industry collaboration project organizational strategy is associated with the performance of collaborations. The study targeted IT firms in Korea. The study used both primary and secondary data. External linkages were captured by partnership-based linkages and sponsorship-based ones. Partnership-based linkages were measured

by strategic alliance with other firms including venture capitalists, participation in venture associations, and collaboration with universities or research institutes. Sponsorship-based linkages consisted of financial and non-financial support from commercial banks and the Korean government. The competitiveness of products and services indicated organizational performance. The study also showed that technological capabilities and financial resources are important predictors of organizational performance. Among external linkages, alliance with other firms and venture capital companies significantly enhances organizational performance.

Edmondson *et al.* (2012) conducted a study on making industry-university partnerships work in Uganda. The aim of the study was to find out how university partnerships work. The study targeted respondents from Makerere University. The researcher used a descriptive study design to conduct this study. The study noted that universities and industry have been collaborating for over a century, but the rise of a global knowledge economy has intensified the need for strategic partnerships that go beyond the traditional funding of discrete research projects. It also noted that world class research universities are at the forefront of pioneering such partnerships. These partnerships have had a positive impact on financial sustainability of the learning institutions.

Mungai and Wanja (2011) examined the performance of university-industry collaborations. Using descriptive design, the study revealed that the organizational strategy is associated with the performance of the collaboration. University-driven collaborative projects not benefiting from public grants are more likely to develop outcomes that match or are above the previously defined ones. Typically, such projects do not run smoothly as they encounter unexpected and severe technical problems while being carried out. In contrast, industry-driven projects, dealing with technological problems related to product development, in which firms participate in the design, performance and finance activities, as well as invest in several means to learn and to transfer knowledge, are more likely to lead to results that are absorbed and used by participating firms.

Orozco-Quintero and Berkes (2010) conducted a study on the importance of linkages and diversity of partnership and how they affect sustainability of community-based projects. The study was conducted in Mexican community-based forest enterprise. The main objective of this study was to determine the pervasiveness and significance coordinating various parts of institutional and organizational interactions across multiple levels for the management of a community forest enterprise, the study used a case study of San Juan Nuevo (SJN) enterprise in Michoacán, Mexico. The data were collected using structured questionnaires. The targeted population of this study was 100 respondents. The study used discussion of community-based development strategy in the confines of socio-political context. The study understood the complexity of cross-scale institutional and organizational linkages and their importance in ensuring that the resources are sustainable and properly managed. The study identified that cross-scale partnerships is critical to ensure that there is overall growth in the community. In the face of uncertainty about resource ownership and absence of legal jurisdiction, cross-scale partnerships were not only important, but vital to the general achievement of the company. These varied partnerships and interactions allowed solid institutional strategies to assist preserve the resource base and generate socio-economic growth for the communities.

2.4.6 Grants and Financial Sustainability

In Pakistan, Alderman, Kim and Orazem (2003) provided a case where the Balochistan Province of the country started two pilot initiatives to generate the creation of private schools targeting poor girls. The study used randomized assignment to form two groups the treatment and the control groups. These were then used to measure the effectiveness of this programme by the Balochistan Province. The case indicated that the initiatives had relatively failed in the rural areas despite their success in the urban areas. The success of the urban schools stemmed from a large pool of school children which the government schools were not serving. Besides the large pool of children, the urban private schools also benefited from availability of tutors, better experienced school

operators, higher income levels for parents as well as better educated parents. From the financial perspective, the urban schools were largely self-sustainable and if not, they need only minimal government subsidy. The complete opposite was true for the rural schools where very few schools could survive as rural private schools. Greater government subsidy is required to make the rural private schools to be financially sustainable.

In Italy, Meali and Rampichini (2012) evaluated the consequences of university grants by relying on regression discontinuity designs. They investigated the impact of Italian university grants on student dropout. According to Meali and Rampichini (2012), qualified applicants usually obtained a grant if they came from a family whose financial or economic indicator was below a specified threshold determined by the government. Accordingly, the grant apportionment tenet is based on the regression discontinuity design. The study used a difference-in-difference type assumption to identify and establish the influence away from the established cut-off point. The findings of the study indicated that at the cut-off point, the grant is an effective instrument of avoiding poor students from dropping out of higher or university education. The findings further revealed that this effect of the grant increasingly tends towards insignificance as the level of poverty of the university students increasingly move away from the cut-off or threshold point.

Bozeman and Gaughan (2007) assessed the effect of research grants and contracts on the nature and magnitude of academic staff research and technology engagement with industry. The research especially focused on how engaged academic staff members of universities are and their technology activity involvement with the associated industries. The study was focused on the contribution of industry and government-oriented grants on how the academic staff are involved in the industry. Additionally, apart from examining the sources of university grants, the research controlled for numerous of response factors including: scientific field, research center association, tenure position, and sex. The findings were indicative of independent influences of grants and contracts on industrial activities. According to the findings, grants and contracts from the

associated industry have a significant influence on academic researchers' inclination to associate and work with the industry. This propensity is measured by an industrial involvement index scale. Government-sponsored grants also have an effect in increasing work with the industry, albeit a more modest one. In addition, Bozeman and Gaughan (2007) showed that those with additional grants and contracts are bound to have a greater affinity for industrial involvement than those who have fewer such contracts. The findings revealed that this holds even when indicators of productivity and career stage are considered in the regression equations. Bozeman and Gaughan (2007) also considered whether delivery of grants and contracts is best identified as a predictor of industrial involvement or just an additional form of industrial involvement. This is based on factor analysis and nested multivariate modelling to compare effects.

In Italy, Muscio, Quaglione and Vallanti (2013) indicated that there was an increasing political burden on universities to strengthen their collaboration with industry and to broaden their own research financing alternatives, in an environment associated with swelling constrictions on public expenditure. It is unclear however in the context of Muscio *et al.* (2013) if the successful accomplishment of such political expected results is in tandem with restraint on government funding. This, they indicated, called for further research to ensure clarity and ascertainment. As a matter of fact, Muscio, Quaglione and Vallanti (2013) indicated that there was a limited empirical research finding with respect to whether, and to what extent, government financing influences the external financing alternatives available to universities in particular and institutions of higher learning in general. This was especially the case for those institutions related to research and consulting activities. The study used a set of Probit and Tobit panel data models approximated on financial data for the entire population of university departments in Italy engaged in research associated with engineering and physical sciences. The findings revealed that government financing to universities and institutions of higher learning complemented funding from research contracts and consulting. This ultimately contributed to the increasing universities' collaboration with industry which in effect activated knowledge transfer processes. The findings further showed that grants

motivate academic members of staff to get involved with industry activity. This, according to the findings, helped boost financial sustainability of universities in particular and institutions of higher learning in general.

2.5 Critique of Empirical Literature

Several empirical studies have been reviewed. All these have been instrumental in revealing the association between funding strategies and financial sustainability of universities globally, regionally and even in Kenyan context. They however have presented some challenges. These contributions and limitations are reviewed in this section.

Ngwenya (2016) conducted a study on the best way of collecting fees without infringing on the liberties of learners in Zimbabwean primary schools. The study used grounded theory design which was well applicable to the study. The study was instrumental in revealing how fee collection need not disadvantage the learners. Despite the usefulness of the study, it used an internet survey design. Such a design was unable to reach the challenging population in this case the poor parents in the rural areas who pay fees. In addition, it focused on primary education yet in reality the funding challenges of primary education are bound to be different from those of universities and other institutions of higher learning and research. It also failed to identify the influence on financial sustainability.

Chitsama (2016) conducted an analysis on the effects of low school fees payments in running schools. The study was a survey of schools in Nakuru County, Kenya. The main objective was to study how low school fees payment in schools affected school's administration and finance. The study was instrumental in revealing the association between fee payment and financial sustainability. On the flip side however, the study was not clear on the number of the targeted respondents of the study. In addition, just like Ngwenya (2016), the study focused on schools and excluded institutions of higher

learning, research and universities yet these are bound to have varying financing challenges from those of schools at lower levels of learning.

Lungo, Mavole and Martin (2017) examined the determinants of project sustainability beyond donor support in Mansa diocese, Zambia. This was instrumental in understanding the sustainability of projects in general and university projects in particular especially in the era of dwindling financing of universities. Despite this contribution, the study fell short on a number of fronts. First, the study used the community as the target population which was applicable to the study, yet the projects internal attributes and idiosyncrasies would have formed a better basis of unit study. In addition, the study was limited to a small area comprising a diocese which makes the generalizability of the findings somehow limiting and limited to the attributes of that locality and diocese objectives.

Cheboi (2014) conducted an investigation on the effect of donor funding on the organizational performance of government ministries in Kenya. This was an instrumental study indicating how donor funding affect the not-for-profit and governmental organisations under which universities fall. It helped understand sustainability of donor funds especially in the era where donor communities are increasingly asking for fund accountability in the context of Kenya's runaway corruption incidences. It also provided a contextual angle for which this current study can be anchored. On the flipside however, the study had a narrow focus, only dealing with donor funding yet in reality governmental agencies and universities have a variety of sources of funding. Besides, the study focused on government ministries in general and failed to capture the idiosyncrasies of the education sector particularly universities and other institutions of higher learning.

From a theoretical angle, Lee, Kim and Lee (2020) tried to apply the agency theory of Jensen and Meckling (1976) to establish influence of tuition fee and control policy on financial management of private universities in Korea. The findings were critical in indicating how fees were increasing at the same time over which government subsidies

were increasing. Indeed, it would seem that managers in the private universities use their discretion to benefit private interests at the expense of the government. This is consistent with the expectations of agency theory. Despite this insight from the study, it used least squares dummy variable evaluation based on polynomial regression. It would seem that this model would have been most appropriate for application of regression discontinuity theory of education interventions of Thistle, Thwaite and Campbell (1960) as opposed to agency theory. In addition to this, the study had its focus on private universities and therefore has findings that cannot be generalizable to public universities. Contextually, it is reliant on the idiosyncrasies of the Korean education sector which are likely to be different from a fundamental point of view from those in developing countries like Kenya.

Barrow and Rouse (2016) investigated financial incentives and educational investment, specifically, the impact of performance-based scholarships on student time use. The study used survey data, but it did not indicate if the number of target population was so big to carry out survey data. This study was instrumental in evaluating the regression discontinuity theory of Thistle, Thwaite and Campbell (1960) which tried to check the link between *ex ante* education interventions and *ex post* performance of students. It indeed showed that scholarship interventions eventually help the beneficiary students. Despite this critical literature gap, the study failed to take into account other forms of funding of university education like tuition fees, donor funds and government subsidies. In addition, it failed to check the connection with financial sustainability and had a sole focus on student welfare. This leaves a literature gap that requires investigation.

Rambo (2013) investigated the effect of school-based income generating activities on the financial performance of public secondary schools in Rwanda. The study adopted the static group comparison design which was clearly applicable to the study. In spite of the insights that emanated from the study, it can be critiqued on a number of bases. Firstly, it focused on Rwandan schools. The limitation here is that schools have different financial needs from those of universities and governments have an inclination to provide basic education for all in line with the millennium sustainable development goals. This implies

that schools can have government funds as being sustainable into the long run. Secondly, it focused on financial performance of schools yet in reality, schools are geared more towards social welfare than financial performance and that financial sustainability should be more of a goal for them than profit since they are largely non-profit oriented organizations.

In Kenya, Murage and Onyuma (2015) analyzed the financial performance of income generating activities in public institutions of higher learning using a case of Egerton University. This was an important literature addition given that universities are increasingly being encouraged to diversify their income streams to various areas including income generating activities. The study however fell short on a number of fronts. Firstly, it relied on a case study that was Egerton University. The study did not give out a clear reason for choosing Egerton University as the case study and besides, it is difficult to generalize the findings that emanate from a case study to a wider variety of universities and institutions of higher learning. Secondly, it chose financial performance as the dependent variable yet in reality, public universities do not have financial performance as a strong objective. It should rather have focused on either budgetary performance or financial sustainability. Finally, it only focused on income generating activities of the university yet in real sense; there is a wider array of revenue opportunities outside of income generating activities. It failed to take those into account like fees, government funding, scholarships, grants and philanthropic sources.

In Italy, Meali and Rampichini (2012) evaluated the consequences of university grants by relying on regression discontinuity designs. The study is instrumental in revealing that at the cut-off points, grants go a long way in preventing students, especially from poor backgrounds from falling off the education system. The study still presented some literature challenges on the basis of which it is critiqued. Firstly, it is set in a developed world background in which poor students may not be as many as if the study was set in a developing country like Kenya. It is noteworthy that the economic fundamentals of developed countries like Italy are radically different from those of the developing countries. Secondly, the study focused on government grants alone and failed to take

into account other forms of university education funding like scholarships, tuition fees, investment income, philanthropic efforts and government subsidies.

In one of the most cross-cutting studies across numerous nations and their universities, Alshubiri (2020) set to analyse the relationship between financial sustainability indicators of universities and foreign direct investment among the OECD countries. In the framework of the study, 26 countries were covered. The study was instrumental in defining the exact meaning of financial sustainability. It looked at financial sustainability in terms of financial self-sufficiency, expenditure, life expectancy and endogenous growth. It was instrumental in linking financial sustainability with direct foreign investment. Despite these contributions, the study fell short on a number of fronts. Firstly, it focused on OECD nations, which are highly developed economically, and failed to take the perspectives of other countries that fall outside the economic fundamentals of OECD countries. This implies that the association between FDI and financial sustainability of universities of countries outside of the developed countries may be hard to generalise from this study. Further, it used quantitative financial indicators of financial sustainability and failed to incorporate other measures that are qualitative in nature such as the levels of research output by universities, community outreach, risk exposure and local contexts.

2.6 Research Gaps

Four main gaps emerge from the study. These are contextual, theoretical, empirical, conceptual and methodological gaps. From the contextual perspective, the prevailing gap from extant studies is that none of them has explicitly linked financial resource mobilization strategies with financial sustainability of universities in Kenya. This is because of two main issues. First, studies that have tried to focus on financial sustainability have been done outside Kenya, and those that have been done in Kenya, have failed to incorporate financial sustainability as a dependent variable. Nalwoga (2021) for instance evaluated financial sustainability of private universities in Uganda; Robinson and Sensoy (2013) investigated the financial trends in higher education in the

United States; Pavlov and Katsamakas (2019) evaluated the long term sustainability of tuition-based colleges in America; Lungo, Mavole and Martin (2017) examined the determinants of project sustainability beyond donor support in Mansa diocese, Zambia; Millett (2020) evaluated the ecosystem of support and financial sustainability of sponsored colleges in America; among other studies. The gap inherent here is that there is need to explore financial sustainability in the context of Kenya given that other countries' economic and educational fundamentals are likely to be very different from those of Kenya.

Still of the contextual perspective, a gap emerges that whereas some studies have been done in Kenya, they are either not geared towards financial sustainability of universities or if they are, they fall outside the scope of universities and institutions of higher learning. Among these include Chitsama (2016) who conducted an analysis on the effects of low school fees collection in running schools using Nakuru County in Kenya; Cheboi (2014) who conducted an investigation on the effect of donor funding on the organizational performance of government ministries in Kenya; Murage and Onyuma (2015) analyzed the financial performance of income generating activities in public institutions of higher learning using a case of Egerton University and Mungai and Wanja (2011) who examined the performance of university industry collaborations. None of these try to focus on financial sustainability yet it is a key among universities because of the dwindling resources especially from government support

From a theoretical perspective, the theoretical gap that has emerged from the evaluation of the theoretical literature is that there are a variety of theories that try to explain how resources mobilization strategies affect the financial sustainability of universities. The problem is that these theories provide confounding explanations in this respect. While some predict a positive association between financial resource mobilization strategies and financial sustainability, others bring in a complete reverse explanation. The rest barely provide any reasonable link. The agency theory of Jensen and Meckling (1976) for instance leads to the conclusion that managerial opportunism makes it impossible for managers of universities to generate financially sustainable resource mobilization

strategies given that they give priority to private welfare as opposed to the overall university welfare of financial sustainability. There is, in this respect, a negative correlation between financial resource mobilization strategies and financial sustainability of universities and institutions of higher learning. Regression discontinuity theory of Thistle, Thwaite and Campbell (1960) on the other hand implies that if students can be helped to improve their performance through scholarship awards, then indeed such scholarships are merited, and that continuous flow of scholarship funds will go a long way in enhancing the financial sustainability of institutions of higher learning. This is supported by the knowledge-based theory of Grant (1996) which presupposes that, the role of financial knowledge is critical in coming up with appropriate financial resource mobilization strategies and thereby, positively affect financial sustainability. This seeming lack of agreement on the impact of funding on sustainability creates a notable theoretical literature gap.

From a conceptual perspective, extant literature is awash with numerous resource mobilization strategies including fees collection, income generating activities, research grants, collaborations, government financing, philanthropy and even education scholarships. The literature mostly relates these directly to either financial sustainability or financial performance (Nalwoga, 2021; Sensoy, 2013; Lungo, Mavole & Martin, 2017; Pavlov & Katsamakas, 2019; Millett, 2020; among others). Whereas all these provide conceptually sound way of operationalizing financial sustainability and funding strategies, they fail to check out the moderating factors that affect this. One of the most enduring moderating conditions that is the government grants which often vary depending on student population and the orientation of the courses offered at the institution of higher learning, be it science-based or arts-based.

From an empirical perspective, the extant literature provides confounding results as to the influence of resource mobilization strategies on financial sustainability of universities and other institutions of higher learning. Robinson and Sensoy (2013) for instance investigated the financial trends in higher education in the United States. Ngwenya (2016) conducted a study on the best way of collecting fees without infringing

on the liberties of learners in Zimbabwean primary schools. This study had a different contextual setting as it was conducted in Zimbabwe which is a different contest to Kenya. Chitsama (2016) conducted an analysis on the effects of low school fees payments in running schools: A case study in Nakuru County. The study looked at the effects of the fee collection but not the strategies of fee collection as required by this study.

Lungo, Mavole and Martin (2017) examined the determinants of project sustainability beyond donor support in Mansa diocese, Zambia. The contextual gap in this study is rested on the fact that Zambia is fundamentally different from Kenya in terms of the organization of higher education. In addition, it focused on church-based institutions as opposed to the whole spectrum of universities.

Cheboi (2014) conducted an investigation on the effect of donor funding on the organizational performance of government ministries in Kenya. The study focused on the government ministries but did not look at the universities in Kenya. In addition, it failed to take into account the moderating influences of sustainability like government grants.

Barrow and Rouse (2016) investigated financial incentives and educational investment: The impact of performance-based scholarships on student time use. The study used survey data which is a different method to the current study which used census to collect data. Rambo (2013) investigated the effect of school-based income generating activities on the financial performance of public secondary schools in Rwanda. The study focused on primary schools but not universities.

Murage and Onyuma (2015) analyzed the financial performance of income generating activities in public institutions of higher learning using a case of Egerton University. The study did not consider employee cost. Musau (2016) investigated the effect of investment decision on financial performance of savings and credit cooperatives in Kitui

central sub-County. The study was based in one county which is a different confine to this study which was based on universities in all the 47 counties.

2.7 Summary of the Literature Review

The chapter has focused on seven theories that provide anchorage to the objectives: resource mobilization theory of Oberschall (1973), knowledge-based view theory of Grant (1996), the regression discontinuity theory of Thistle Thwaite and Campbell (1960), the agency theory of Jensen and Mackling (1976), the modern portfolio theory of Markowitz (1952), the theory of capital strategy of Modigliani and Miller (1951) as well as resource dependency theory of Pfeffer and Salancik (1970). The resource mobilization theory is key as it generally focuses on financial revenue strategies of the firm which is central in this study.

Despite these theories, the chapter has also presented the conceptual framework. The conceptual framework indicates that the study was guided by three variables: the independent, the dependent and the moderating variable. The independent variables of the study included financial resource mobilization strategies on financial sustainability. Specifically, the study focused on five specific independent variables fees collection strategy, donor funding strategy, resources from investment strategy, consultancy resource mobilization strategy and linkages and partnership resource mobilization strategy. The dependent variable of the study was financial sustainability while government policy was the dependent variable. The interaction between each of these variables is illustrated in the conceptual framework using the arrows that show the direction of interaction of the variables.

The empirical studies have also been reviewed. These include Robinson and Sensoy (2013) who indicated that those higher education institutions are presently charging higher fees as compared to the last few decades in an effort to sustain their study programmes. Higher education at the beginning of the 21st century has never been in greater demand, both from individual students and their families, for the occupational

and social status and greater earnings it is presumed to convey, as well as from governments for the public benefits it is presumed to bring to the social, cultural, political and economic well-being of countries. Ngwenya (2016) established that tuition in primary schools was only free in the rural areas not in urban schools considering the exorbitant levies parents pay inclusive of the private costs incurred. Re-educative strategies of change resulting in collaboratively agreed upon payment plans were suggested. Koehn (2012) asserted that interest in the financial well-being of institutions of higher education, whether public or private, for-profit or not-for-profit— such as: regulatory agencies, licensing officials, accreditation agencies, equity owners whether present or potential in the case of for-profit institutions funding and other financial resource providers (e.g. donors), recipients of institutions' services (students their parents), faculty members and administrators, as well as the public at large.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides information on the methodology that was adopted to ensure appropriate data is collected using appropriate methods. It specifically covers research philosophy, research design, population of the study, sampling method and data collection instruments to be used, data collection procedures, pilot testing, data analysis and presentation. The methodology adopted directly draws from the conceptual framework arrived at in chapter two following the extant, conceptual and theoretical literature review. These are discussed in detail below.

3.2 Research Philosophy

Research philosophy refers to the basic belief or understanding that drives the entire research process, particularly from the choice of research approach and method of analysis (Adegboye, 2019). Yang, Zhang and Zhou (2020) define research philosophy as the belief of how data is collected, studied and used by researchers in order to understand a phenomenon. The philosophy adopted dictates the research design to be used, the data and collection methods to be adopted as well as the analysis of the data and approach to arriving at results and conclusion.

Studies have widely documented the various types of research philosophies. For instance, one of the most commonly used research philosophies is Positivism which is premised on the fact that research questions of a given study can be answered in an objective manner (Geydar, Arumugam, Kuppusamy & Singh, 2020). Yet another commonly used research philosophy is Interpretivism, which is rooted in the notion that knowledge and reality is fluid and can be explored by use of qualitative research (Eksteen, 2019).

This study is rooted in the scientific orientation of research. Accordingly, the present study was therefore guided by positivist research philosophy which according to Coleman (2019) focuses on the discovery of absolute knowledge about objective reality. This is also in line with Rao (2019), who argued that a positivist research philosophy aims to get facts and quality by reducing phenomena to its simplest elements, and more importantly places emphasis on testing hypotheses. Boussaguet and Faucher (2020) argued that a positivist research philosophy aims to present fact in an objective, and quantifiable manner as natural sciences do, especially with the aim of establishing causal links. The justification of use of positivism research philosophy in the study was informed by the fact that quantitative data was mostly utilized and answering the research questions involved formulation and testing of hypotheses.

While discussing the concept of research philosophy, the question of research paradigm always emerges. Research paradigm therefore can be defined as a set of philosophical assumptions and beliefs that direct a given research process (Maziriri, Mapuranga, Maramura & Nzewi, 2019). Rezaei (2019) contend that research paradigm is the underlying assumptions and intellectual strategy on which research and development in a given field of inquiry is based on.

3.3 Research Design

Research design refers to the plan and strategy of investigation conceived with the aim of obtaining answers to research questions (Singh & Thirusangu, 2019). It can also be defined as a setup of how data will be collected, analysed and interpreted in order to provide answers to research questions (Rezigalla, 2020). The research design adopted in the present study was viewed from three perspectives. Firstly, in terms of the type of data, this was quantitative implying that the study used quantitative research design. Quantitative research involves a study or enquiry based on testing a theory consisting of variables and measured with numbers and analysed using statistical procedures (Breed, Downing & Ally, 2020). Quantitative research design therefore was part and parcel of the study especially due to the fact that quantitative data was mostly used.

The second perspective of the research design was in terms of the objectives and the research questions that intended to establish the relationship, therefore leading to correlational research design. Curtis, Comiskey and Dempsey (2016) contend that correlational research design comprises two or more variables being studied, where the extent of the relationship between the variables is measured. Mgbemena (2020) defined correlational research design and methodology as that which is aimed at identifying interrelationships among the study variables. Similarly, the rationale behind utilization of a correlational research design is to establish whether there exists a predictive relationship between a given set of variables (Lato & Oliva, 2021). Correlational research design can also be termed as a research design that involves measurement of two or more attributes with the aim of determining the degree to which the factors are related (Wongmith, 2022).

The next consideration in characterizing the research design is in terms of the duration of the data collection process. In this regard, considering that the study has a specified start and end period; implied that the study bears the hallmarks of a cross-sectional research design. Cross-sectional research design refers to an observational study that comprises of multiple variables which are studied at a given point in time (Dikopoulou, Papageorgiou & Vanhoof, 2020). The present study therefore adopted quantitative and cross-sectional correlational research designs which were used jointly to answer the research questions of the study. Consequently, the research design adopted in the present study can be aptly termed as quantitative correlational cross-sectional research design; justified on the basis of the data type collected, nature of the research questions as well as the time used in the collection and analysis of data.

3.4 Population of the Study

A population refers to a group of individuals or study units that a researcher is interested in making conclusions about (Maistry, 2019). The definition echoes that proposed by Aprianto (2020), who defined target population as a group of people or study units whom information will be collected from in a research study. The population defines the

entire spectrum of units of study a researcher is interested in and from which parameters be they dispersion descriptive, central tendency descriptive or inferential measures of the phenomenon of interest from the population.

The population of this study comprised all 71 universities in Kenya as at December 2018. These include both public universities as well as private universities. All these are the universities recognized by the Commission for University Education in Kenya (CUE). These universities were selected because they had diverse experience in so far as financial resource mobilization challenges are concerned. They also have varying levels of financial sustainability as indicated by financial sustainability measures.

3.5 Sample Design

In statistics, a sampling frame refers to a list of sampling units from which a sample can be drawn (Birrell, 2020). It is the source material or device from which a sample is drawn. The frame refers to the list of units in the survey population. Since the selection of the sample is directly based on this list, the frame is one of the most important tools in the designs of a survey. It determines how well a target population is covered and affects the choice of the data collection method. The sampling frame is a list of all those within a population who can be sampled, and may include individuals, households or institutions (Cooper & Schindler, 2008).

The sampling frame defines a set of elements from which a researcher can select sample of the target population. Angkurawaranon, Pateekhum and Thaikla (2020) defines it as a list of everyone or everything that a researcher wants to study. Bagchi (2020) defines a sampling frame as the list of all the items in the population from which a research study is to be conducted. A sampling frame is therefore a list or rule defining the population. In this study the sampling frame consisted of the list of universities available at the Commission of University Education (CUE) as at 31st December 2018. The study targeted the finance departments of universities with specific focus on the finance officers in charge of finance from each university because of their role in raising and

accounting for financial resources in the universities. The total number of universities in Kenya is low and all can be easily accessed. This study therefore included all the 71 universities in the study hence the census technique of data collection was adopted in the study.

3.6 Data Collection

Data collection is the process of gathering and measuring information on targeted variables in an established systematic fashion, which then enables one to answer relevant questions and evaluate outcomes (Cooper & Schindler, 2008). Primary data on financial resource mobilization was collected using structured questionnaires that comprised closed ended questions. Questionnaires were justified on ground that they allowed collection of data from the entire 71 universities as sought by the study within a limited period of time. Data on financial sustainability was based on secondary data collected from the financial statements published by the universities that formed the study population on the census basis.

Questionnaires were divided into several sections; where Section A covered the general information. The subsequent sections covered information on fees collection strategy, donor funding strategy, resources from investment strategy, consultancy resource mobilization strategy and linkages and partnership resource mobilization strategy besides financial sustainability being the last section. Primary data was obtained from finance officers in the universities.

The researcher gathered secondary data from various sources including the public universities' audited financial statements, the reports and journals from Ministry of Planning and Devolution. The study used data collection sheets to collect secondary data. The rationale for use of secondary data in the study was that it complemented the information sought from primary sources. It was also important to gather secondary data so as to evaluate financial sustainability and government grants. Information from secondary sources was collected on a yearly basis, since the financial statements that

were sources of information were prepared at the end of every financial year. The financial sustainability was evaluated over a five-year period of 2014-2018 to come up with a financial sustainability index based on both the current ratio and the net assets ratio.

3.7 Pilot Testing

Pilot test refers to the start phase in data gathering of the research process conducted to detect weaknesses in design and instrumentation and to provide alternative data for selection of a probability sample (Dikko, 2016). Cooper and Schindler (2008) note that a pilot test should draw subjects from the target population and simulate the procedures and protocols that have been designated for data collection. Pilot test was designed with the aim of measuring the reliability and validity of the instruments.

According to Mugenda and Mugenda (2012), a pilot testing can be conducted using 1-10% of the respondents selected from the target population. Therefore, for the purpose of pilot testing, 10% of the respondents in the sample size were used for piloting which formed seven (7) respondents; these were excluded from the final sample of the study. Therefore, only 64 respondents remained for primary data collection from the universities.

3.7.1 Validity of Research Instrument

Validity of a research instrument refers to the accuracy and meaningfulness of inferences which are based on the research results (Heale & Twycross, 2015). Validity can also be defined the degree to which it measures what it is intended to measure (Kinateder & Ronchi, 2019). Ibrahim and Ahmed (2019) contend that validity of research instrument is concerned with whether it measures the intended concepts. Firstly, construct validity of research instruments was verified by the thesis supervisors to ensure that questions posted in the research instrument reflected the underlying concepts and constructs of resource mobilisation strategies as well as financial

sustainability. Secondly, content validity which focuses on whether the content of the measurement instrument adequately reflects underlying constructs was determined by discussing the stated questions in the instruments with seven (7) respondents who were selected for pretesting. Thirdly, the researcher also used face validity by giving the seven (7) respondents questions and asking them to go through the questionnaire and give suggestions for modification purposes. From the suggestions made, the researcher reviewed the questionnaire, and made necessary adjustments to make sure the questions were simple and clear in meaning.

3.7.2 Reliability of Research Instrument

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials under identical conditions (Mamani, Carranza-Esteban, Luque-Bonet & White, 2019). Garcia-Ramos and Janicijevic (2020) on the other hand define reliability of research instrument as the consistency of an outcome when the measurement is repeated. In addition, it has been widely documented that a measure of Cronbach's α, can be used to measure reliability of research instruments (Nugroho, Haris, Setiawati, Widayanti & Setyawanti, 2019).

Studies have suggested a threshold of Cronbach's $\alpha > 0.7$, to show that the research instrument is reliable (Sun, Wang, Jing, Xi, Dai & Zhou, 2020). The Cronbach's Coefficient Alpha was determined using STATA (14) to establish how items correlate among themselves. Cronbach's Alpha is a general form of the Kunder-Richardson (K-R) 20 formulas used to assess internal consistency of an instrument. It is usually interpreted as the mean of all possible split-half coefficients.

The results of the reliability tests are summarized in chapter four. Cronbach Alpha was used to determine reliability of the instruments. Whenever the Cronbach coefficients are over 0.7, the inference to be made is that the instrument is reliable (Lee, 2010). In computation of the values of Cronbach Alpha coefficients, the study entered the filled questionnaires from the field into Stata software. The Stata software was then used to

compute the Cronbach Alpha coefficient values for each of the study variables individually. With respect to secondary data, the findings are equally presented in chapter four both at the descriptive and inferential level.

3.8 Data Analysis

The data collected was analysed using Stata software. Data processing entails editing, classification and tabulation of data collected so that they are amenable to analysts (Chandran, 2004). The questionnaires were checked for completeness and consistency; any gaps edited and filled. The fully filled questionnaires were checked and then numbered using numerical values. The numbered questionnaires were systematically entered into a spreadsheet on Miscrosoft Excel software with clearly established items and the respective responses on each of the items. From the Excel spreadsheet, these coded responses were uploaded into the Stata software in readiness for analysis.

Before using the regression approach for analysis, it was important that the data be subjected to the model assumptions to ensure they produce the best linear unbiased estimator (BLUE). It was important to be sure that the data uploaded in Stata software does not violate the assumptions of regression analysis and thus the need for diagnostic tests as discussed in detail in subsequent sections:

3.8.1 Tests of Normality

One of the important requirements before utilization of the regression model is the fact that data needs to be normally distributed (Nguyen, Nguyen & Hoang, 2019). Establishing normality in the data therefore was accomplished by use of what is referred to as Shapiro-Wilks test. Godina and Matias (2018) emphasize on the importance of utilization of Shapiro-Wilks test especially so as to assess whether data comes from a normal distribution. Umar, Zawani and Abdul-Aziz (2019) were of the opinion that utilization of Shapiro-Wilks test is more powerful in detecting anomalies in the data especially in comparison with another test referred to as Kolmogorov-Smirnov test.

Consequently, Shapiro-Wilks test was conducted where the p-value was checked so as to establish whether there was normality in the data. Generally, a *p*-value of less than 0.05 indicates that the null hypothesis of lack of normality is rejected and accepts the alternative which would state that data is normally distributed.

3.8.2 Test of Homoscedasticity

Model regression random disturbance terms are said to be homoscedastic when they have a constant standard deviation. If not, they are said to be heteroscedastic. Belkania and Karimov (2018) define heteroscedasticity as a situation where the residuals of regression models have changing variance. Muhammad, Waqas and Migliori (2019) who after conducting an empirical study on Pakistani banks highlight the importance of utilization of what is referred to as Breusch-Pagan tests to detect the presence of heteroscedasticity in a regression model. The same approach was recently used by Nguyen *et al*., (2019) after conducting an empirical survey regarding inflation in Vietnam used the tests to establish the presence of heteroscedasticity in the regression model used.

The current study therefore adopted the same test in order to make an inference regarding the presence or absence of heteroscedasticity in the residuals of the multiple regression models that sought to establish the joint effects of resource mobilization strategies on financial sustainability of the selected universities.

3.8.3 Tests of Multicollinearity

Multicollinearity test is one of the most crucial tests especially when using multiple linear regression models. James, Wallace and Deane (2019) define multicollinearity as a situation where the predictors of a regression model are highly correlated with each other. This leads to bias in the estimated parameters because of internal inter-variable influences. James, Wallace and Deane (2019) furthermore add that multicollinearity can be checked through what is referred to as variance inflation factors (VIF).

Wen, Yan and Li (2018) contend that multicollinearity refers to a situation where explanatory variables of the linear regression model are highly correlated which at some point may make the model estimates distorted. Xia, Wang and Ji (2019) corroborate this by highlighting that multicollinearity is a phenomenon where there is presence of linear correlation between independent variables of the regression model. Subsequently, the current study made use of variance inflation factors in order to check for presence of multicollinearity in multiple regression model.

3.8.4 Linearity Test

Q-Q plots are used to test for multivariate linearity in line with Nguyen, Nguyen and Hoang (2019). For multiple linear regression to be used, it is assumed that that multivariate data is linear with less than significant deviations if any from the line of best estimate. It is from this linearity that the line of best fit is estimated. If not, a different kind of a model may be required and if not, the data would have to be linearized in order for the regression model to be estimated. The procedure is adequate since Nguyen, Nguyen and Hoang (2019) indicate that the minimum sample size for each of the variables for the model to be used is 20 units. This study had 71 universities in the census which adequately meets the criterion.

3.8.5 Model Suitability Test

Being a cross-sectional study, there is need to evaluate the suitability of multiple linear regression as the appropriate model of analysis. In this case Analysis of variance (ANOVA) test based on the *F*-ratio was used in the study. According to Nguyen, Nguyen and Hoang (2019), the model is considered suitable for analysis at the specified confidence interval if the *F*-ratio of the regression output is greater than the significance level. This must be the case to avoid drawing conclusion from statistically insignificant findings based on the p-value and the *t*-statistic.

3.8.6 Descriptive Analysis

Descriptive statistics reports, representing the various research items were developed during the analysis. The tables generated gave means and percentage responses to all the items in questionnaire using the five-point Likert scales. The measurement tool ranged from 1 to 5 with 1 representing the minimum score and 5 the maximum rated score. Accordingly, arithmetic mean (M) was used to measure how strongly respondents agreed to various statements presented to them relating to resource mobilisation strategies and how they relate to financial sustainability of the universities. Standard deviation, SD, which is one of the measures of spread (Dispersion), was used to measure variability in the scores given by the respondent on various statements relating to resource mobilisation strategies. In addition to this, minimum and maximum values of the variables were captured especially for secondary data. Range, which is the difference between the highest and lowest values of observations was used to give an indication of variability, alongside standard deviation.

The distribution of the variables was checked by use of both skewness and kurtosis. Skewness is used to determine asymmetry of a given dataset (Miloš & Bensa, 2019). On the other hand, kurtosis is used to measure flatness or peakedness of the distribution curve (Zhou, Feng, Xu & Zhou, 2019). Furthermore, kurtosis can also be used to measure the degree to which observations cluster around a central point (Henok, Okeleye, Omodanisi, Ntwampe & Aboua, 2020). These two measures were therefore important in terms of checking the distribution of the variables especially conformity to the 'Bell shaped' curve, which alongside Shapiro Wilkes tests for normality were used to justify the suitability of the variables in the regression models.

3.8.7 Inferential Analysis

Inferential analysis was conducted on both primary and secondary data. Simple linear regression analysis and multiple linear regression analyses were conducted on primary

data, while pooled ordinary least squares regression and fixed effects regression models were applied on secondary data.

3.8.7.1 Simple Linear Regression Analysis

The main purpose of conducting simple linear regression analysis was to determine the strength of linear relationship between each of the five resource mobilisation strategies versus financial sustainability of the universities. The model is shown as follows:

$$Y_i = \beta_0 + \beta_i X_i + \varepsilon_i \dots\dots\dots\dots\dots\dots\dots\dots\dots\text{(i)}$$

Y_{it}- Financial Sustainability of the Universities

β_0- Constant term of the regression model (Y-intercept)

β_i- Regression coefficient

X_I- Resource Mobilization Strategy

ε_i - Random error term

i = (1 for Fees collection strategy, 2 for Donor funding strategy, 3 for Investment strategy, 4 for Consultancy strategy and 5 for Linkages and partnership strategy)

3.8.7.2 Multiple Linear Regression Analysis

Multiple linear regression analysis was conducted on primary data in order to jointly measure the strength of linear relationship between various resource mobilisation strategies and financial sustainability of the universities. The model is shown as follows:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5\ \varepsilon_i \dots\dots\dots\dots\dots\text{(ii)}$$

Y_i- Financial Sustainability of the Universities

B$_0$- Constant term of the regression model

β_1- Regression coefficient for fees collection strategy index

β_2- Regression coefficient for donor funding strategy index

β_3- Regression coefficient for investment strategy index

β_4- Regression coefficient for consultancy resource mobilization strategy index

β_5- Regression coefficient for linkages and partnership resource mobilization strategy index

ε_{it} Random error term

The strategy indices are constructed from the questionnaire.

3.8.7.3 The Moderating Effect of Government Policies on Sustainability of Universities in Kenya

In order to test the moderating effect of government policies on the relationship between resource mobilisation strategies and financial sustainability of the universities, hierarchical multiple linear regression model was used.

Model 1: Financial Resources Mobilization Strategies and Financial Sustainability

The first model involved checking the influence of each of the predictor variables on the outcome variable (Financial sustainability) without the effect of the moderator variable as formulated below:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5\ \varepsilon_i \ \ldots\ldots\ldots\ldots\ldots\text{(iii)}$$

Y_i- Financial Sustainability of the Universities

B₀- Constant term of the regression model

β_1- Regression coefficient for fees collection strategy index

β_2- Regression coefficient for donor funding strategy index

β_3- Regression coefficient for investment strategy index

β_4- Regression coefficient for consultancy resource mobilization strategy index

β_5- Regression coefficient for linkages and partnership resource mobilization strategy index

ε_{it} - Random error term

Model 2: Financial Resource Mobilization Strategies and Financial Sustainability after Moderation

Addition of the moderating effect of government policies prompted the following formulation:

The first model involved checking the influence of each of the predictor variables on the outcome variable (Financial sustainability) without the effect of the moderator variable as formulated below:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon_i \ ....\text{(iv)}$$

Y_i- Financial Sustainability of the Universities

B₀- Constant term of the regression model

β_1- Regression coefficient for fees collection strategy index

β_2- Regression coefficient for donor funding strategy index

β_3- Regression coefficient for investment strategy index

β_4- Regression coefficient for consultancy resource mobilization strategy index

β_5- Regression coefficient for linkages and partnership resource mobilization strategy index

β_6- Regression coefficient for government grants; which is the moderating variable

ε_{it} - Random error term

In the analysis of the moderating effect of government, the changes in r-squared(R^2) will be checked to ascertain whether the respective statistical significance has been altered as a result of adding a moderating variable in the model. In addition, the significance of the regression coefficients will also be checked to establish whether incorporating a moderating variable altered their respective statistical significance.

3/8.7.4 Panel Data Analysis

Panel data can be defined as a two-dimensional data where cross-sectional units are observed over a given period of time (Beyaztas, & Bandyopadhyay, 2022). Panel data can also be defined as the pooling of observations on a cross-section of organizations , countries, households etc over a given period of time (Ji, Zhang, He & Zhang, 2022). The secondary data therefore exhibited features of panel data considering that the financial collected data was collected over a period of time and from different institutions (universities). Subsequently, this justifies the use of panel data analysis models in the establishment of the relationship between the independent and dependent variables. The study adopted pooled panel data regression model which was formulated using the following equation:

$$Y_{it} = \beta_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \beta_5 X_{5,it} + + v_{it} \dots\dots\dots\dots(v)$$

Where:

Y_{it} - Independent variable (financial stability of different universities at different time points)

β_0 –Constant term of the model

$\beta_1 - \beta_5$: Regression coefficients for fee collection strategy, donor funding strategy, investment strategy, consultancies and linkages and partnership strategy respectively.

$X_1 - X_5$: fee collection strategy, donor funding strategy, investment strategy, consultancies and linkages and partnership strategy respectively.

v_{it} - Random error term of the model

$i -$ Each of the universities that participated in the study

$t -$ Specific period within the time span of data collection

$i =$ (1 for Fees collection strategy, 2 for Donor funding strategy, 3 for Investment strategy, 4 for Consultancy strategy and 5 for Linkages and partnership strategy)

In summary, simple regression models used in terms of analysing the strength of linear relationship between each of the independent variables and dependent variable. In addition, this Model was used in testing hypothesis of the study. Additionally, multiple linear regression analysis was also applied for the purposes of cross-checking the findings of simple linear regression; by analysing the combined effect of each of the independent variables of the outcome variable. Furthermore, the moderating effect of government policies was analysed using hierarchical multiple linear regression model. All the three models were applied on the primary data which was collected from the universities justifying the use of primary data in the present study. Secondary data was

also used in terms of translating the findings of primary data. This was mostly analysed through use of inferential analysis particularly use of panel data analysis. In this regard, panel data regression model was applied We are the statistical significance of the regression coefficient and the suitability in the goodness of fit of the model was checked accordingly.

3.9 Operationalization of Variables

Operationalization of the study variables was crucial in order to show how each of the variables of the study would be measured accordingly and more importantly the indicators that were to be measured so as to enable further statistical analysis. The measurement of a variable is both done for the primary data variables and the secondary data variables. The Table 3.1 therefore gives a summary of how variables are operationalized:

Table 3.1: Operationalization of Variables

Variable	Indicators	Measurement
Fee Collection Strategy	– Payment mode – Recovery strategy /methods – Amount charged /programme	– Fee Collection Strategy Likert Index
Donor Fund Strategy	– Grants/ Research grants – Donations – Project – Scholarship	– Donor Fund Strategy Likert Index
Investment strategy	– Real estate – Stock – Fixed deposit – Treasury bills	– Investment Strategy Likert Index
Consultancy strategy	– University wide – Department – Individual	– Consultancy Strategy Likert Index –
Linkage and Partnership Strategy	– Public-private partnership (PPP) – Academics	– Linkage and Partnership Strategy Likert Index
Financial Sustainability	– Net Asset ratio – Current ratio	– Financial Sustainability Change Index
Government Grants	Annual Budgets	– Government Grants Ratio

With respect to secondary data which was collected for financial sustainability and government grants, Net assets ratio and current ratio are used for long-term solvency and short-term sustainability respectively.

A joint index of short term and long-term sustainability are equally weighted and provided in Table 3.2.

Table 3.2: Financial Sustainability Indicators

Measurement	Data	Indicator	Primary Formulation
Net Asset Growth Rate	• Assets in 2014 • Assets in 2018 • Liabilities in 2014 • Liabilities in 2018	$Net\ Assets = TA - TL$	$NAGR = \dfrac{NA_{2018} - NA_{2014}}{NA_{2014}}$
Current Ratio Growth Rate	• Current assets, 2014 • Current assets, 2018 • Current liabilities, 2014 • Current liabilities in 2018	$CR = \dfrac{CA}{CL}$	$CRGR = \dfrac{CR_{2018} - CR_{2014}}{CR_{2014}}$

$$Financial\ Sustainability\ Index = W_{NAGR}\,NAGR + W_{CR}\,CR$$

Current ratio (CR) is represented as the ratio of current assets to current liabilities. The current ratio growth rate (CRGR) relates to the changes in the current ratio between 2014 and 2018 using 2014 as the base year. The higher the growth rate the greater the liquidity and hence the better the prospects of financial sustainability. Net assets (NA) are taken as assets less liability such that the net assets growth rate (NAGR) is taken as the change in net assets between 2014 and 2018, with 2014 serving as the base year. The higher the growth rate, the better the long-term solvency growth prospects and vice versa.

For cumulative purposes, the short-term liquidity and the long-term solvency are combined into an index to form financial sustainability index. In this index, liquidity and solvency are taken as equally weighted and therefore the weighted index is a function of qualitative allocation of net assets growth rate and current ration growth rate, being the long-term and short-term financial sustainability aspects respectively.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The purpose of this section is to give a presentation of the findings of the study alongside the relevant discussions especially as relates to various empirical studies in the extant literature. First and foremost, the background information of all the universities selected was analysed especially in relation to some of the important features that relate to aspects of financial resource mobilization strategy as well as financial sustainability. Accordingly, the analysis of the study findings was carried out in line with the study objectives that sought to establish how various resource mobilization strategies influence financial sustainability of the selected universities in Kenya.

4.2 Pilot Test Results

This sub-section is indicative of the information obtained from the pilot study conducted from seven (7) randomly selected universities and the modifications made from the findings of the pilot study on the questionnaire with respect to the internal consistency of the measures of the financial resource mobilization strategies. As a first step, a pilot test of the research questionnaire was conducted to ascertain the operational aspect of the research tool and ensure questionnaire's adequacy and the external and internal consistency of the questions. Seven questionnaires were used in the pilot test being 10% of the study population of 71 universities. The aspects of concern in the pilot phase of the study were the format of the questionnaire, the precision of the questions and respondents' dependability in interpreting questions presented in the research instrument. To ensure that all aspects of concern are addressed, the pilot testing phase involved personally administered questionnaires. All the five aspects of financial resource mobilization are considered in the test. These are fee revenue strategy, donor

funding strategy, investment strategy, consultancy revenue strategy as well as the linkages and partnership strategy.

To check out on the convenience aspect to the respondents, the piloting stage involved verifying the average time taken to fill the questionnaire. It is observed that they took an average time of 6.50 minutes to complete the questionnaire. This was considered to be adequate for the final study and therefore the format of the questionnaire was retained. This short time could be attributed to the precision of the questions as well as the target on the appropriate officers used in resource mobilization within the universities.

As regards the fee revenue strategy, donor funding strategy, consultancy revenue strategy, investment strategy as well as the linkages and partnership strategy, all the seven questionnaires were valid upon testing. The lack of errors could be credited to the fact that the data collection process involved the personal administration of the questionnaire. This approach was also therefore used in the final study. Table 4.1 indicates the internal consistency of the questions with respect to five aspects of financial resource mobilization strategies as measured by the Cronbach's alpha

Table 4.1: Cronbach's Alpha Reliability Statistics on Resource Mobilization Strategies

	Cronbach's Alpha	Cronbach's Alpha on Standardized Items	N of Items
Fee revenue strategy	0.858	0.827	19
Donor strategy	0.799	0.763	10
Investment Strategy	0.811	0.729	10
Consultancy Strategy	0.794	0.763	6
Linkages & partnerships	0.818	0.802	5

From Table 4.1, the findings reveal that the values constructs used in indicating fee revenue, donor, investment, consultancy and partnership strategies were all internally consistent. This is in line with Singh and Thirusangu (2019) who indicate that Cronbach alpha values of > 0.70 are acceptable. As per the findings, the values are 0.858, 0.799,

0.811, 0.794 and 0.818 for the respective strategies. The respective adjusted values are also all above 0.700.

4.3 Analysis of University Background Information

In this section, an evaluation of the response rate in general and an overview of the independent, dependent and moderating variables in particular are presented. These form the basis of the descriptive and inferential analysis done in the subsequent subsections.

4.3.1 Response Rate

Although the sustainability measure was derived from a five-year period of 2014/2015 to 2018/2019 using secondary data from university financial statements, data on resource mobilization strategies was derived from primary data collected at the end of the financial year. Accordingly, the design was made in such a way that analysis could only be possible with primary data matching the secondary data. This demanded a 100% response rate from the 64 universities used in the sample evaluation.

Accordingly, the process of analysis began with analysis of the rate of response where all the distributed instruments of data collection were returned back because of the personal collection of data from all the Universities. This led to 100% rate of response which is precisely matched from the financial statement data derived from the all the 64 universities. The background information was analysed first specifically to establish some of the underlying demographic characteristics of the universities.

4.3.2 University Demographic Features

Subsequently, one of the most important demographic aspects that the researchers sought to find out from the respondents was to establish the age of the universities. The findings are indicated in Table 4.2.

Table 4.2: University Age

Age	Number	%	Cumulative %
Less than 6 years old	6	9.38	9.38
Between 6 and 10 years	7	10.94	20.31
Between 11and15 years	19	29.69	50.00
More than 16 years	32	50.00	100.00
Total	**64**	**100.00**	

The findings in Table 4.2 indicate that as of 2018, majority of the universities (50%) are over 16 years old and that only 9.38% are up to six years of age. The rapid expansion of universities in Kenya after 2007 means that another 20.31% are between 6 and 10 years old. The illustrative chart in Figure 4.1 is indicative of this.
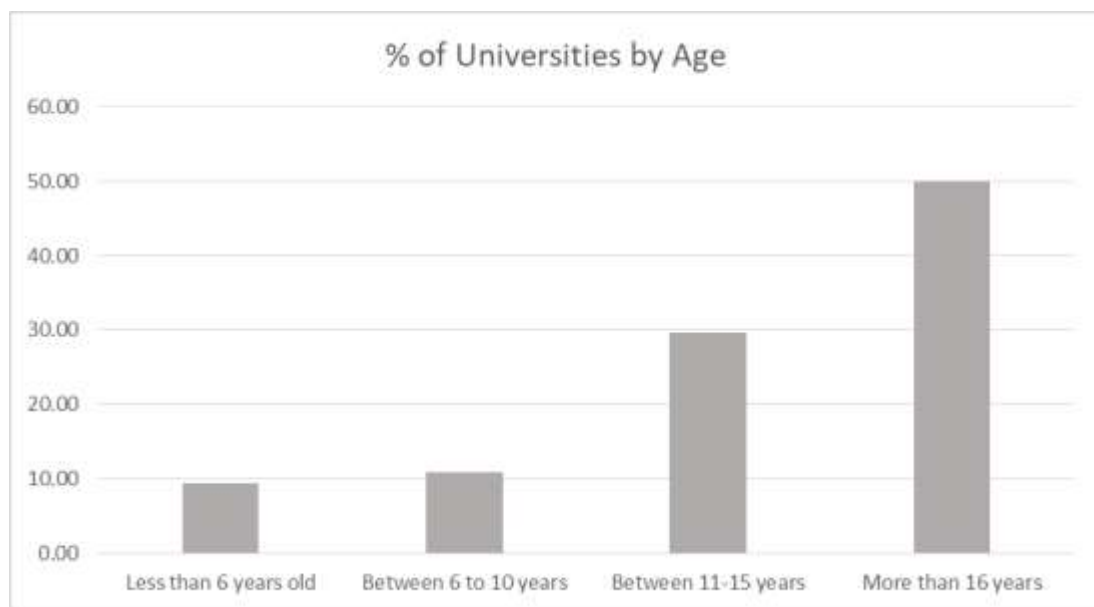
Figure 4.1: Universities in Kenya by Age in Percentage

The study also focused on university size based on student population in the selected universities. The findings are indicated in Table 4.3

Table 4.3: Universities by Student Population

Student Range	Frequency	Percentage	Cumulative %
Up to 5,000 students	13	20.31	20.31
Between 5,001 to 10,000	37	57.81	78.13
Between 10,001 to 15,000	4	6.25	84.38
Between 15,001 to 25,000	4	6.25	90.63
Between 25,001 to 30,000	3	4.69	95.31
Above 30,000	3	4.69	100.00

The findings in Table 4.3 indicate that majority of the universities (57.81%) have a student population of between 5000 and 10,000. This could be attributed to the fact that most of them are young universities with a very high growth potential given the population growth of Kenya estimated at 2.3% as per World Bank (2019). With a student population of 522,059 as at 2018, the study indicated that there was an average of 8,158 students per university although some 20.31% of the universities had a population of only up to 5,000 students while a further 21.87% had student population above 10,000 as reflected in the cumulative student population in Table 4.3. This is illustrated in Figure 4.2.
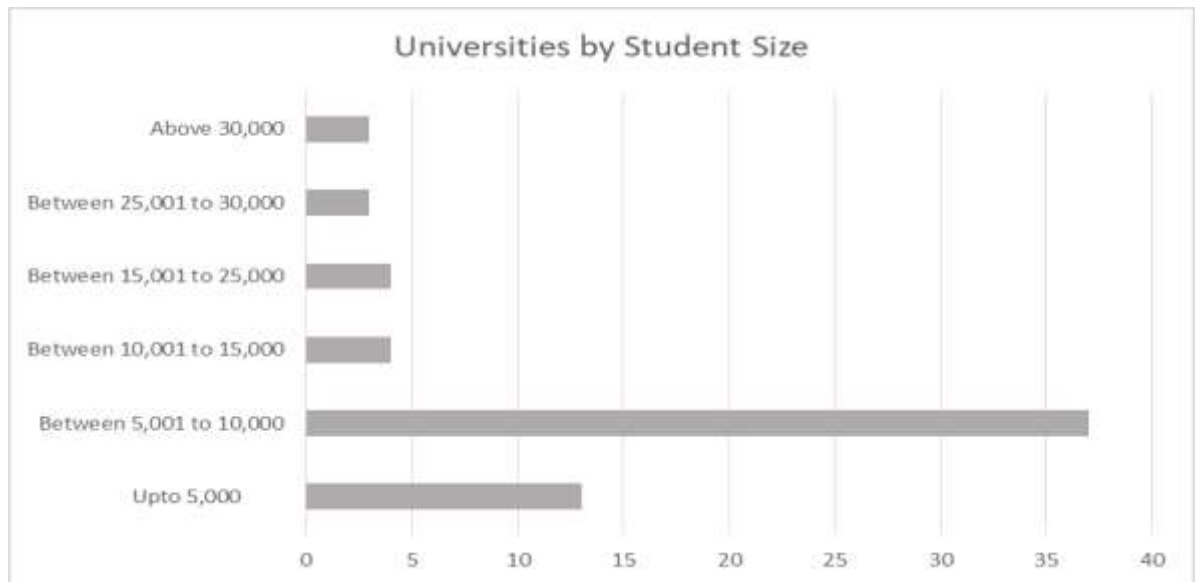
Figure 4.2: Universities by Student Size

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The implication from that data is that majority of the universities have high potential for growth and therefore there must be means and ways to cater for financial sustainability if this is to be achieved given that Almagtome, Shaker, Al-Fatlawi and Bekheet (2019) and most other scholars generally agree that universities across the world are facing declining government financing and should be on the lookout for alternative funding sources.

The study also sought to establish the universities average annual budget and the findings of the study indicate that the budget was roughly KSh750 million. Another important aspect of the demographic analysis was to have an idea about the staff population which on average was found to be 1,062 employees as indicated in Table 4.4. This is inclusive of both the academic and non-academic members of staff although it excludes the staff on part-time, casual and temporary basis.

The secondary data collected from the universities was first and foremost summarised in terms of the key descriptive statistics including the measures of central tendency and dispersion. In order to facilitate comparison of the various summary statistics the findings were summarised as shown in Table 4.4.

Table 4.4: Universities by Student and Staff Population

Variable	N	Mean	SD	Median	Min	Max	Range
Staff population	64	1061.8732	948.9334	566	106	5122	5016
Number of students	64	8157.17	8634.64	2500	2500	35000	32500

4.3.3 Resource Mobilization Strategies

From the overall variability perspective in the financial resources by universities from various sources available to them, Table 4.5 shows that linkages and partnerships strategy had the least standard deviation of *SD* =1.1378, indicating that there was less variation and more consistency. This could be attributable to the low levels of resources

mobilized by universities through this avenue as supported by Sá (2015) who evaluated the industry engagement with universities in Africa. This volatility in partnership financing was followed closely by consultancy services strategy *SD* =1.2118 which again falls in the line of Sá (2015) who showed that universities in Africa barely venture into consultancy.

Table 4.5: Various Resource Mobilization Strategies

Resource Mobilization Strategy	Mean Index	Common Size %	Rank	SD
Government grants	4.5469	90.94	1	1.381
Tuition fees	4.4531	89.06	2	1.4496
Donor funds	2.0625	41.25	5	1.3571
Investments and enterprise	2.0781	41.56	4	1.5626
Consultancy services	1.8125	36.25	6	1.2118
Linkages and partnerships	2.5938	51.88	3	1.1378

Investment strategy scored the highest standard deviation, *SD* = 1.5626 followed by fee payment, *SD* =1.4496, indicating the lack of consistency on these two resource mobilization strategies. The volatility indicated in the fee payment could be attributable to the variations of students in universities occasioned by the differences in university entry examination criteria that saw university entry grade for qualifying students reduce rapidly in the year 2017 and 2018 before starting to rise thereafter.

From a central tendency point of view, generally resource mobilization strategies had low values of means which emphasizes the need for most universities to develop effective and sustainable resource mobilization strategies. This finding is in line with Manuh, Gariba and Budu (2007) who noted that funding of universities throughout the world has witnessed dramatic challenges in the last decade of the 20th century and the first decade of the 21[st]century.The means are indicative of the financial resources mostly relied upon for financial mobilization. Table 4.2 shows that the rank priority orders in terms of which universities rely on various finance sources. Government finances lead the way in terms of financial stability of the universities. This is mostly because the

government has a policy of sponsoring students through government capitation which is available to both public and private universities.

The dominant role of government funds in funding university operations is closely followed by tuition fees. The danger in this strategy is that public universities are hardly able to increase fees for government sponsored students making this to have grave implications on the financial sustainability of this form of funding as warned by Akinyemi (2013). Although partnerships and linkages come in at number 3, there is a significant difference in reliance on resources from the first two sources to the rest of the sources where investments, donor funds and consultancy come in at positions 4, 5 and 6 respectively as indicated from Table 4.5 and Figure 4.3
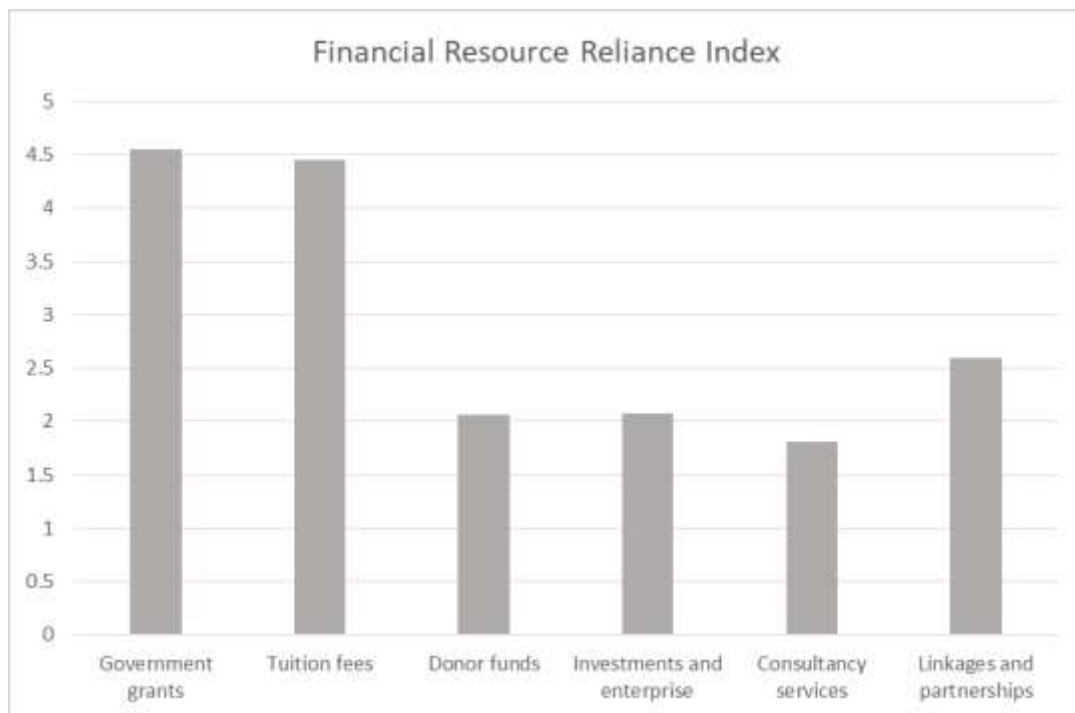
Figure 4.3: University Financial Resources Reliance Index

The implication from Table 4.5 and Figure 4.3 is that in as much as government funds and fees is very inelastic and non-responsive to the changing financing needs of universities, there is quite some room of funding opportunities available from investments, donor funding, consultancy as well as industry linkages and partnerships since they remain largely untapped.

4.3.4 University Financial Resource Mobilization Strategies and Growth Prospects

The study also evaluated the changes in financing from the various sources over the study period to establish a growth index which has implication on financial sustainability of the various sources. The sources that are declining at an increasing rate have the most serious implications on financial sustainability while those that are rising at an increasing rate are expected to have the most positive impact on financial sustainability. This is in line with the arguments of Baligidde (2010). Accordingly, when evaluated on a Likert scale with respect to revenue or financial resource trends ranging from decreasing at an increasing rate (1) to increasing at an increasing rate (5), the findings are revealed in Table 4.6.

Table 4.6: Financial Resource Growth Trends in Universities

Income Source	Mobilization Index	Common Size %	Rank
Government grants	2.5156	50.31	6
Tuition fees	3.0313	60.63	4
Donor funds	2.8750	57.50	5
Investments and enterprise	3.5000	70.00	1
Consultancy services	3.3594	67.19	3
Linkages and partnerships	3.4688	69.38	2

Findings in Table 4.6 show that enterprise investments are on an upward trajectory followed by financial resources from linkages and partnerships. At rank 3 resources obtainable from consultancy services followed by those from donor funding. Consistent with the findings from Table 4.6 and Figure 4.4 government funding has shown the least

growth prospects followed by the resources from tuition fees. This consistency is reduction in government and other funding has been confirmed by literature as indicated by Manuh, Gariba and Budu (2007) who assert that funding of universities throughout the world has witnessed dramatic challenges in the last decade of the 20[th]century and the first decade of the 21[st]century. To cope with reduced government funding, universities worldwide now generate additional sources of funds (Bomberg & McEwen, 2012). Bomberg and McEwen (2012) assert that the emerging popular sources of financial resources are research grants, income from investments, and sponsorship by philanthropists as well as fees collected from the university students.
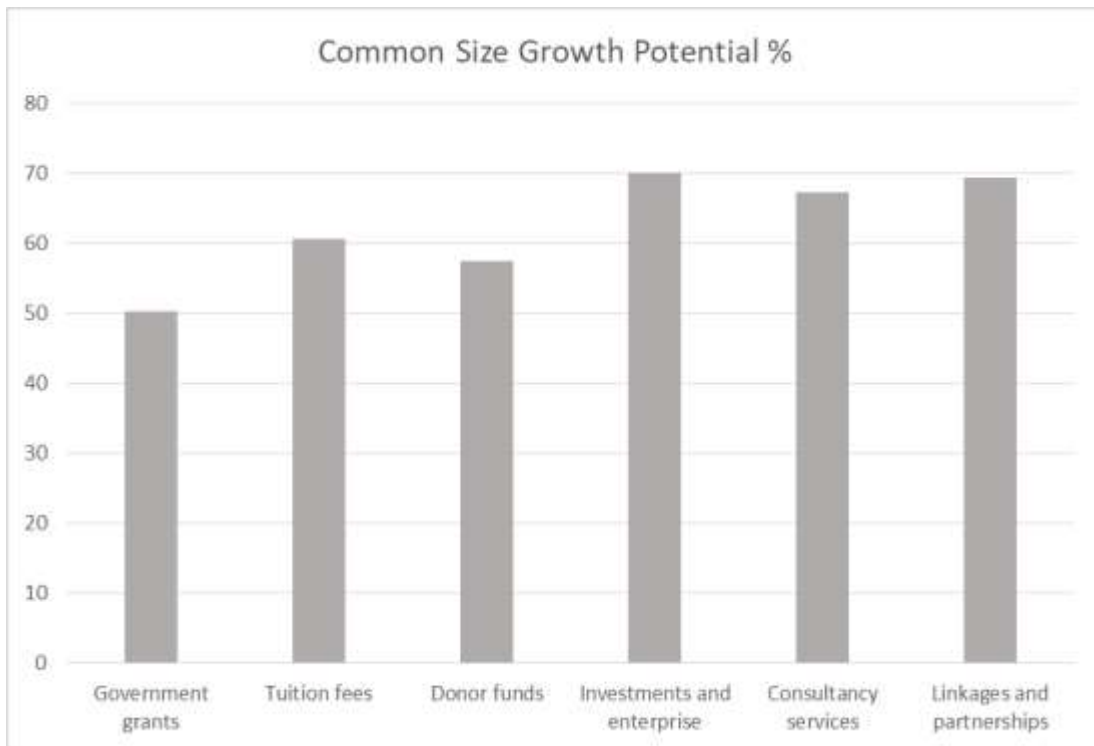
Figure 4.4: Financial Resource Growth Potential Common Size Index

4.4 Descriptive Analysis

After establishing the nature of universities in Section 4.3 with respect to their funding strategies, student population, age, budgetary allocation and staff population, this section

evaluates the descriptive statistics for the independent (fees, donor funds, investment income, consultancy and linkages), moderating (government funds) and dependent (financial sustainability) variables of the study

4.4.1 Fees Collection Strategy

The collection method was scaled on a 1 (not relied upon at all) to 5 (100% relied upon). This was then used to construct a fee collection index that was then translated to a common size for all the 64 universities by relying on a common denominator of 5. The findings in Table 4.7 and Figure 4.5 show that cash had the least index of 2.438 translating to an index score of 48.75 %. The cash here relates to items like petty cash, cash handling in the cafeteria and other revenue generating units and penalties from students thus low reliance on cash. This relates to the fact that most internal control systems consider cash as the riskiest form of not only paying but also collecting resources due to vulnerability to pilferage and other causes of fraud and losses. Oluoch (2014) indicates that entities must convert cash from the liquid form as fast as possible to reduce the exposure to risk.

Table 4.7: Fees Collection Mode

Collection Method	Mean Index	Common Size %
Cash	2.438	48.75
Bank Pay slips	3.531	70.63
Cheques	3.578	71.56
Mobile Money and Banking	3.594	71.88

Universities seem to be keen at managing the risk of cash loss in line with Oluoch (2014) since the index scores for bank payslips, cheques and mobile money and banking have respective scores of 3.531, 3.578 and 3.594.
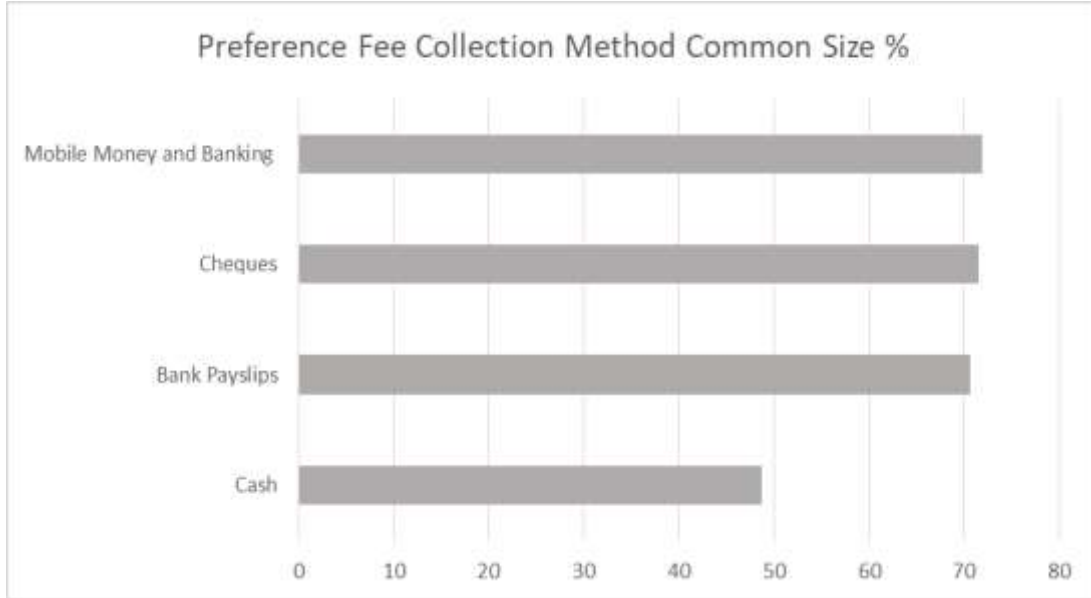
Figure 4.5: Preference Common Size Fee Collection Method

These translate to common size percentages of 70.65%, 71.56% and 71.88% respectively. It is evident from the findings that mobile money and banking has become the most popular approach to fee collection. This could be attributable to the onset of paybill numbers offered by mobile money companies that have not only increased the convenience of payment by students and collection by universities but provides a good forum for audit trail and tracking the movement of money by either party. This observation agrees with Higgins, Kendall, and Lyon (2012) who reported very high uptake of mobile money for general transactions in Kenya.

The use of cheques and bank-payslips record high index scores albeit not as high as mobile money and banking. This is because they are safe approaches to cash management for the students and universities and they provide adequate audit trail for following up not only receipts but also payments of the money. The trends in which most organisations are going cashless may imply that mobile money and banking is bound to overtake these traditional forms of transacting.

The findings from Table 4.7 and Figure 4.5 clearly demonstrate that universities have been more flexible on fee payment when it comes to the modes of payment of fees especially in comparison to the past few years where, as most respondents admitted that fee payment was strictly by use of the traditional modes of payments identified in the table above. This finding concurs with Chitsama (2016) who indicated that parents in rural areas can pay school fees for their children through other means besides relying on farming. Furthermore, the study was trying to give an insight on how the problem of school fees collection can be enhanced so that schools in rural areas can produce desired outcomes. To enhance flexibility in fee payment in the universities, it may be worthwhile to emulate the practice in high schools. In order to foster high school fees payment in rural areas, parents need to be enlightened and educated, so that they prioritize education in their budgets. It also established that other parents have potential to pay school fees through their possessions. The study articulated strategies that the schools heads can employ in order to raise school fees from the parents, such as engagement of debt collectors, inviting parent to school for payment plans and involvement of school development committees to encourage parents.

Besides the fee payment mode, the fee mobilization strategy also involved analysis of the strategies used in enforcing the collection of the fees from students. Table 4.8 and Figure 4.6 provide a summary of the findings on various fee collection enforcement strategies and apparently going by the value of the arithmetic mean score, fees collection rate on examination cards with a mean, $M = 3.49$ was among the issues that were highly ranked. This could be attributable to the fact that when fees are pegged on examination, students will have no choice other than to comply or fail to sit for the examination. The only shortcoming of this strategy or enforcement technique is that examinations are usually undertaken at the end of the semester which may mean cash flow problem earlier on in the semester before most students comply towards the examination period and this may lead to accumulation of pending bills until the end of the semester.

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Table 4.8: Descriptive statistics for Fee Collection Enforcement Strategy

Statement	Mean	Std Index %	SD	CV
Fees collection rates on signing of nominal roll	2.73	54.6	1.362	0.499
Fees collection rate on student registration deadlines	3.27	65.4	1.434	0.439
Fees collection rate on examination cards	3.49	69.8	1.275	0.365

This problem stems from what has been summarised by Keown, Scott, Martin and Petty (2020) who show that prudent financial management demands that financial obligations be settled as late as possible so long as the credit rating or relationship with the counterparty in the transaction is not deteriorated. The effectiveness of this fee collection enforcement strategy is confirmed by the least standard deviation and corresponding coefficient of variation of 0.365.
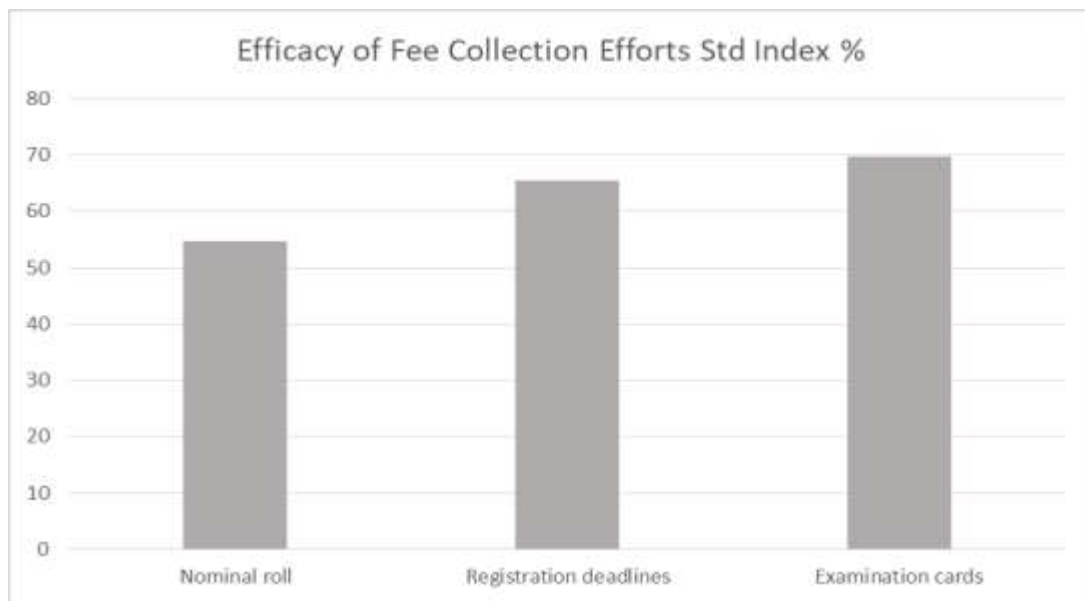
Figure 4.6: Efficacy of Fee Collection Efforts Standard Index %

This indicates that the strategy produces the least variability in cash collected. Again, this can be attributed to the pressure provided by the possibility of missing on exams as well as the narrow window within which the strategy is to be implemented given that examinations period in most universities hardly go beyond a scheduled time of two weeks at the end of the learning period.

The strategy of relying on examination cards in enforcing fee collection is closely followed by fees collection on student registration deadlines, $M = 3.27$ and fee collection on signing of nominal roll $M=2.73$ respectively. These two have almost similar coefficient of variations indicating similar levels of variability in fee collection arising from employing the strategies. The implication of these findings is that respondents generally agreed on a moderate extent on various resources mobilization strategies available in their universities. According to Reeves, Herrington and Oliver (2015), resources are finite, hence the need for these institutions to develop various financial resource mobilization strategies to meet their financial obligations as and when they fall due.

The result in Table 4.9 provide a summary of the findings with regards to fees collection policy as one of the strategies that are used to raise finances for the university's and apparently having the highest score in terms of the arithmetic mean. The issue of the period stipulated for fees payment allowing the university to plan adequately for its financial needs scored highly with a mean, $M = 3.52$ followed closely by the fact that the amount of fees paid by different courses is commensurate to the cost of teaching, $M = 3.51$.

The implication of the findings in Table 4.9 is that most of the universities had fee strategies with clearly established periods which students were to pay their school fees. This finding is consistent with Robinson and Sensoy (2013) who found out that higher education institution are presently charging higher fees as compared to the last few decades in an effort to sustain their study programmes.

When looked at from the volatility point of view using coefficient of variation on a standardised index platform, it appears that the universities are barely comfortable with the methods that have been stipulated for collection of fees from students in their fee collection policies. This is evidenced by the high level of CV compared to all the rest of the parameters. Again, this is in line with the changing approaches of fee collection as was indicated in section 4.3 where universities are increasingly moving from the traditional cash and cheque payments to the contemporary approaches that blend mobile banking and the mobile money transactions.

Table 4.9: Effect of Fee Collection Strategy on Financial Sustainability

Statement	Mean	SD	CV
The university always collects the student fees within the time stipulated in the fee collection policy	3.52	0.939	0.267
The university is very comfortable with the methods that have been stipulated for collection of fees from students	2.49	1.6377	0.658
The university always carries out due cost analysis to ensure that the fees arrived at for various courses is sufficient to run them	2.94	1.4332	0.487
The amount of fees paid by different courses is commensurate to the costs of teaching it	3.51	1.1448	0.326
The amounts charged on different programmes are adequate to sustain university operations	2.86	1.6843	0.589
We always do not allow any student who has not paid fees as per the stipulated time to proceed with the studies	2.7	1.0197	0.378
We always recommend that students unable to pay fees during stipulated time take academic leave	2.85	0.8136	0.285
We rarely provide any form of fee waiver even to students who are extremely needy	3.41	1.4221	0.417
Overall mean = 3.04			

On the CV score, the findings seem to suggest that universities are unwilling to provide fee waivers even to financially challenged students and that the amount of fees charged is inadequate to finance their programmes. This agrees with most of the scholars including Lee, Kim and Lee (2020) who enlist the challenges of relying on tuition fees

and advice on the need for diversity on the sources of funding of universities and other institutions of higher learning.

In trying to establish whether there was consistency in the scores for various aspects of fees collection strategies, it was established that the period stipulated for fees payment had allowed universities to plan adequately for their financial needs yielded a standard deviation of $SD = 0.99$ and that amount of fees paid by different courses being commensurate to the costs of teaching yielded a standard deviation of $SD = 1.14$ hence an indication that the opinion was most consistent among the respondents. This contrasted the fact that the amount charged on different programmes was adequate to sustain university operations which yielded a standard deviation, $SD = 1.68$. The fee payment methods stipulated by the university helping in financial management yield $SD=1.63$, while the strategy used to arrive at fees payable for different programmes being optimal yielded $SD=1.4$, lastly that the students pay their school fees on time had $SD=1.01$ indicating high variability on this aspect among the respondents. This is supported by the auditor general's report (2018) where it was indicated that universities are broke and owing government agencies a lot of funds.

The findings as summarised in Table 4.9 show that the highest value of arithmetic mean, $M = 3.76$, was associated with the statement alluding to the timeliness of collection of fees from the students, therefore indicating that this was the statement that was most strongly agreed to among the finance officers with regard to the issue of fees payment among their universities. On the other hand, the findings also show that the least value of arithmetic mean, $M = 3.35$, was associated with the statement describing the inadequacy of the available financial resources from fee collection to meet the cost of running the associated courses. This implies that the statement was the least agreed to among the respondents.

4.4.2 Donor Fund Resource Mobilization Strategy

The Table 4.10 provides a summary of descriptive analysis relating to the donor funding strategy in the selected universities. The statements are used to construct the donor funding strategy index as part of the entire financial resource mobilisation index. The aspects relate to general accessibility to donor funds, the contribution of each of the donor categories of funds and the general trends in the funds ranging from rising at an increasing rate to decreasing at an increasing rate. The table provides the mean values, the standard deviations as well as a composite index that gives the coefficient of variation of the construct sub-components. From the Table 4.9, the statement that donors remitted their contributions on timely basis had the highest mean, $M = 3.52$, followed closely by the fact that universities had several scholarship projects that were run by donors which scored, $M = 3.48$ as shown in the Table 4.10

Table 4.10: Donor Funding Strategy

Statement	Mean	SD	CV
The university has access to grants to run its operations	3.24	1.711	0.528
The university gets donations to finance its operations	2.68	1.0525	0.392
The university has a number of projects financed by donors	3.31	1.5454	0.467
The university has several scholarship projects run by donors	3.48	1.4625	0.420
The donors avail adequate resources to operate the different projects they have partnered	2.34	0.9553	0.408
The donors remit their contributions on a timely basis	3.52	1.5662	0.445
The donor avails adequate finances for the various scholarship programs they support	2.7	0.9768	0.362
Overall mean = 3.09			

The findings of descriptive analysis indicated that donor funding strategies can be adopted effectively in order to improve upon financial sustainability of the universities. The issue of universities having access to grants was among the issues that were strongly agreed to with an arithmetic mean, $M = 3.24$, a high score which reflected how respondents agreed strongly on the issue of access to grants. This was in line with an

observation made by Bloom, Canning and Chan (2015) who after conducting a study on higher education in the context of Sub-Saharan Africa revealed that one of the main sources of funding for higher education included grants especially donor funds. It has been observed from the descriptive analysis results that indeed respondents admitted that universities get donations in order to finance their operations which corroborates an observation made in a local empirical survey by Maseno (2011) that in many instances, universities depend on donors in order to improve their financial sustainability.

On the variability of the respondents on various aspect of donor funding strategy , it was found out that the issue that donors availed adequate resources to operate the different projects that they had partnered with had the least value of standard deviation, therefore indicating that the issue was more consistent among respondent especially as contrasted to the issue that the donors remitted their contributions on timely basis which had the highest standard deviation, SD = 1.56, therefore indicating highest variability on this issue. This finding is in line with Koehn (2012) who indicated that there is interest in the financial well-being of institutions of higher education, whether public or private, for-profit or not-for-profit— such as: regulatory agencies, licensing officials, accreditation agencies, equity owners whether present or potential in the case of for-profit institutions funding and other financial resource providers (e.g. donors), recipients of institutions' services (students their parents), faculty members and administrators, as well as the public at large.

After establishing the donor funding strategy that was crucial for universities, the next question was to identify how influential the strategy was, and from the findings were summarized in Table 4.11 and Figure 4.7, the fact that research grants were influential on finances collected scored highly among the respondents with a mean score, M =3.28, followed by the fact that project grants were also influential on the finances collected, M = 2.41.

Table 4.11: Donor Funding Strategy and Financial Sustainability

Statement	Mean	Std Index %	SD	CV
Contribution of research grants	3.28	65.6	1.2327	0.3758
Contribution of project grants	2.41	48.2	0.495	0.2054
Contribution of academic scholarships	1.32	26.4	0.4713	0.3570
Overall mean = 2.34				

On checking on the variations of the opinions with regard to various donor strategies, it was established that academic scholarships had the lowest standard deviation, $SD = 0.4713$ hence more consistency of the scores given by the respondents with regard to this aspect, especially as compared to research grants which had the highest standard deviation, $SD = 1.2327$.
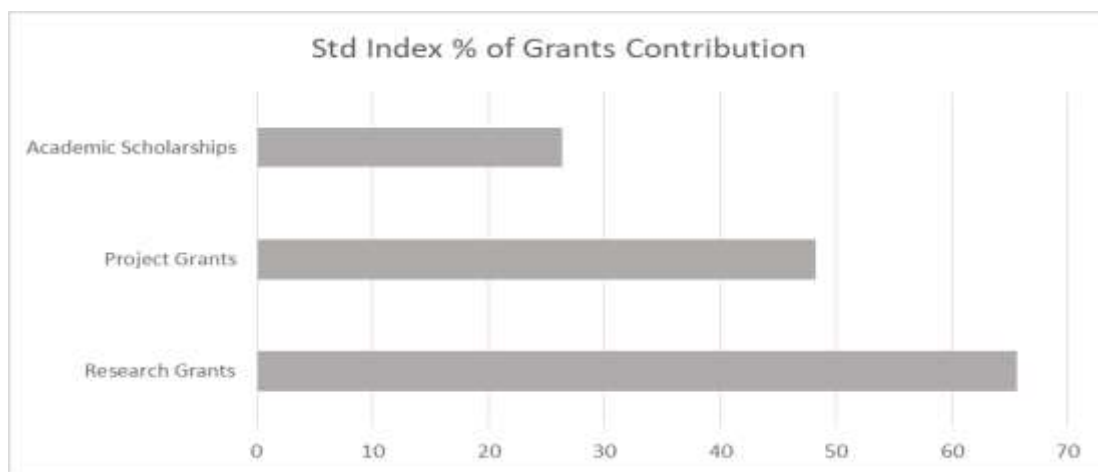
Figure 4.7: Standard Index Percentage Grants Contribution

This finding is in line with Lungo, Mavole and Martin (2017) who showed that the governance of projects has suffered sustainability due to poor community participation, low educational levels among households, undiversified households and poor understanding of governance.

The coefficient of variation ranges from 0.2054 to 0.3758 indicating a very narrow scope of volatility. This indicates that the finances from donor sources are relatively stable with limited scope of volatility.

4.4.3 Investment Income Strategy

The Table 4.12 below gives the summary of the findings with regard to the descriptive analysis for investment income strategies in selected universities. The fact that the universities running commercial services like health facilities used them to generate revenue had the highest mean $M = 3.58$ followed closely by the fact that some universities had invested in treasury bills that improved their financial stability with, $M = 3.42$.

Table 4.12: Investments Income Strategy

Statement	Mean	SD	CV
Our university is increasingly generating income from real estate	2.63	1.0588	0.4026
Our university is increasingly generating income from commercial services like health facilities, farming and the like for revenue generation	3.58	0.966	0.2698
Our university is increasingly generating dividend income from equity securities and shares in organizations like SACCOs	2.87	1.5017	0.5232
Our university is increasingly generating income from long term debt securities like bonds, debentures and the like	2.93	1.6589	0.5662
Our university is increasingly generating income from fixed deposits and similar bank deposits	2.45	1.2164	0.4965
Our university is increasingly generating income from short term debt securities like Treasury Bills, commercial paper, promissory notes and the like	3.42	0.9952	0.2910
Our university is increasingly generating income from catering services and other hospitality services	2.3	1.4966	0.6507
Overall mean = 2.88			

While considering the variability of the respondents with regard to investment income strategy, it was found out that among the statements that had lowest standard deviations were the fact that universities had invested in commercial services like health facilities

as well as those that invested in treasury bills yielded standard deviations, $SD = 0.966$ and $SD = 0.995$ respectively indicating consistent response among the respondents. This was a contrast to statements such as universities invested in government bonds that yielded $SD = 1.65$ indicating the highest variability on this statement among the respondents. This finding is in line with Murage and Onyuma (2015) who indicated that the income generating activities recorded a 15% rate of return on investment and a liquidity ratio of over three years. However, the declared surpluses did not take into account the personnel emoluments for the university staff working in the income generating activities. There is a need for public universities to maintain accurate and complete sets of financial statements for informed decision-making.

When the measures of central tendency (mean) and dispersion (standard deviation) are combined into the coefficient of variation (CV), the most volatile income is that generated from catering and hospitality services because of its CV of 0.6507. The least volatile is investment income from short-term debt securities like treasury bills. The reason could be because most universities keep their cash in bank deposits for operational purposes and thereby forsaking short-term debt instruments.

The Table 4.13 and Figure 4.8 presents the findings of this study with regard to investment income strategy with respect to the contribution levels within the investments in the universities and by extension the levels of sustainability. It can therefore be established that the issue of whether real estates were influential on finances collected was among the ones that scored highly $M = 2.41$ giving an indication that most respondents generally agreed with this statement especially in comparison with the least agreed to opinion that investment in treasury bills was influential on the finances collected, $M = 1.66$.

Table 4.13: Investment Income Strategy

Statement	Mean	Common Size Contribution Index %	SD
Investments in real estate	2.41	48.2	1.2714
Investment in stocks	1.68	33.6	0.4717
Investment in treasury bills	1.66	33.2	0.4764
Overall mean = 1.92			

This finding is supported by Musau (2016) who indicated that replacement, renewal, research and development decisions, positively contributed to SACCO performance as measured by dividends while expansion decisions had a negative contribution. This shows that the investment strategy adopted by an institution determines the amount of returns an organization gets and hence its contribution to financial sustainability.
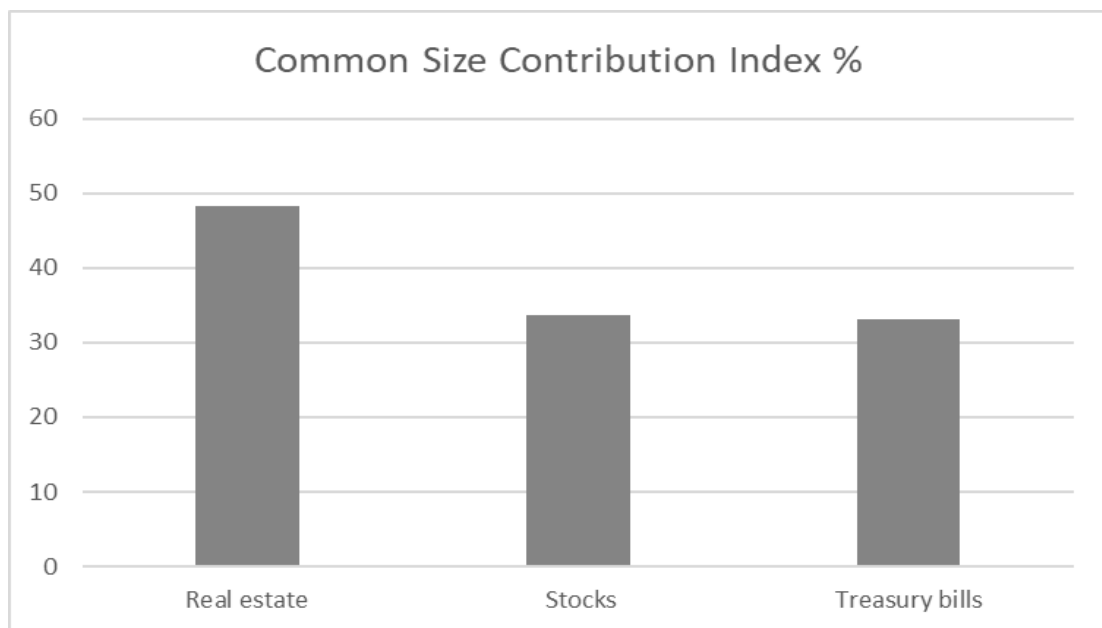
Figure 4.8: Common Size contribution Index of Investment Income

To establish the variability of the respondents on the issue of investment income strategy, it was found that investment in real estate had the highest standard deviation, $SD = 1.2714$ indicating high variability on this issue while investment in treasury bills

had the least standard deviation, $SD = 0.4717$, indicating that the investment was more consistent as far as the responses were concerned.

This finding indicates that universities have different capacities to invest in various investment strategies. The finding concurs with Rambo (2013) who established that income generating activities and non-income generating activities in schools were significantly different in terms of category, student population, age, annual income and number of paid workers.

4.4.4 Consultancy Funding Strategy

Consultancy funding strategy was also subjected to descriptive analysis using mean and standard deviation. The analysis was useful to identify some of the specific interventions made by the universities in order to raise consultancy funds. Table 4.14 provides summary of a descriptive analysis for consultancy funding strategy.

Table 4.14: Consultancy Funding Strategy

Statement	Mean	SD	CV
Our university is increasingly engaging in several consultancy services to improve revenues to run its projects	3.28	1.0581	0.3226
The university is increasingly developing specialist experts in different fields in different faculties for consultancy purposes	2.24	1.535	0.6853
The university is increasingly generating consultancy income from specialized experts that engage in various consultancy activities	2.97	1.4733	0.4961
Overall mean = 2.83			

Table 4.14 indicates that universities engage in several consultancy services to improve upon the revenues an issue which scored a reasonable mean, $M = 3.28$. Also, the fact that specialized experts in universities engage in various consultancy activities so as to raise revenue for the university, $M = 2.97$ shows how important it is as a source of revenue. This explains why many universities have made efforts towards engaging in

various consultancy services. This is in agreement with what was observed by Rodrigues, Wainaina and Mwangi (2006) who cited the case of University of Nairobi Enterprises Services Ltd which offer consultancy services to improve revenue collection. It is undeniable that consultancies play an important role for universities to raise their financial sustainability. The study findings are consistent with an observation made by Shattock (2010) that consultancy strategies have been crucial especially in bridging the budget deficits and therefore improving the financial sustainability of the universities.

Additionally, Table 4.14 indicates that universities' engagement in several consultancy services to improve revenues to run projects yielded the least standard deviation, *SD* =1.0581 giving an indication that respondents were generally consistent on this followed closely by the fact that universities had specialized experts who engage in various consultancy activities to raise revenue for the universities, *SD* =1.4733. This finding is supported by Anderson (2014) who alluded that the two primary assignments for professors in any institution of higher learning is the generation of new knowledge, educating students and teaching responsibilities in many STEM (Science, Technology, Engineering, Math) disciplines. Due to inefficiencies within institutions of higher learning throughout the world, the management within these institutions has been using the research work drawn by the professors to tackle different social issues. And in return, the institutions of higher learning have been compensated for their efforts. Many governments pay highly for academic research done by these institutions of higher learning.

With respect to the funds generated from the various forms of consultancy, Table 4.15 and Figure 4.9 show the structural contribution of consultancy funds by individual experts, departments and university wide consultancies.

Table 4.15: Consultancy Fund Strategy

Statement	Mean	Common Size Contribution Index %	SD
Individual Consultancy	3.41	48.2	0.4714
Departmental Consultancy	2.61	33.6	0.5123
University-Wide Consultancy	3.64	33.2	0.5663
Overall mean = 3.22			
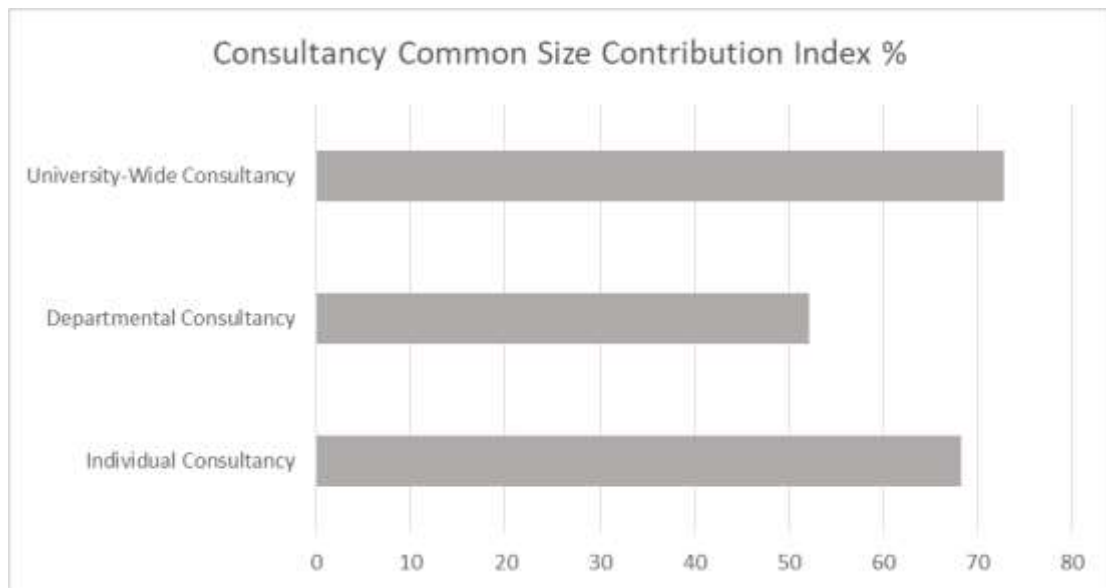
Figure 4.9: Consultancy Common Size Contribution Index Percentage

Figure 4.9 shows that the contributions of consultancy funds are relatively equal with respect to university-wide consultancy, departmental consultancy and individual consultancy. The move towards interdisciplinary consultancy however is evidenced by the fact that the relative contribution from university-wide consultancy is the highest compared to individual and departmental consultancies.

4.4.5 Linkages and Partnership Strategy

Linkages and partnerships was identified as one of the most important resource mobilization strategies and as summarized in the Table 4.16, the statement that the universities had entered into public-private partnerships had the highest mean, $M = 3.27$, indicating that this strategy was common in most of the universities that participated in the study especially in comparison with the fact that universities had entered into strategic alliances with the various stakeholders, $M = 2.21$. This finding is in line with Edmondson *et al.* (2012) who noted that universities and industry have been collaborating for over a century, but the rise of a global knowledge economy has intensified the need for strategic partnerships that go beyond the traditional funding of discrete research projects. It also noted that world class research universities are at the forefront of pioneering such partnerships. These partnerships have had a positive impact on financial sustainability of the learning institutions.

Table 4.16: Linkages and Partnership Strategy

Statement	Mean	SD	CV
The university is increasingly entering into strategic alliances with various stakeholders	2.21	1.1328	0.5126
The university is increasingly entering into public private partnerships	3.27	1.5396	0.4708
Our university has well stipulated partnership and linkages policies	2.27	1.0096	0.4448
Overall mean = 2.58			

Table 4.16 shows that universities had entered in public-private partnerships had the highest standard deviation, $SD = 1.5396$ while the statement that the universities had entered into strategic alliances with various stakeholders yielded the least, $SD = 1.1328$ indicating more consistency of the opinion from the respondents on this aspect. Composite index was also incorporated in the descriptive analysis as depicted in Table 4.17 and Figure 4.10, both of which indicated the relative contribution the various components of linkages and partnerships income. The results suggested that engagement in public-private partnerships was highly agreed to amongst the respondents, yielding a

maximum arithmetic mean, $M = 2.76$ followed by academic exchange programs and training, $M = 2.1$.

Table 4.17: Descriptive Statistics on Linkages and Partnerships

Statement	Mean	Composite Index %	SD
Public private partnerships	2.76	55.2	1.3252
Academic exchange programs	2.1	42.0	1.0022
Academic trainings	1.62	32.4	0.4889
Overall mean = 2.16			

Based on the above results, the high value of the arithmetic mean relating to public-private partnerships signifies underlying efforts by the institutions to form strategic alliances whose aim is to improve their financial sustainability. This finding is in tandem with other empirical findings especially one by Lee, and Pennings (2013) who noted that partnership-based linkages were measured by strategic alliances.

With regard to the variability of the statements given by the respondents, the findings summarised in Table 4.17 and Figure 4.10 indicate that academic trainings had a least value of, $SD = 0.4889$ indicating more consistency in comparison to public-private partnerships at $SD = 1.32$ indicating high variability on this aspect. This means that academic exchange programme is a more popular strategy in universities as compared to public private partnerships.
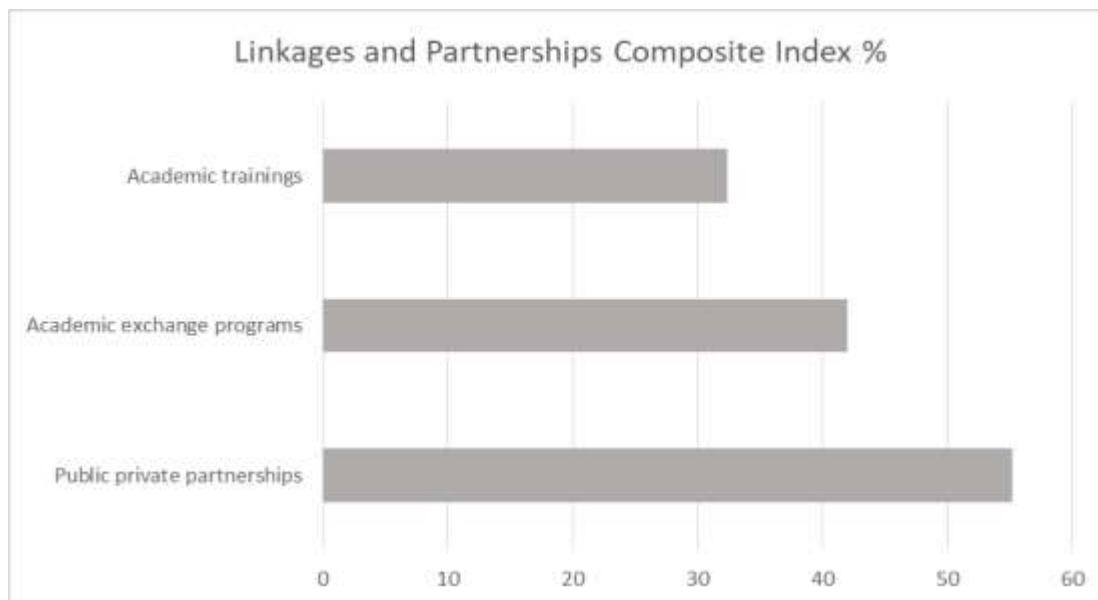
Figure 4.10: Linkages and Partnerships Composite Index Percentage

It emerges that public private partnerships are increasingly being used by universities to finance various programmes including university infrastructure.

4.4.6 Financial Sustainability

Table 4.18 provides a summary of the data with respect to the net assets growth ratio and the current ratio growth rate over the five-year period ranging from 2014 to 2018. It is these two that are used to provide the financial sustainability index that is equally weighted (for solvency and liquidity respectively) among the two. This is also provided in Table 4.18 and Figure 4.11 respectively.

Table 4.18: Financial Sustainability

Statement	%	SD	CV
Net Asset Growth Rate (NAGR %)	38.03	6.197	0.1630
Current Ratio Growth Rate (CRGR %)	54.93	4.507	0.0820
Financial Sustainability Index	46.48	5.352	0.1151
Mean % = 46.48			

The sustainability index from Table 4.18 is below 50% an indication that universities are encountering huge financial burdens and that their current financial levels may not be sustainable into the long-term future. This finding is in agreement with the current consensus that financing of higher education across the globe is not sustainable and that new innovative ways of funding may be required to assure universities of long-term sustainability. This consensus is portrayed by Ahmad, Ismail and Siraj (2019), Almagtome, Shaker, Al-Fatlawi and Bekheet (2019), Pavlov and Katsamakas (2019), Lee, Kim, and Lee (2020) as well as Millett (2020). That the CV of the net asset growth rate and the current ratio growth rate as well as the financial sustainability index are very low is supportive of the findings of the diminished growth possibility of universities from the existing financial arrangements and hence the need to diversify funding sources.

4.5 The Diagnostic Tests

Multiple linear regression model was subjected to a range of diagnostic tests in order to verify in the suitability and goodness of fit of the model. These tests comprised normality, multicollinearity, multicollinearity, heteroskedasticity and serial correlation tests. Each of the tests are described as below:

4.5.1 Normality

Normality tests are conducted in order to establish whether study variables as well as the residuals exhibited normal distribution as theorized in the assumptions of the classical regression model. The test was conducted in two stages, firstly all the independent variables were subjected to normality tests. One of the statistical techniques used in measuring normality of the distribution of variables is Shapiro-Wilk test (Chimkono, Mphako-Banda, Taylor & Kishindo, 2021; Cavus, Yazici & Sezer, 2021). Consequently, Shapiro-Wilk test was used in analysing normality of the distribution of the independent variables and the findings presented in Table 4.19.

Table 4.19: Shapiro-Wilk for Normality

Variable	W	z	Prob>z
Financial sustainability	0.626	6.851	0.000
Fees collection strategy	0.677	6.532	0.000
Donor funding strategy	0.610	6.940	0.000
Investment strategy	0.554	7.232	0.000
Consultancy strategy	0.709	6.306	0.000
Linkages and partnership strategy	0.597	7.016	0.000

As Table 4.19 depicts, the reported *p*-values for the Shapiro-Wilk test statistics which are far less than the recommended 5% level of significance ($p < .05$); implied that the assumption of normality of the distribution of the variables was not violated. In other words, all the variables were normally distributed, thus satisfying the requirements of normality of the distribution.

As pointed out earlier, normality test was performed on the procedures of a multiple linear regression model in order to establish its suitability. This is in tandem with the studies suggesting the significance of checking the normality of the distribution of the error terms (Residuals) of the regression model (Schmidt, & Finan, 2018). Additionally, the assumption of normality of the error terms is useful multiple linear regression analysis (Tharu, 2019). Garcia, and Eldeiry (2020) reaffirms this by noting that normality of the distribution of the residuals is an important requirement when implementing linear regression models.

Progressively, various approaches have been proposed in prior empirical research on how to go about establishing normality of residuals. One such approach is by plotting histogram of distribution of the error terms which is required to exhibit Gaussian curve in order to exhibit normality of the distribution (Yang, Liu, Xin & Wang, 2021). This is an agreement with unfolding research studies pointing out the significance of plotting histograms in determining the validity of the distribution of the residuals of the regression models(Bataineh, Abu-Fares & Al-Jdayeh, 2022). Accordingly, the histogram

of the residuals of the multiple linear regression model was plotted and presented in Figure 4.11.
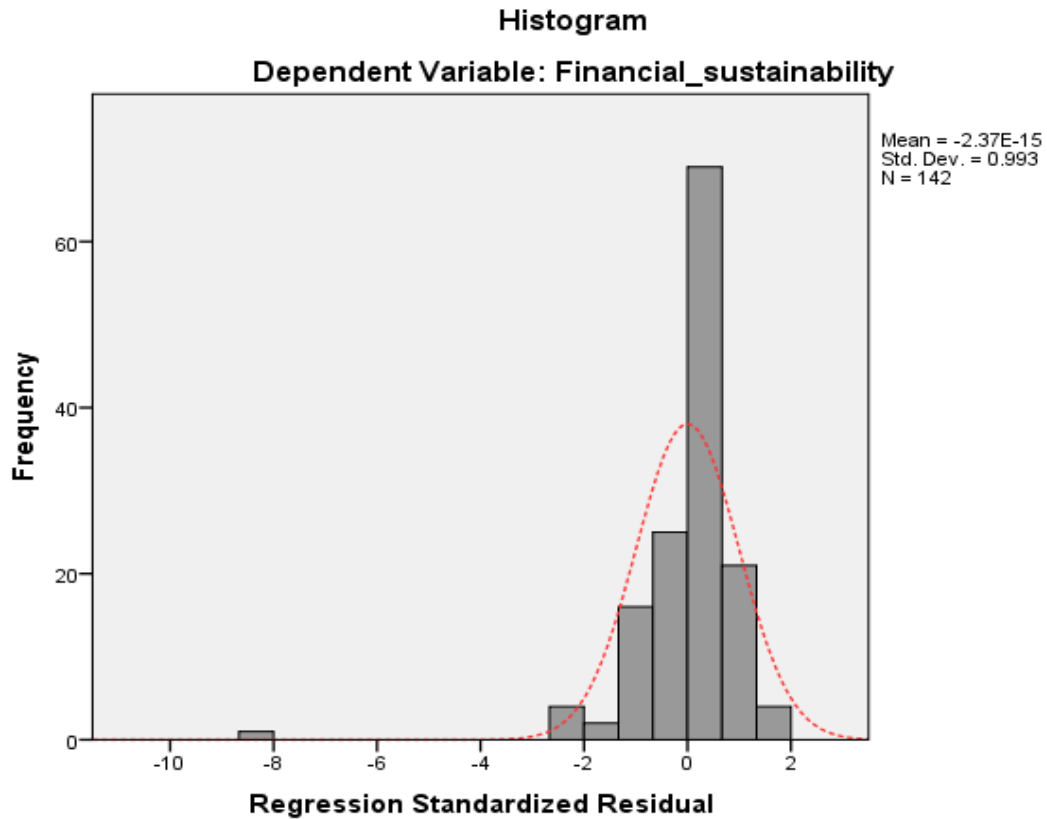
Figure 4.11: Histograms of the Residuals

The distribution of the residuals as exhibited in the histogram above suggests that a large portion of the data points were lined in accordance with the normal distribution Gaussian curve (bell-shaped curve). This implied normality of the distribution of the residuals of the regression model; thus, satisfying the condition of normality as per the assumptions of the linear regression model. Furthermore, normality of the residuals was checked using Q-Q plots as presented in Figure 4.12.
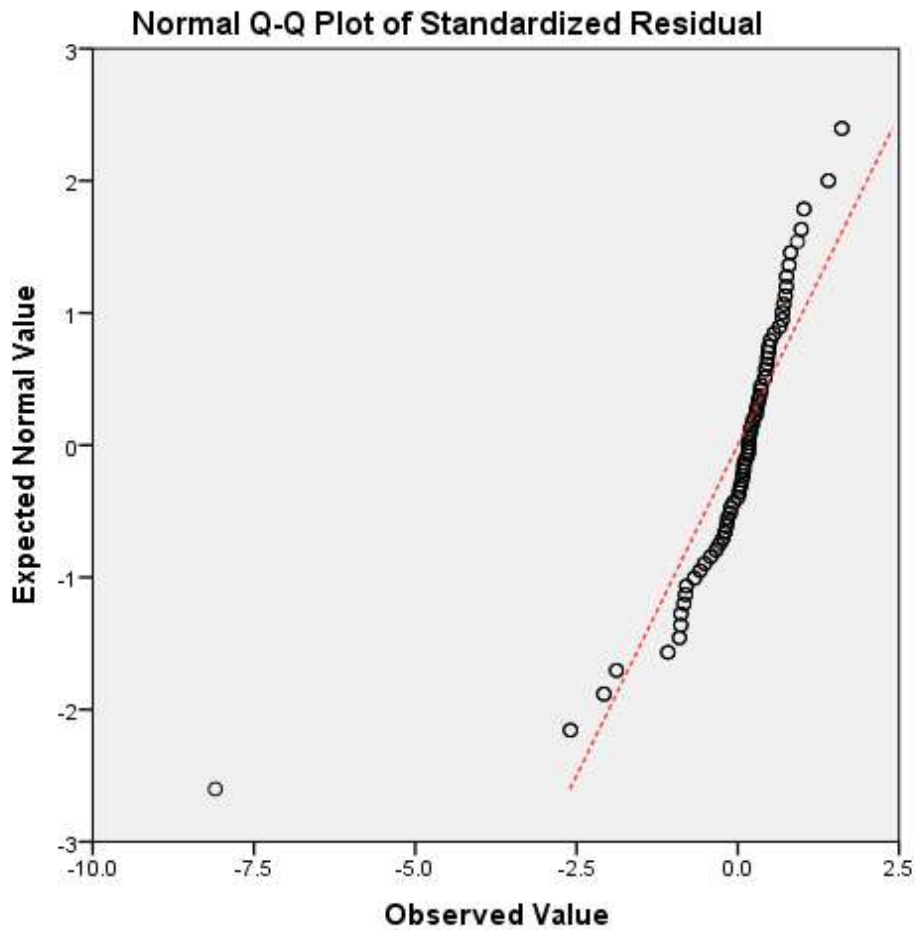
Figure 4.12: Q-Q Plots of the Residuals

The Q-Q plots indicate that most of the data points were distributed along the fitted reference line which is indicative of normality of the distribution of the residuals. This is in tandem with the suggestions by Nguyen *et al*. (2021) who posited that the data points in QQ plots should not deviate significantly from the reference line. In summary, all the normality tests performed on both the independent variables and the residuals of the regression model confirmed normality of the distribution, suggesting that the requirement of normality for the regression model was not violated.

4.5.2 Multicollinearity Test

The purpose of conducting multicollinearity test is to ascertain the existence of significant intercorrelations amongst the independent variables of a regression model. As such, multicollinearity has been widely termed as a situation where two or more independent variables in a given statistical model are linearly related (Akintunde *et al.,* 2021). Matthew *et al.* (2022) contend that multicollinearity refers to existence of significant linear relationship between two or more predictor variables in a regression model. Variance inflation Factor (VIF) is used in measuring multicollinearity where are threshold of VIF <5 suggests absence of multicollinearity (Li, Cong, Xie, Wang & Wang, 2022). The results of multicollinearity tests were therefore presented in Table 4.20.

Table 4.20: Multicollinearity Test Results

Variable	Multicollinearity statistics	
	Tolerance	VIF
Fees collection strategy	0.347	2.88
Donor funding strategy	0.252	3.97
Investment strategy	0.290	3.45
Consultancy strategy	0.325	3.08
Linkages and partnership strategy	0.485	2.06

Multicollinearity test results yielded VIF values between 2 and 4. This was an indication of absence of multicollinearity in the predictors of the regression model. Obaid and Ali (2022) recommended that the VIF ≤ 10, or a tolerance ≥ 0.1 as a threshold to simplify absence of multicollinearity. This implied that the multicollinearity assumption was not violated, which improves the predictive performance of the regression model.

4.5.3 Linearity Test

Linearity Test was conducted to establish whether each of the independent variables (predictors) exhibited a linear relationship with the dependent variable. This

hypothesized linear relationship can be checked by a scatter diagram between the predictor variables and the dependent variable (Sisay, 2021). As such, the scatter diagrams for each of the independent variables versus the dependent variable were presented in Figure 4.13:
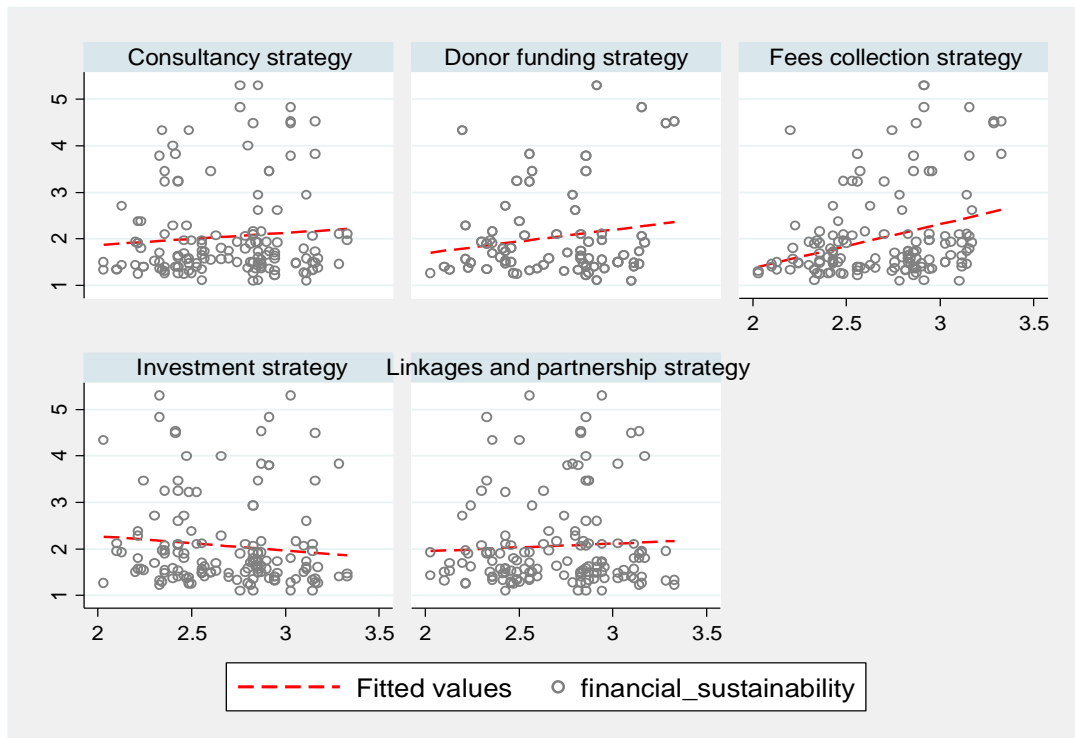
Figure 4.13: Scatter Plot of the Linearity

As Figure 4.6 depicts, majority of the data points tend to be bundled together forming a linear pattern either in the positive or negative direction, suggesting an element of linearity in the relationship between each of the independent variables and the dependent variable. The implication of this kind of relationship was that the assumption of linearity of the relationship between each of the independent variables on the dependent variable was not violated; which implied the models fit to describe the relationship between independent variable and the dependent variable.

4.5.4 Homoscedasticity

Homoscedasticity is used to examine whether the residuals of a regression model exhibit constant variance from one observation to the next (Ratri, Susanti & Slamet, 2021). This is in an agreement with Supartini *et al*. (2022) who articulate that homoscedasticity test establishes whether the residuals of a given regression model have constant variance. This test was therefore performed with the aim of establishing whether the residuals of the multiple linear regression model exhibited constant variance. In order to inspect the presence of homoscedasticity, some studies propose use of scatter plots of residuals of the regression model (Ertem, Arslan & Özenir-Üren, 2021). Consequently, this approach was applied in checking of homoscedasticity of the error terms of the regression model as represented in Figure 4.14.
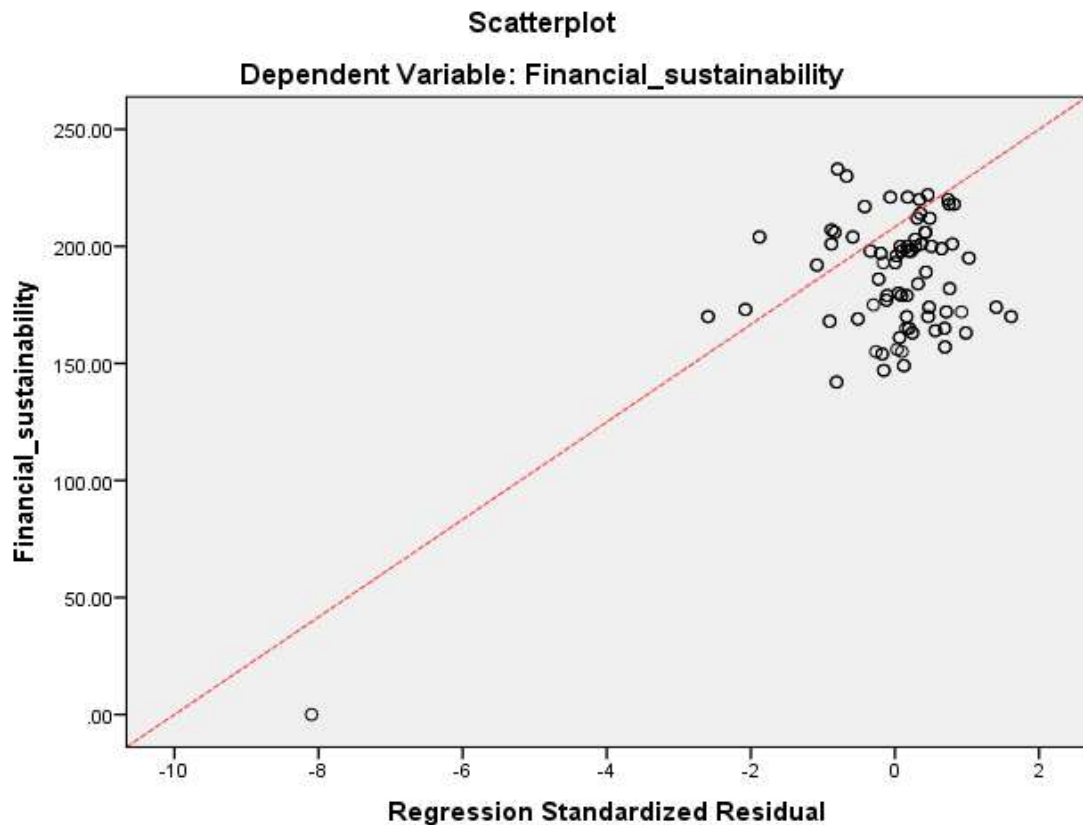
Figure 4.14: Scatter Plot of the Residuals

Figure 4.6 indicates that most of the data points lie along the reference line which is indicative of constant variance (homoscedasticity) of the residuals, which implies that the condition of constant variance of the residuals was met.

In addition, homoscedasticity tests were complemented by tests of heteroscedasticity; which is the opposite of homoscedasticity as it checks for non-uniformity of variance of the residuals of the regression model. Implementation of the test is based on the null hypothesis of constant variance. Breusch-Pagan/Cook-Weisberg test was implemented in the test for heteroskedasticity and the findings reveal that the computed statistic of Chi-square (χ^2= 84.30, p = 0.0631). The observed p-value, p > .05, suggested absence of statistical significance; thus, justifying acceptance of the null hypothesis. Considering that the tests signified presence of constant variance in the residuals, the model was therefore deemed fit on account of constant variance of the residuals, which rendered financial resource mobilization strategies as significant predictors of financial sustainability in the sampled institutions .

4.5.5 Serial Autocorrelation

The residuals of the fitted regression model were subjected to serial correlation test to ascertain whether they exhibited characteristics of autocorrelation from one residual to the next. Elhawwa (2022) contend that serial autocorrelation in regression models can be checked using Durbin-Watson statistic. This prompted Durbin-Watson tests to be conducted in order to ascertain autocorrelation of the residuals. From the findings, the value of the Durbin-Watson statistic, $d(6,71)$ = 2.1062, which was consistent with the recommended range, suggesting lack of statistical significance in the autocorrelations of the residuals; thus, making the model fit to describe the relationship between the study variables.

In addition, the residuals of the models were subjected to additional autocorrelation tests in order to complement the results of Durbin-Watson test. This was achieved through use of a more robust Box-Ljung Statistic. This approach has been widely applied in

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measuring residual autocorrelation (Costales, 2021; Kumari *et al*., 2022). Subsequently, this test was applied in the study and the results of Box-Ljung autocorrelation test were presented in Table 4.21.

Table 4.21: Autocorrelations Analysis

Lag	Autocorrelation	Std. Error	Box-Ljung Statistic	
			Value	Sig.
1	-0.895	.074	58.64	.201
2	0.832	.061	8.37	.311
3	-0.798	.057	41.39	.309
4	-0.753	.046	8.40	.412
5	0.152	.081	78.17	.332
6	-0.811	.064	136.12	.071
7	0.883	.057	12.11	.065
8	-0.930	.054	76.21	.511
9	0.375	.056	63.92	.090
10	0.000	.053	59.18	.456

The results of autocorrelation tests indicated that the Ljung Statistic (Q-statistic) yielded *p*-values that were more than 5% ($p \geq .05$) for all the lags that were considered in the analysis, suggesting lack of statistical significance for the computed Box-Ljung statistics. This implied that the autocorrelation of the residuals of the model failed to exhibit statistical significance for all the lags that were considered. The observed non-significance of the autocorrelation of the residuals implies that the model was fit, as postulated in the assumptions of the classical regression model.

4.6 Inferential Analysis

Inferential analysis was conducted in order to examine the nature and strength of the relationships between independent variable and the dependent variable. This was achieved through use of four major analytical models—simple linear regression analysis, multiple linear regression analysis, hierarchical moderation analysis and panel data analysis which was applicable in secondary data. Additionally, the analysis was

conducted based on the study objectives in order to help answer the research questions of the study.

4.6.1 Simple Linear Regression Analysis

The first objective of the study was to evaluate the effect of fees revenue mobilization strategy on financial sustainability of universities in Kenya. Firstly, the relationship was determined using simple linear regression analysis in order to establish the strength of the relationship. The first set of the results of this analysis was of the goodness of fit of the model summarised in Table 4.22. The computed F-statistic had a p-value which was far < 0.05 level of significance therefore indicating that the model was fit to estimate the relationship between these two variables. The model is therefore stable for bivariate analysis of the effect of fee collection strategy on financial sustainability of universities in Kenya.

Table 4.22: Model Summary and ANOVA table

Source	SS	Df	MS	Number of obs = 64
				F (1, 69) = 535.57
Model	13.200939	1	13.200939	Prob > F = 0
Residual	1.70073685	63	0.02464836	$R^2 = 0.8859$
				Adj $R^2 = 0.8842$
Total	**14.9016759**	**64**	**0.212881084**	**Root MSE = 0.157**

As Table 4.22 depicts, $R^2 = 0.8859$, which means that 88.59% of variations in the dependent variable were caused by variations in the independent variables which is referred to as explained variation, while 11.41 % were caused by other factors (unexplained variation). This finding is in line with Resource Mobilization Theory which asserts that social movements succeed through the effective mobilization of resources and the development of political opportunities for members. Social movements can mobilize both material and non-material resources that are used in financial resource mobilization strategies. It also holds that social movement organizations with powerless or resource-poor beneficiaries require outside support and

funding, Otha and George (2012). Subsequently, the regression coefficients in Table 4.23.

Table 4.23: Regression Coefficients Table

Financial Sustainability	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
Fees Collection Strategy	0.6691142	0.028913	23.14	0.000	0.6114345	0.7267939
Cons	0.329728	0.049299	6.69	0.000	0.2313795	0.4280766

Table 4.23 above clearly indicate that fees collection strategy had a statistically significant regression coefficient of 0.669, indicating that a unit increase in fees was associated with an increase in financial sustainability by 0.669 units.

Null hypothesis: There was no statistically significant relationship between fees collection strategy and financial sustainability.

The hypothesis testing therefore was expressed mathematically as follows:

$H_0: \beta_1 = 0$

$H_1: \beta_1 \neq 0$

The decision rule was to reject the null hypothesis since *p*-value < .05, indicating that fees collection strategy significantly predicted financial sustainability of the universities at 5% level. This finding is in line with Robinson and Sensoy (2013) who assert that higher education institutions are presently charging higher fees as compared to the last few decades in an effort to sustain their study programmes. Higher education at the beginning of the 21st century has never been in greater demand, both from individual students and their families, for the occupational and social status and greater earnings it is presumed to convey, as well as from governments for the public benefits it is presumed to bring to the social, cultural, political and economic well-being of countries.

Having observed a statistically significant effect of fee collection strategy on financial sustainability, the results echo what was observed by Robinson and Sensoy (2013) after conducting a survey on higher education sector in the United States and they pointed out that there has been a growing need for universities to charge higher fees in order to sustain their programmes. Such findings were also affirmed by Zumeta *et al*. (2012) who also conducted a study on American higher education and revealed importance of fees collection strategy especially for institutions of higher learning such as colleges and universities pointing out the fiscal crisis that normally affects these institutions.

The second objective of the study was to examine the effect of donor funding mobilization strategy on financial sustainability of universities in Kenya. After conducting simple linear regression analysis, Table 4.24 shows the results of the goodness-of-fit test for the model in which the computed *F*-statistic had a p-value of < .05, therefore indicating that the model was fit to be used for the relationship between donor funding and financial sustainability.

Table 4.24: Model Summary and ANOVA table

Source	SS	Df	MS	Number of obs = 64
				F (1, 69) = 700.72
Model	13.5658445	1	13.5658445	Prob > F = 0
Residual	1.33583138	63	0.019359875	$R^2 = 0.9104$
				Adj $R^2 = 0.9091$
Total	**14.9016759**	**64**	**0.212881084**	**Root MSE = 0.13914**

The goodness of fit of the model results summarized in the table above clearly show that the value of $R^2 = 0.9104$, which means that 91.04% of variations in the dependent variable were caused by variations in independent variables, while 8.96% was caused by other factors. This finding is supported by Lungo *et al*. (2017) who alluded that the governance project has suffered sustainability due to poor community participation, low educational levels among households, undiversified households and poor understanding

of governance. After testing the goodness of fit of the model, the next step was to examine the table of regression coefficients which is summarized in Table 4.25 below:

Table 4.25: Regression Coefficients Table

Financial Sustainability	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
Donor Funding Strategy	0.8232659	0.031101	26.47	0.000	0.761222	0.8853098
Cons	0.2185404	0.047093	4.64	0.000	0.1245922	0.3124887

The results for regression analysis show that donor funding had a coefficient which indicates that a unit increase in donor funding was associated with 0.82 increase in financial sustainability of universities. The next step was to conduct hypothesis testing as follows:

Null hypothesis: There was no statistically significant relationship between donor funding strategy and financial sustainability.

The hypothesis testing therefore was expressed mathematically as follows:

$$H_0: \beta_1 = 0$$

$$H_1: \beta_1 \neq 0$$

The decision rule was to reject the null hypothesis since p-value < .05, indicating that donor funding strategy significantly predicted financial sustainability of the universities at 5% level. This finding is in line with Cheboi (2014) who indicated that at 95% confidence level, there were significant negative linear association between donor funding and performance. Further, the results of simple linear regression analysis suggested that donor funding strategy was among the resource mobilization strategies that had statistically significant regression coefficient at 5% level of significance. Furthermore, the regression coefficient was positive indicating a positive relationship

between this strategy and financial sustainability implying that an increase in donor funding strategy was associated with an increase in financial sustainability. The study findings therefore concur with observations by Bogan (2008) who pointed out the fact that the higher the donor funding for the universities, the more funds available to them for running their projects. This was later affirmed in a study on Egerton university by Murage and Onyuma (2015) who reported that an improvement in financial sustainability could be attributed to the funds received from donor agencies.

From the theoretical perspective, the study findings align well with Resource Mobilization Theory proposed by Oberschall (1973) articulating the significance of resource mobilization towards attaining organizational objectives, including financial sustainability. In particular, the theory provides a pathway to understand the role of donors and other funders' contribution towards attaining financial sustainability, which was largely reaffirmed in the findings of the present study. In addition, the findings were in tandem with the postulations of Regression Discontinuity Theory of Education Interventions that provides justification for extending merit-based scholarship awards to students as an intervention to scale up their academic performance; as well as augmenting the financial sustainability of the recipient institutions of higher learning. Further, the significant role played by donor funding strategy towards improving financial sustainability as exhibited in the findings resonates with theoretical underpinning of the Resource Dependency Theory Propounded by Pfeffer and Salancik (1970) who placed emphasis on the role of external environment towards supporting the attainment of organizational objectives. In essence, the contributions from the donors remains an important external factor that can go a long way towards financial sustainability of the selected universities, a position which is validated in the findings of the present study.

The third objective of the study was to find out the effect of investment income mobilization strategy on financial sustainability of universities in Kenya. The Table 4.24 shows the model summary and ANOVA results for investment income strategy and financial sustainability of the universities. The results indicated that the F-statistic has p-

value $< .05$, which implied that the model was good to be used for the relationship between investment income strategy and financial sustainability of the universities.

Table 4.26: Model Summary and ANOVA Table

Source	SS	Df	MS	Number of obs = 64
				F (1, 69) = 328.35
Model	12.3140194	1	12.3140194	Prob > F = 0
Residual	2.58765647	63	0.037502268	R^2 = 0.8264
				Adj R^2 = 0.8238
Total	**14.9016759**	**64**	**0.212881084**	**Root MSE = 0.19366**

Table 4.26 show that R^2 = 0.8264, implying that 82.64% of variations in the dependent variable were caused by variations in the independent variables, while 17.36 % were caused by other factors. After testing the goodness of fit of the model, the Table 4.27 summarizes the findings of the regression coefficients and their respective p-values interrogate the findings using extant theory and empirical evidence.

Table 4.27: Regression Coefficients Table

Financial Sustainability	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Investments Income Strategy	0.7842093	0.043277	18.12	0.000	0.6978734	0.8705453
Cons	0.2878579	0.064814	4.44	0.000	0.1585581	0.4171576

The study findings summarized in the table above clearly show that investment income strategy had a regression coefficient, $\beta_3 = 0.78$ which was statistically significant at 5% level of significance which therefore shows that an increase in investment income strategy by one unit was associated with an increase in financial sustainability by 0.78 units. Based on the **Null hypothesis** which stated that there was no statistically significant relationship between investments income strategy and financial sustainability, the hypothesis testing was expressed mathematically as follows:

$$H_0: \beta_3 = 0$$

$$H_1: \beta_3 \neq 0$$

The decision rule was to reject the null hypothesis since *p*-value < .05, indicating that investments in income strategy significantly predicted financial sustainability of the universities at 5% level. These findings were in agreement with what was observed by Rambo (2013), who established that income generating activities and non-income generating activities in schools were significantly different in terms of category, student population, age, annual income and number of paid workers. In addition, the positive influence of investment strategy on financial sustainability supports what was observed by Murage and Onyuma (2015) whose study was conducted at Egerton University and their findings illustrated how investment strategies were critical in improving the financial sustainability of the university.

The fourth objective of the study sought to establish the effect of consultancy as a resource mobilization strategy on the financial sustainability of the selected universities. Consequently, after using simple linear regression analysis the results of the model summary were summarized in the Table 4.28 which show that the *F*-statistic had a *p*-value > 0.05, the level of significance, hence indicating the goodness of fit of the model to be used to model the relationship between independent and the dependent variable.

Table 4.28: Analysis of Variance

Source	SS	Df	MS	
				Number of obs = 64
				F (1, 69) = 269.76
Model	11.8664383	1	11.8664383	Prob > F = 0
Residual	3.03523757	63	0.04398895	R^2 = 0.7963
				Adj R^2 = 0.7934
Total	**14.9016759**	**64**	**0.212881084**	**Root MSE = 0.20974**

The finding summarized in Table 4.28 show that the value of R^2 = 0.7963, which means that 79.63% of variations in the dependent variable were caused by variations in the independent variable a situation referred to as explained variation, while 20.37% was caused by other factors which is referred to as unexplained variation. After establishing

the goodness of fit of the model, the next stage was to analyse the regression coefficients. This finding is in line with Anderson (2014) who noted that the two primary assignments for professors in any institution of higher learning is tasked with the generation of new knowledge and educate students and teaching responsibilities in many STEM (Science, Technology, Engineering, Math) disciplines. Due to inefficiencies within institutions of higher learning throughout the world, the management within these institutions has been using the research work drawn by the professors to tackle different social issues. Many governments pay highly for academic research done by these institutions of higher learning summarized in the Table 4.29 that shows the coefficients alongside their respective *p*-values:

Table 4.29: Regression Coefficients Table

Financial Sustainability	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
Consultancy fund strategy	0.8681358	0.052857	16.42	0.000	0.7626897	0.9735818
Cons	0.1439393	0.079614	1.81	0.075	-0.0148866	0.3027653

From the results of the regression table for consultancy fund strategy it is clear from the findings of the value of the regression coefficient was $\beta_4 = 0.86$, indicating that a unit increase in consultancy was associated with 0.86 units increase in financial sustainability. Subsequently, the process of carrying out hypothesis testing procedure was as follows:

Null hypothesis: There was no statistically significant relationship between consultancy funding strategy and financial sustainability.

The hypothesis testing therefore was expressed mathematically as follows:

$H_0: \beta_4 = 0$

$H_1: \beta_4 \neq 0$

The decision rule was to reject the null hypothesis since *p*-value < .05, implied that consultancy fund strategy significantly predicted financial sustainability of the universities at 5% level. This finding is in line with Rodrigues *at el.* (2006) who noted that University of Nairobi (UoN) has continued to receive reduced financial allocations from the Kenyan government than the estimated expenditure. Hence the institution has been accumulating debts over several years and this trend will continue as a result of the strong indications that the government will no longer be able to fully finance public universities.

The fifth objective of the study focused on establishing effect of linkages and partnerships financial resource mobilization strategy on financial sustainability of universities in Kenya. After using a simple linear regression model, the findings are summarized in Table 4.30 below provide both the model summary as well as ANOVA that was meant to test whether ratio of variations caused by the model and those of the residual were statistically significant from the computation of the *F*-statistic.

Table 4.30: Model Summary and ANOVA Table

Source	SS	Df	MS	Number of obs = 64
				F (1, 69) = 620.88
Model	13.4112472	1	13.4112472	Prob > F = 0
Residual	1.49042868	63	0.021600416	$R^2 = 0.9$
				Adj R^2= 0.8985
Total	**14.9016759**	**64**	**0.212881084**	**Root MSE = 0.14697**

The result of the goodness of fit test above indicate that the value of R^2= 0.9, which means that 90% of variations in the dependent variable were caused by variations in the independent variables, while 10 % were caused by other factors. In checking for the goodness of fit of the model, it can be seen that the *p*-value for the *F*-statistic was <0.05 indicating that the model was fit as a predictive model for the relationship between linkages and partnerships and financial sustainability. This finding concurred with Edmondson *et al.* (2012) who indicated that world class research universities are at the forefront of pioneering such partnerships. These partnerships have had a positive impact

in financial sustainability of the learning institutions. This was followed by a summary of the regression coefficients in Table 4.31:

Table 4.31: Linkages and Partnership Resource Regression Coefficients Table

Financial Sustainability	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Linkages and partnership strategy	0.52842	0.02120	24.9	0.00	0.48612	0.570735
Cons	0.52006	0.03888	13.3	0.00	0.44248	0.597631

From the results of the regression Table 4.31 for linkages and partnerships above it is clear that this resource mobilization strategy had a statistically significant regression coefficient and the value of regression coefficient was $\beta_5 = 0.52$ thus indicating that a unit increase in linkages and partnership strategy was associated with 0.52 increase in financial sustainability of the selected universities, subsequently the process of carrying out hypothesis testing procedure was as follows:

Null hypothesis: There was no statistically significant relationship between linkages and partnership strategy and financial sustainability.

The hypothesis testing therefore was expressed mathematically as follows:

$$H_0: \beta_5 = 0$$

$$H_1: \beta_5 \neq 0$$

The decision rule was to reject the null hypothesis since *p*-value $< .05$, implied that linkages and partnerships strategy significantly predicted financial sustainability of the universities at 5% level. This finding is supported by Mungai and Wanja (2011) who established that the organizational strategy is associated with the performance of the collaboration. University-driven collaborative projects not benefiting from public grants are more likely to develop outcomes that match or are above to the previously defined ones. Typically, such projects do not run smoothly as they encounter unexpected and

severe technical problems while being carried out. Having observed that linkages and partnerships strategy contributes significantly to financial sustainability of the universities concurs with what was observed by Edmondson *et al.* (2012) who after focusing on how to make industry university partnerships work, concluded that such partnerships have a positive impact on financial sustainability of institutions of higher learning.

4.6.2 Moderating Variable Analysis

Moderating analysis was conducted on secondary data which was panel data collected for a period of five years (2014-2018), for the 64 institutions. The 64 universities were used as panel variables, and after reshaping the data, a total of 320 observations were made.

Pooled ordinary least squares (OLS) regression model was conducted in order to establish overall relationship between independent and dependent variables in the panel data sets. The results were summarised in Table 4.32.

Table 4.32: Regression Model

Group variable: University					Number of obs =	320
					Number of groups =	64
R-sq.:					Obs per group:	
within = 0.0052					min =	10
between = 0.0211					avg =	10
overall = 0.0023					max =	10
					Wald chi2(5) =	0.79
corr(u_i, X) = 0 (assumed)					Prob > chi2 =	0.003
Sustainability	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
Fees collection strategy	0.0362	0.0609	0.3122	0.5600	0.0172	0.0552
Donor fund strategy	0.0511	0.0154	0.2720	0.0110	0.0469	0.0553
Investment strategy	-0.0671	0.0341	-0.7000	0.0570	-0.0555	-0.1285
Consultancy strategy	0.0920	0.0522	0.3122	0.0420	0.0233	0.0491
Linkages and partnerships strategy	0.0421	0.0711	0.2411	0.0390	0.0250	0.0592
Government Grant	4.3440	0.7700	7.9900	0.000	-1.8083	10.4963
_cons	0.8113	0.448	1.2479	0.000	0.2522	1.3704

Regression Coefficients after the Moderating effect

The findings summarised in Table 4.32 shows that fees collection strategy has a positive effect on financial sustainability, b_1= (0. 0362, p > .05). Furthermore considering that the regression coefficient was positive implied that any unit increase in fees collection was associated with an increase in financial sustainability of the universities by a factor of 0.0362 units. Similarly, donor funding strategy significantly affected financial

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sustainability b_2= (0.0511, $p < .05$), and their relationship was positive indicating that an increase in donor funding by 1 unit was associated with an increase in financial sustainability by 0.0511 units.

Moreover, the findings also show that investment strategy did not significantly predict financial sustainability of the universities, b_3= (-0.0671, $p > .05$). Furthermore, the relationship was negative indicating that an increase in investment strategy by or one unit was associated with a decrease in financial sustainability by 0. 0671units. In addition to that, the findings show that consultancy strategy significantly affect financial sustainability of the universities, b_4 = (0.0920, $p < .05$), this also implied that an increase in consultancy strategy by 1 unit was associated with a decrease in financial sustainability by 0. 0920 units. The results also showed that linkages and partnerships significantly predict financial sustainability of the universities b_5 = (0.0421, $p < .05$), implying that an increase in linkages and partnerships by 1 unit is associated with an increase in financial sustainability by 0.0421 unit.

The fifth objective of the study sought to determine whether the relationship between resource mobilization strategies and financial sustainability of the selected universities was affected by the moderating effect of university's government grant. Methodologically, the first stage comprised of establishing the statistical significance of the relationship between resource mobilization strategies and financial sustainability, while the second stage introduced government grants as a moderator. The results of these tests were jointly summarized in Table 4.33:

Table 4.33: Model Fitness before and after Moderation Effect

Test Statistic	Before	After
F-statistic	179.160	199.220
Prob > F	0.000	0.003
R^2	0.832	0.882
Adj R^2	0.827	0.005
Root MSE	0.125	0.790

The result in Table 4.33 show that the F-statistic had p-value < 0.05, indicating that the model was fit for explaining the relationship between the variables. The value of R^2 before moderating effect was 0.832, an indication that 83.2% of variations in the dependent variable were caused by variations in the independent variables, while 6.8% were caused by other factors. After the moderating effect, the value of R^2 was 0.882, which was an indication that 88.2% of variations in the dependent variable (financial sustainability) was caused by variations in the independent, while 11.8% was caused by unexplained variations

After testing the model of fitness, the next part of the analysis focused on establishing both the strength of linear relationship between the variables using ordinary least squares regression, followed by stepwise regression in order to establish the moderating effects of government grants on the relationship between various resource mobilization strategies and financial sustainability of the selected institutions. The findings were summarised in Table 4.34.

Table 4.34: Regression Coefficients before and after the Moderating effect of Government Grants

Regression Coefficients before the Moderating effect

Financial sustainability	Coef.	Std. Err.	t	P>t	Significance
Fees collection Strategy	0.0449	0.1200	0.3700	0.7100	Not Significant
Donor fund Strategy	0.4430	0.1306	3.3900	0.0010	Statistically significant
Investment strategy	-0.0856	0.0946	-0.9100	0.3690	Not Significant
Consultancy strategy	0.2036	0.0937	2.1700	0.0330	Statistically significant
Linkages and partnerships Strategy	0.1682	0.0757	2.2200	0.0300	Statistically significant
_cons	0.2398	0.0675	3.5500	0.0010	Statistically significant

Regression Coefficients after the Moderating effect

Financial sustainability	Coef.	Std. Err.	t	P>t	Significance
Fees collection strategy	0.0362	0.0609	0.2125	0.5600	Not Significant
Donor fund strategy	0.0511	0.0154	0.2720	0.0110	Statistically significant
Investment strategy	-0.0671	0.0341	-0.7000	0.0570	Not Significant
Consultancy strategy	0.0920	0.0522	0.3122	0.0420	Statistically significant
Linkages and partnerships strategy	0.0421	0.0711	0.2411	0.0390	Statistically significant
Government Grant	4.3440	0.7700	7.9900	0.0000	Statistically significant
_cons	0.8113	0.448	1.2479	0.0000	Statistically significant

The findings summarised in Table 4.34 show the relationship between various strategies used in resource mobilization and financial sustainability before and after adding the interaction effect of government grants. Consequently, the first part of the Table shows the relationship between the variables before adding the moderating effect of government grant. From the first part of the findings, it can be observed that fees collection as one of the strategies used in resource mobilization had a positive regression coefficient ($b = 0.0449$, $p = 0.7100$), and by virtue of the p-value which was > 0.05 level of significance therefore indicating that this relationship was not statistically significant at 5% level. Despite the statistical insignificance, the positive coefficient suggests that an increase by one unit in the fees collection was associated with an increase in financial sustainability by 0.0449 units, this implies that an increase in fees collection strategy value by 100% was associated with an increase in financial sustainability by 4.49%.

From the findings, it can be observed that donor fund strategy had a statistically significant influence on financial sustainability of the selected universities. This was after a computation of the regression coefficient ($b = 0.4430$, $p = 0.001$), which implied that a unit increase in the value of the donor funding was associated with an increase in financial sustainability by 0.443 units. This can also be viewed as an increase in donor

funding strategy by 100% was associated with an increase in financial sustainability by 44.3%. Furthermore, it was established from the findings that investment strategy had a statistically significant influence on financial sustainability with computed regression coefficient of ($b = -0.0856$, $p = 0.00$), and this was an indication that an increment in investment strategy by 100% was associated with an increment in financial sustainability by 8.56%. The study findings also established that consultancy strategy had a positive relationship with financial sustainability having had a regression coefficient of ($b = 0.2036$, $p = 0.330$), which implied that a unit increase in the value of the consultancy as a resource mobilization strategy was associated with an increase in financial sustainability by 0.2036 units, even though the relationship was not statistically significant at 5% level. The findings summarised in Table 4.34 also indicated that linkages and partnerships strategy had a statistically significant influence on financial sustainability with a regression coefficient of ($b = 0.1682$, $p = 0.030$), it was therefore a clear indication that a unit increase in the value of linkages and partnerships by a unit was associated with an increase in financial sustainability by 0.1682 units and this relationship was statistically significant at 5% level.

After adding the moderating effect of government grants, it was established that fees collection strategy had a positive statistically significant effect on financial sustainability with the regression coefficient ($b = 0.0362$, $p = 0.021$), implying that an increment in fees collection by one unit was associated with an increase in financial sustainability by 0.0362 units, furthermore this relationship was statistically significant at 5% level. This also implies that an increase in fees collection by 100% was associated with an increment in financial sustainability of the selected universities by 3.62%. In comparison with the other findings, it was established that the statistical significance of the relationship between fees collection and financial sustainability had not changed before and after moderating effect of government grants. Furthermore, the findings summarised in Table 4.34 also show that the regression coefficient for donor funding strategy ($b = 0.0511$, $p = 0.011$), which was statistically significant at 5% level and also indicating that a unit increase in donor fund associated with an increase in financial sustainability

of the Universities by 0.0511units or similarly an increase in donor fund by 100% was associated with an increase in financial sustainability by 5.11%.

The findings also show that the investment strategy yielded a regression coefficient of (b = - 0.0671, p = 0.0370), indicating that a unit increment in the investment strategy was associated with 0.0671-unit decrease in financial sustainability, or a 100% increment in investment strategy was associated with 6.71% decline in financial sustainability of the selected universities. This relationship was also statistically significant at 5% level. The findings regarding consultancy as one of the resource mobilization strategies in the universities yielded a regression coefficient (b = 0.0920, p = 0.0420), indicating that an increment in the consultancy strategy by 100% was associated with an increase in financial sustainability by 9.2%, moreover this relationship was statistically not significant at the 5% level. The findings after moderation effect for linkages and partnerships established that the regression coefficient was (b = 0.0421, p = 0.039), an indication that an increment in the value of the linkages and partnerships in the selected universities by 100% was associated with 4.2% increment in financial sustainability. Furthermore this relationship was statistically significant at 5% level. In addition to this, the moderating effect of the university's grants denoted by the moderating variable yielded a regression coefficient of (b = 4.3440, p = 0.000), implying that government grants had a statistically significant moderating effect on the relationship between the five resource mobilization strategies and financial sustainability of the selected Universities.

4.6.2 Multiple Linear Regression Analysis

The multiple linear regression analysis was carried out purposely so as to establish the joint effect of resource mobilization strategies on financial sustainability of the universities. This was in view of the limitation of simple linear regression model in analysing the combined effect of each of the predictor variables on the outcome variable. The multiple linear regression model was therefore useful in linking all the independent variables on the dependent variable of the study. The predictors of the regression model

were the five resource mobilization strategies—fees collection strategy, donor funding strategy, investment strategy, consultancy strategy, and linkages and partnerships strategy.

Implementation of the multiple linear regression model was informed by the classical assumptions of linear regression in order to determine its suitability in the present study. The goodness of fit of the multiple linear regression model was ascertained through several diagnostic tests comprising normality, multicollinearity, multicollinearity, homoscedasticity and serial correlation tests. Section 4.5 above provides a summary of the findings of the diagnostic tests, all of which affirmed the suitability of the regression model in analysing the influence of financial resource mobilization strategies on financial sustainability the sampled institutions.

Subsequently, the first step was to tabulate the model summary and analysis of variance (ANOVA). Table 4.35 provides this summary, where the computed *F*-statistic had a *p*-value which was far < 0.05 indicating the goodness of fit of the model for the relationship between the five resource mobilization strategies and financial sustainability.

Table 4.35: Analysis of Variance Table

Source	SS	Df	MS	Number of obs = 64
				F (5, 65) = 179.16
Model	13.8935497	5	2.77870994	Prob > F = 0
Residual	1.00812616	59	0.015509633	$R^2 = 0.8323$
				Adj $R^2 = 0.8271$
Total	**14.9016759**	**64**	**0.212881084**	**Root MSE = 0.12454**

In addition, the computed regression coefficients were used to establish the strength of linear relationship between each of the independent variables and dependent. Moreover, the respective p-values were used to determine whether the coefficients was statistically significant at the 5% level. Table 4.36 provides a summary of the regression coefficients.

Table 4.36: Regression Coefficients Table

Financial Sustainability	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Fees Collection	0.0449	0.1200	0.3700	0.045	-0.1947	0.2845
Donor Funding	0.4430	0.1306	3.3900	0.0010	0.1821	0.7038
Investments Income	-0.0856	0.0946	-0.9100	0.000	-0.2746	0.1033
Consultancy Fund	0.2036	0.0937	2.1700	0.0330	0.0166	0.3907
Linkages and Partnership	0.1682	0.0757	2.2200	0.0300	0.0171	0.3193
Cons	0.2398	0.0675	3.5500	0.0010	0.1050	0.3747

Table 4.36 indicate that all the financial resource mobilization strategies— fees collection strategy, donor funding strategy, investment income strategy, consultancy strategy and linkages and partnerships significantly influenced financial sustainability of the selected universities. The hypothesis testing relating to the joint effects of the predictors as was stated as follows:

Null hypothesis: There was no statistically significant relationship between resource mobilization strategies and financial sustainability.

Alternative hypothesis: There was statistically significant relationship between resource mobilization strategies and financial sustainability.

The hypothesis testing therefore was expressed mathematically as follows:

$$H_0: \beta_5 = 0$$

$$H_1: \beta_5 \neq 0$$

Regression model for relationship between resource mobilization strategies and financial sustainability

The results of the multiple regression analysis therefore led to the following regression model.

Financial sustainability = 0.2398+ 0.0449 Fees Collection + 0.4430 Donor Funding −0.0856 Investments Income + 0.2036 Consultancy Fund +0.1682 Linkages and Partnership

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this section is to give a brief summary and conclusions of the study in line with the objectives. This is therefore important especially due to the fact that it gives a brief overview of some of the key aspects that are critical especially as relates to the resource mobilization strategies and their effect on financial sustainability of the selected universities

5.2 Summary of the Findings

The first objective of the study was to establish the effect of fees collection strategy on financial sustainability of the selected universities. From the descriptive analysis, one of the most agreed to finding was the fact that the period stipulated for the fees payment allowed the university to plan adequately for their financial needs which yielded highest arithmetic mean, followed closely by the fact that the amount of fees paid by different courses was commensurate with the cost of teaching. There is a positive relationship between fees collection strategy and financial sustainability of the universities. After analysis of the joint effects of the five resource mobilization strategies and how they are associated with financial sustainability, it was found out that the fees collection strategy did not yield statistically significant correlation coefficient and this was the case even for the panel data analysis of the secondary data which established that the relationship between fees collection strategy and financial sustainability was not found to be statistically significant. Summarily, the study findings on the fee collection strategy mostly aligned with the prior empirical findings outlining the significant role played by fee collection strategies towards achievement of financial sustainability of the institutions of higher learning.

The focus of the second objective was to determine whether donor funding strategy had effect on financial sustainability of the universities. The study findings from the descriptive analysis indicated that timeliness of donor funding disbursements was among the issues that were mostly agreed to with a mean, followed by the fact that universities had several scholarship projects that were run by donors. From the regression analysis, there was a positive relationship between the donor funding strategy and financial sustainability. Use of the multiple regression model in order to find the joint effect of the five resource mobilization strategies on financial sustainability revealed that donor funding strategy was statistically significant; and this was the case for panel data analysis for the secondary data where donor funding was found to have a regression coefficient which was statistically significant. In a nutshell, donor funding strategy remains a significant contributor to financial sustainability in institutions of higher learning; which largely agreed with the empirical studies outlining how donor funding strategy can contribute towards financial sustainability. Furthermore, the study findings validated theoretical standpoints such as Resource Mobilization Theory, Regression Discontinuity Theory of Education Interventions as well as Resource Dependence Theory all of which make a case for why donor funding is useful in the attainment of organisational outcomes such as financial sustainability.

The purpose of the third objective was to examine how various investment income strategies associated with financial sustainability of the selected universities. Descriptive analysis established that investments by universities in commercial services such as health facilities had the highest arithmetic mean, followed by investment in treasury bills so as to improve financial sustainability. From the results of the regression analysis, it was established that an increment in investment income strategy was associated with an increase in financial sustainability of the universities. A multiple regression analysis of the resource mobilization strategies on financial sustainability revealed that investment strategy did not exhibit statistically significant regression coefficient. However, panel data analysis for secondary data yielded a statistically significant regression coefficient. The study findings on investment income strategy were largely in agreement with prior

studies citing the role of investment income strategy as an important aspect to improve financial sustainability of organizations.

The fourth objective of the study sought to establish whether consultancy as a resource mobilization strategy is associated with financial sustainability of universities. A descriptive analysis, revealed that most universities engage in consultancy to run projects, and this was strongly agreed to by the respondents which yielded the highest mean, followed by the fact that the specialized experts normally engage in various consultancy activities that raise revenue for the university. As to whether consultancy strategy was influential on financial sustainability, majority of the respondents agreed that the university-wide consultancy was influential on finances collected. From the results of the simple linear regression analysis, it was established that consultancy strategy significantly influenced financial sustainability, implying that an increase in consultancy services was associated with an increase in financial sustainability of the selected universities. A multiple regression analysis to establish the joint effect of the five resource mobilization strategies on financial sustainability revealed that the regression coefficient for consultancy strategy was statistically significant; and this was also the case for panel data analysis where the regression coefficient was found to be statistically significant. The role of consultancy resource mobilization strategy was reaffirmed in the findings of the present study, which echoes the findings of prior empirical studies on role of consultancy strategy in increasing financial viability of organizations.

The fifth objective was to establish whether linkages and partnerships had significance influence on financial sustainability of the selected universities. A descriptive analysis revealed that universities had entered into public partnership private partnerships with highest mean, followed by strategic alliances with various stakeholders. As to whether the various linkages and partnership strategies had significance influence on financial sustainability, it was established that public-private partnerships had the highest mean score followed by academic exchange programmes. The findings of the simple linear regression analysis indicated that this aspect of resource mobilization exhibited

statistically significant relationship with financial sustainability of the selected organisations, signifying that an improvement in linkages and partnerships was associated with an improvement in financial sustainability. A multiple regression analysis on the same revealed that linkages and partnerships had a statistically significant regression coefficient, and this was the same for panel data analysis of secondary data, whose findings indicated that linkages and partnerships yielded statistically significant regression coefficient. Based on the study findings, linkages and partnerships play a key role towards achievement of financial sustainability of the selected institutions of higher learning, a finding which is in tandem with prior empirical findings outlining the significance of both linkages and partnerships in improving financial sustainability in the context of institutions of higher learning.

The sixth objective of the study focused on establishing whether university annual budget as a moderating variable had a statistically significant effect on the relationship between the various resource mobilization strategies and financial sustainability of the selected universities in Kenya. From the findings, it was established that the annual budget had a statistically significant moderating effect on the relationship between resource mobilization strategies and financial sustainability. The finding reaffirmed previous study findings how crucial annual budgetary allocations of grants by the government in moderating the resource mobilization strategies, and how these influence financial sustainability within the context of institution of higher learning.

5.3 Conclusion

The fee collection strategy has positive and significant effect on financial sustainability of most universities. The period stipulated for the fees payment allow most universities to plan adequately for their financial needs which yielded arithmetic mean. The amount of fees paid by different courses in universities is commensurate with the cost of teaching. Donor funding strategy has an influence on financial sustainability of the universities. The timeliness of donor funding disbursements is a key element of donor funding that influences financial sustainability of the universities. Most universities have

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several scholarship projects run by donors. The various investment income strategies have an influence on financial sustainability of universities. Investments by most universities in commercial services such as health facilities have an influence on their financial sustainability. Investment in treasury bills aims at improving financial sustainability. The study findings therefore provide a good basis for shaping policy direction towards tapping into the potential presented in both fee collection strategies, donor funding and investments as a way of augmenting financial sustainability of the selected institutions of higher learning.

Consultancy as a resource mobilization strategy can lead to an increase in financial sustainability of universities. Most universities engage in consultancy to run projects so as to enhance their financial sustainability, this is in the line of Sá (2015) who showed that universities in Africa barely venture into consultancy. Majority of the universities also have specialized experts who normally engage in various consultancy activities that raise revenues for them. Linkages and partnerships have significant effect on financial sustainability of universities. Most universities have entered into public-private partnerships. Strategic alliances with various stakeholders have an influence on sustainability of universities. Research should focus on areas that have direct impact on society with a view of enhancing financial sustainability. Moreover, the study findings showed that annual budget allocated to the universities by the government has a statistically significant moderating effect on the relationship between various resource mobilization strategies and financial sustainability of these institutions. In summary, consultancies are at the core of universities realisation of implementing sustainability. Based on the findings of the present study it can be concluded that, there is a need for concerted efforts by the stakeholders in the higher education sector to leverage on the potential presented in the consultancies in order to raise the financial viability of their respective institutions

5.4 Recommendations

Efforts need to be made by stakeholders in the universities in order to ensure optimum fees collection to guarantee financial sustainability of these institutions. This policy direction is in tandem with the findings of the study having established a significant influence of fee collection strategy on improvement of financial sustainability of the selected universities. In this regard, efforts towards implementation of fee collection strategy need to backed by fees collection policy that stipulates timelines for student's payment of fees.

The government in line with economic growth should consider increasing university fee gradually. The management of all universities in Kenyan should improve on their fee collection strategies by clearly stipulating periods of fee payment and balance the amount of fee with the costs of tuition. The management of universities should also establish a debt collection department to ensure that outstanding fee is collected within the prescribed period. This would significantly impact on financial sustainability of universities.

It is strongly recommended that universities put in place mechanisms of ensuring that they have identified a team of researchers who can develop fundable proposals to secure sufficient donor funding in an effort to enhance financial sustainability. Universities can establish resource mobilization units or directorates to continuously analyse the financial market with a view to investing surplus funds to the most profitable financial securities as well as diversifying sources of revenue for financial sustainability. Universities are the backbone of knowledge. This gives them a competitive advantage on matters consultancy. It is therefore important that they make use of consultancy as a strategic source of income to enhance financial sustainability.

The universities need to establish a consortium of researchers through partnerships and linkages to benefit from their various expertise and innovations that will lead to intellectual properties for financial sustainability. Universities should use their expertise

to produce goods and services for market consumption as a way of generating funds for their sustainability.

Universities in Kenya should improve on their donor funding strategies as this would significantly result into improvement in financial sustainability of their respective institutions. All universities in Kenya need to diversify the income generating activities by pitching proposals on diverse scientific research areas to attract donor funds. This would make them to be more financially sustainable.

Universities should adopt resource mobilization strategies that are based on their specific expertise and opportunities afforded in their localities. Partnerships and linkages should be strengthened between universities and county governments within which the universities are established. Investment strategies should be separated from academic activities to fully focus on enhancing financial sustainability.

The differentiated cost model of funding should be implemented taking into account the capacity of universities to generate additional funds that can supplement the government capitation.

Having observed a statistically significant effect of government grants on the relationship between resource mobilization strategies and financial sustainability of the universities, it is therefore strongly encouraged that the government should put in place all the necessary measures to facilitate adequate and timely disbursement of funds to the universities in consideration of the number of students, infrastructural needs, locality and level of establishment in order to guarantee a sustainable financial situation of these Institutions.

5.5 Suggestions for Further Studies

A similar study should be conducted on other institutions other than universities in order to examine how the five strategies influence financial sustainability. A comparative study can be conducted to utilize t tests to compare the average financial sustainability

of public vs. private sector institutions. A different study needs to be conducted to utilize different methodological approaches especially the research design, philosophical leaning and the target population and examine how various resource mobilization strategies influence financial sustainability of any given institutions.

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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 Finance Officers in universities Kenya.

Kindly fill out all parts of this questionnaire. I trust that you will give me candid answers. I guarantee you that all the information provided will be treated with utmost confidentiality.

Thank you.

PART I: Background Information

1) Kindly indicate the name of your Institution. (Optional)…………… …………….
2) How old is the university?

Age	Tick √ as Appropriate
Less than 5years old	
Between 6 to 10 years	
Between 11-15 years	
More than 16 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? …………………………

6) Indicate the extent to which your University relies on the following methods of financial resource mobilization to finance its operations (Tick√ as appropriate)

Income Source	Least Extent	Small Extent	Moderate Extent	Large Extent	Largest Extent
Government grants	12	12	15	10	5
Tuition fees					
Donor funds					
Investments and enterprise					
Consultancy services					
Linkages and partnerships					
Other (please specify)					

7) Indicate the trends in the sources of revenue for the university over the past five years using a scale of generally decreasing at a high rate (1) to generally increasing at a high rate (5). Kindly tick (√) as appropriate

Income Source	Generally Decreasing at an Increasing Rate	Generally Decreasing at an Decreasing Rate	Generally Stable over time	Generally Increasing at an Decreasing Rate	Generally Increasing at an Increasing Rate
Government grants	12	12	15	10	5
Tuition fees					
Donor funds					
Investments and enterprise					
Consultancy services					
Linkages and partnerships					
Other (please specify)					

PART II: FEES COLLECTION STRATEGY

8) Indicate the extent to which your University relies on the following methods of fees collection from students (Tick√ as appropriate)

	Not Reliant on at all	Very small extent	Moderate Extent	High Extent	Fully Reliant on this
Cash					
Bank Pay slips					
Cheques					
Mobile Money and Banking					
Other, Specify					

9) Below are several statements on fee collection in universities in the Kenya. Kindly indicate the extent to which you agree with the statement with respect to your University (Tick √ as appropriate)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The university always collects the student fees within the time stipulated in the fee collection policy					
The University is very comfortable with the methods that have been stipulated for collection of fees from students					
The university always carries out due cost analysis to ensure that the fees arrived at for various courses is sufficient to run them					
The amount of fees paid by different courses is commensurate to the costs of teaching it					
The amounts charged on different programmes are adequate to sustain University operations					

We always do not allow any student who has not paid fees as per the stipulated time to proceed with the studies					
We always recommend that students unable to pay fees during stipulated time take academic leave					
We rarely provide any form of fee waiver even to students who are extremely needy					

SECTION C: DONOR FUND STRATEGY

10) Below are several statements relating to donor fund mobilization strategy, kindly indicate the extent to which the different donor funds mobilization strategies apply in your University. Use a scale of 1-5 where 1= No extent, 2= little extent, 3 = Moderate extent, 4= Great extent, and 5 = very great extent.

Statement	1	2	3	4	5
The University has access to grants to run its operations					
The University gets donations to finance its operations					
The University has a number of projects financed by donors					
The University has several scholarship projects run by donors					
The donors avail adequate resources to operate the different projects they have partnered					
The donors remit their contributions on a timely basis					
The donor avails adequate finances for the various scholarship programmes they support					

11) Indicate the extent to which your University relies on the following methods of fund mobilization as compositions of donor funds (Tick√ as appropriate)

Income Source	Least Extent	Small Extent	Moderate Extent	Large Extent	Largest Extent
Research grants					
Project grants					
Academic Scholarships					

SECTION D: INVESTMENTS INCOME STRATEGY

12) Universities set up different Investments income mobilization strategies to ensure their financial sustainability. Kindly indicate the extent to which you agree with each of these statements in as far as your institution is concerned.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Our University is increasingly generating income from real estate					
Our University is increasingly generating income from commercial services like health facilities, farming and the like for revenue generation					
Our University is increasingly generating dividend income from equity securities and shares in organizations like SACCOs					
Our University is increasingly generating income from long term debt securities like bonds, debentures and the like					
Our University is increasingly generating income from fixed deposits and similar bank deposits					
Our University is increasingly generating income from short term debt securities like Treasury Bills, commercial paper, promissory notes and the like					
Our University is increasingly					

generating income from catering services and other hospitality services					

13) Indicate the extent to which your University relies on the following methods of fund mobilization as compositions of investment income funds (Tick√ as appropriate)

Income Source	Least Extent	Small Extent	Moderate Extent	Large Extent	Highest Extent
Real Estate					
Equity Securities					
Debt Securities and the like					
Others (specify)					

SECTION E: CONSULTANCY FUND STRATEGY

14) Universities set up different consultancy fund mobilization strategies to ensure their financial sustainability. Kindly indicate the extent to which you agree with each of these statements in as far as your institution is concerned.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Our University is increasingly engaging in several consultancy services to improve revenues to run its projects					
The University is increasingly developing specialist experts in different fields in different faculties for consultancy purposes					
The university is increasingly generating consultancy income from specialized experts that engage in various consultancy activities					

15) Indicate the extent to which your University relies on the following methods of fund mobilization as compositions of consultancy income funds (Tick√ as appropriate)

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Income Source	Least Extent	Small Extent	Moderate Extent	Large Extent	Highest Extent
Individual (Expert's) Consultancy					
Departmental Consultancy					
University Wide Consultancy					

SECTION F: LINKAGES AND PARTNERSHIP STRATEGY

16) Universities set up different linkages and partnership resource mobilization strategies to ensure their financial sustainability. Kindly indicate the extent to which you agree with each of these statements in as far as your institution is concerned.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The University is increasingly entering into strategic alliances with various stakeholders					
The University is increasingly entering into public private partnerships					
Our University has well stipulated partnership and Linkages policies					

17) Indicate the extent to which your University relies on the following methods of fund mobilization as compositions of linkages and partnerships income funds (Tick√ as appropriate)

Income Source	Least Extent	Small Extent	Moderate Extent	Large Extent	Highest Extent
Public Private Partnerships					
Academic Exchange Programs					
Academic Trainings					

Appendix II: Secondary Data Collection Sheet

Period / Year	Financial Sustainability				
	Total assets	Total Liabilities	Current Asses	Current Liabilities	Government Grants
2014					
2015					
2016					
2017					
2018					