FINANCING OPTIONS AND LIQUIDITY OF PUBLIC UNIVERSITIES IN KENYA

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DECLARATION

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

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DEDICATION

This thesis is dedicated to the memory of my beloved mother, Margaret Wanjira Mbugua and sister, Esther Wangu Mbugua, whose love, guidance, and unwavering support have shaped me into the person I am today. Though you are no longer physically with us, your presence inspires every step of my journey.

To my mother, whose strength and compassion were the pillars of our family, your wisdom and kindness have left an indelible mark on our hearts. You taught me the value of hard work, perseverance, and unconditional love, lessons I carry daily. Your joy in us progressing with our study has always been the motivation behind the completion of this master's and hope for more educational milestones.

To my sister, whose light and laughter brightened every room, your spirit lives on in the memories we shared and our bond. You showed me the power of resilience and hard work and the importance of cherishing the little moments in life.

I carry both of you with me, and this work is as much yours as it is mine. Your love will forever be my guiding light.

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OPERATIONAL DEFINITION OF TERMS

Capitation: The amount of money the government gives to schools or universities for every student they enroll in.

Donor Funding: Funds from well-wishers and other charitable organisations are advanced to help an institution achieve its objectives.

Financing Options: Various sources of income are available to a firm to gather finances for its day-to-day operations.

Financial Performance: This is the measure of how well an organisation can use available assets to generate revenues or a measure of overall financial health over a given period

Government Policy: A course of action enacted by the government to guide decisions or how things should be done.

Income Generating Activities: It's a set of projects that institutions undertake to enable them to create extra sources of income.

Liquidity: An entity's ability to meet short-term obligations. It is also easy to convert an asset into cash.

Public Universities: These are state-owned institutions that receive significant public funds through the national government.

Tuition Fees: This is a payment made to an institution by students attending that institution for learning.

ABBREVIATION AND ACRONYMS

COGR	Council on Government Relations
CUE	Commission on University Education
DUC	Differentiated Unit Cost
ECU	Edith Cowan University
GDP	Gross Domestic Product
GST	General Systems Theory
IGAs	Income Generating Activities
IMF	International Monetary Fund
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KUCCPS	Kenya Universities and Colleges Central Placement Service
NACOSTI	National Commission for Science, Technology, and Innovation
OAG	Office of the Auditor General
RDT	Resource Dependency Theory
STATA	Statistical Analysis Software
UK	United Kingdom
US	United States
UWA	The University of Western Australia
VIF	Variance Inflation Factor

ABSTRACT

Financial challenges being faced by public universities is a worldwide problem. Recent studies have shown how public universities cannot meet their liabilities when due. This has led to many universities facing insolvency due to many liabilities and fewer assets to cover them. The study on liquidity is key to understanding how well our universities are equipped to perform better. Financing options available to public universities are a key concern to stakeholders eager to solve the financial difficulties faced by public universities. The study had a general objective, which was to assess the effects of financing options on the liquidity of public universities in Kenya. The study specific objectives were to: examine the effect of government capitation on the liquidity of public universities in Kenya, examine the effect of income-generating activities on liquidity of public universities in Kenya, examine the effect of tuition and other fees on liquidity of public universities in Kenya, examine the effect of donor funding on liquidity of public universities in Kenya and to establish the moderating effect of government policy on liquidity of public universities in Kenya. This study was concerned with the effects of financing options available to public universities on their liquidity. The study was advised by four theories: Agency theory, Resource dependency theory, Keynesian economics theory, and General systems theory. The study used a positivist philosophy. The study used a Causal research design. The study's population consisted of 31 Chartered public universities in Kenya, and it covered a period of five years, from 2015/2016 to 2019/2020. A census of all public universities was undertaken due to the small population size. The data was analysed using descriptive analysis that included calculation of means and standard deviation, and inferential analysis using a panel data regression model. The study used both primary and secondary data, which were quantitative in nature and collected from the financial Managers of all Public Universities and the Office of the Auditor-General. The study carried out diagnostic tests to better understand the relationships between the variables. The study obtained permits for research from the National Commission for Science, Technology and Innovation (NACOSTI) and ensured that all data collected was only used for the study. The study unveils intricate insights into university liquidity. Government capitation, tuition fees, income-generating activities and donor funds exhibit weak correlations with liquidity, meaning that they do not statistically influence liquidity levels in public universities in Kenya. The study unveils the importance of the government regulatory role as it has proved to have an influence on the liquidity of public universities. These findings underscore the financial complexities within universities, highlighting the necessity for strategic financial planning and resource allocation to ensure stability and resilience amidst shifting regulatory and economic landscapes. The study recommends that universities establish robust cash management practices, improve financial planning and budgeting, develop strong donor relationships, and prioritise the optimisation of income generation strategies to address the significant inverse relationship with liquidity. Policymakers are urged to review funding allocation policies, advocate for enhanced transparency in managing donor funds, and establish financial resilience policies for public universities while promoting collaborative funding initiatives.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally, public or state-owned universities have all faced one problem: financial difficulties. When any institution struggles to meet its obligations to its creditors, suppliers, or employees, we may categorise it as facing financial difficulties (Carlos & Lorenzo, 2009). Prolonged financial difficulties may lead to corporate bankruptcy, which causes substantial losses to the organisation and society. The financial performance of any institution is greatly determined by the financing options available to it. Therefore, financial managers in institutions are mandated to ensure that financing options available to the institutions bring enough finances. Stakeholders in our institutions all have an incentive to take corrective action to prevent failure (Carlos & Lorenzo, 2009).

The liquidity levels of those universities were calculated based on an observation of the financial state of several state universities in Australia. Liquidity is the ease with which an entity can meet short-term obligations. The study concluded that two universities were rated as low risk, one was rated as medium risk, and one as being high risk. An institution with a liquidity ratio of 2 is considered stable, a ratio below 2 but above 1 is considered low risk, and those below 0.75 are considered high risk. The study found that Australian universities were not that bad off financially, but more needs to be done for them to meet their obligations as and when they become due. A summary of the liquidity levels of the universities over time is represented below to show their trend.

Table 1.1: Liquidity Ratio for Australian Universities

Liquidity (current ratio)	2015	2016	2017	2018	2019
Curtin university	1.3	1.2	1.3	1.3	1.0
Edith Cowan University	1.7	1.7	1.7	1.4	1.3
Murdoch university	1.9	1.9	1.7	1.6	1.1
The university of western Australia	1.0	0.7	0.6	0.6	0.7

Source: OAG (2019).

A study by Oslang (1997) on the state of the University of Washington found that the university received a huge sum of its revenue from the state and used the same without having meaningful reserves, since more was expected to be received from the state. When the state budget and expenditure were reduced, the University of Washington and all other state universities received budget reductions. Without any reserves or other sources of revenue, this state university faced financial difficulties and was unable to meet its obligations as they were due. They had to undergo internal budget cuts to stay afloat and at the same time maintain their quality of education and research programs. Actions taken included freezing all hiring and purchases, eliminating some academic programs, and laying off staff in an effort to reduce expenses.

A study by Altundemir (2012) on the aftermath of the financial crisis on American state universities showed how the United States experienced the great depression in its economy. This crisis caused a significant decline in state revenues, which funded state universities in the country. State universities were faced with sizable budget gaps that needed to be averted. Measures were undertaken to resolve the decline, which included laying off staff, furloughs, position eliminations, greater teaching workload, and the closure of some departments. Hiking of tuition fees was also considered, as students were to pay more for more crowded classrooms and fewer services.

A report by the American Academy of Arts & Sciences (2015), on the status of Public Research Universities in the United States, showed that there was a 26 per cent decline in government support to universities per full-time student between the years 2008 and 2013, in the median public research university. The continued decrease in state appropriations forced these universities to hike tuition fees for students to continue offering services. Public research universities have increasingly less funding from the state and are expected to serve more Americans. This has caused their performance to decline. According to Whitford (2020), the continuous reduction of state funding for universities has led to universities increasingly relying on revenue from tuition fees to keep afloat. This means students end up on the receiving end as more is demanded regarding hiked fees to cater for the deficit. Figure 1 below shows clearly the trends of financing options available to public research universities and how they have changed over time.

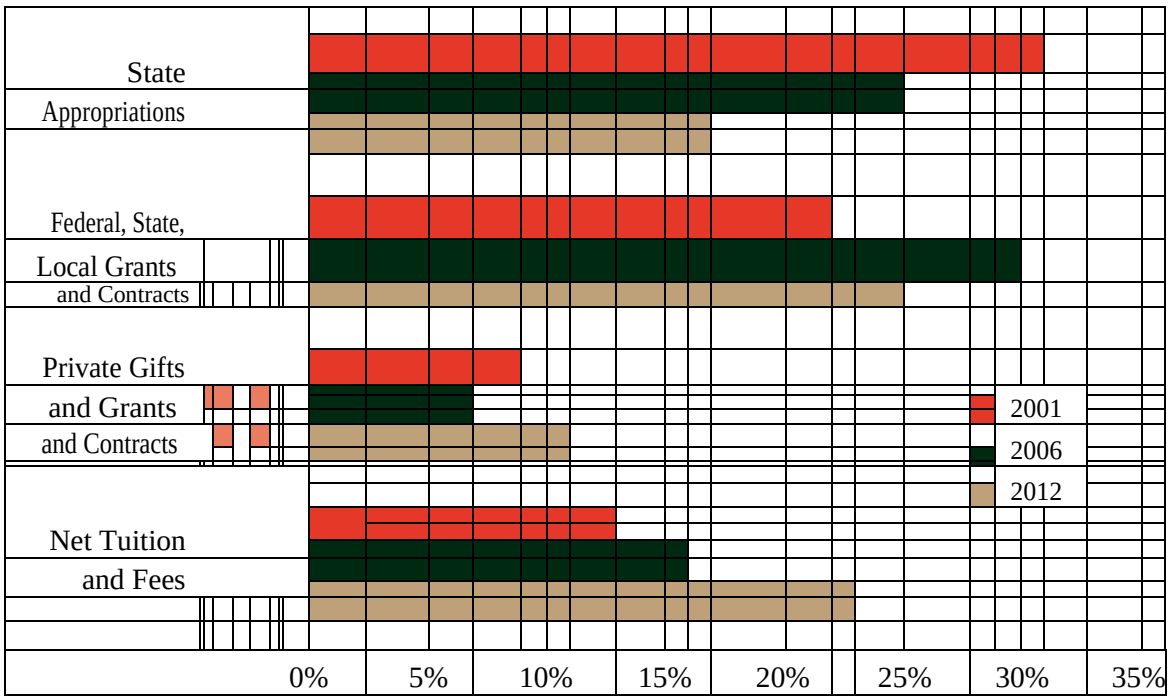

Figure 1 Revenue Sources of Public Research Universities,2001, 2006, and 2012 (Source: COGR Costing Committee, "Finances of Research Universities, June 2014).

A report by the European Union (2019) studied the financing options available to the UK state universities and how these have changed over time. The study found that universities received a huge sum of their funding from state grants for a long time. This has resulted in a mixed financial performance for this university since the funding has not been reliable over the years. According to a study by Marginson (2018), reforms of the university funding model in 2012 saw the government increase student fees and reduce the amount granted to universities by the state. This made universities' funding not rely on state grants but more on tuition fees collected from enrolled students. This move brought some sanity to the performance of these universities. Table 1.2 below indicates financing sources of UK universities and how they relate to the total income over time.

Table 1.2 Financing of United Kingdom Universities

Financing Options	1993-94%	2003-04%	2008-09%	2013-14%	2016/17%
Tuition fees, education grants and contract	29.6	24.2	28.7	44.5	49.7
Funding body grants- direct subsidies from HEIS	37.0	38.6	34.8	19.8	14.3
Research grants and contracts	14.4	16.1	16.4	16.5	16.6
Endowments and investment income	2.2	1.4	1.4	1.1	1.6
Other Incomes	16.8	19.6	18.7	18.1	0.7
Total	100.0	100.0	100.0	100.0	100

Source: HESA (2018).

According to Mgaiwa (2018), in his study on the conundrum of financing higher education in Tanzania and its impact on the quality of education, Mgaiwa concluded that universities in Tanzania significantly rely on government funding. The universities received 20-30 per cent of their annual finances from the government. He found that throughout the 6 years, universities in Tanzania experienced a higher enrolment of students. They experienced declining funding from the government at the same time. The decreased funding affected the quality of services

and the universities' normal functionality. To offset the deficit, the research suggested that universities devise mechanisms to properly utilise the funds provided as a cost-cutting strategy. The government was also to allow universities to function as business institutions to raise enough finances for better operations. Universities were also advised to introduce income generation strategies to diversify income through alumni contributions, grants, partnerships with other corporate organisations and contracts.

In a report by the Auditor General (2019), she described the state of public universities in Kenya, giving Kenyatta University as an example. She stated that the university is technically insolvent. She pointed out that as of June 2020, Kenyatta University had current liabilities of Ksh. 6.38 billion as compared to the current assets of Ksh. 1.58 billion. This meant that the university operated under a deficit of Ksh4.8 billion. This meant that the university was technically insolvent. This is an example: the rest of the public universities are in worse conditions than Kenyatta University.

Funding from the government depends so much on government levy collection (Kossey & Ishengoma, 2017; Nitume, 2011); therefore, non-performing economic conditions may affect the budgetary allocations to universities. Therefore, government funding is unreliable, and universities must devise different ways to fund their activities to run well. In Kenya, several studies have been carried out on funding for state universities. A report by CUE (2016) found that the total funding of universities relied on 48 per cent on government capitation, 42 per cent on tuition fees, and 10 per cent on other sources of income.

The report raised the issue of declining government funding, which forced universities to receive fewer funds for their operations. A decreased enrollment of university students also contributed to a decline in the amount received from tuition fees. Universities are encouraged

to expand their sources of income to minimise their reliance on government capitation for their normal operations.

The persistence of financial difficulties experienced by state universities will stunt the growth of the university sector in the country (CUE, 2016). Poor service delivery will be witnessed as universities overstretch the limited resources available to support the growing number of students. Therefore, universities and involved stakeholders need to come up with ways to address the growing poor financial performance experienced to avoid further degeneration.

Arora et al. (2002) state that three factors are major causes of poor financial performance in universities. The first is enrolment pressure, due to the university's inadequate capacity to satisfy the increasing demand. Second, there is a faster rise in university unit costs than in the national economy. Finally, it has less of a public revenue function. This is caused by competing needs from other public services, causing less to be allocated to universities. Therefore, universities need to explore more avenues available to them for funding and stop over-relying on government capitation for everything.

Public university funding has been under discussion for a considerable amount of time. The following are the alternative ways of financing public universities in the developing world, according to Marginson (2018), who proposed that universities should be financed through investment income, research grants, tuition fees, funding body grants, contracts, and other incomes. This makes up the total sources of finance for public universities. According to CUE (2018), public universities' income streams included government capitation, Student fees, Donor Funding, and other investment incomes. These variables formed the basis of our study as they are the financing options available to our public universities in Kenya.

1.1.1 Government Capitation

According to Ngowi and Flora (2015), the Capitation grant is one of the models for educational finance used in some nine countries in allocating financial resources to public schools. They are given to institutions based on the total registered students. The more the institution enrols students from the government-sponsored program, the higher the funding these universities receive. Capitation grant funds essential teaching and learning resources. Government capitation was introduced to help students access education where they couldn't due to financial resources. In our public universities, government capitation is the major source of financing for their operations, in the form of development and capitation grants. Development grants are mainly used for infrastructural improvements, while Capitation grants support non-wage university inputs.

The government previously funded each academic program with a flat rate of US$1,200 per annum for each student enrolled. Larger and older universities like Kenyatta University and the University of Nairobi supported this system. According to Nganga (2020), the method favoured larger universities, while smaller universities struggled because they enrolled fewer students than larger universities.

Around 2017, the government adopted the 'Differentiated Unit Cost' (DUC) model, where institutions were funded based on students enrolled and courses offered (Nganga, 2020). Although this model brought some balance in the funding of smaller universities, larger universities lost a huge sum of money in government capitation under this model. For universities to perform better, the government needs to develop a better financing model that caters to both large and small universities in Kenya.

Poor financial performance results from poor financing when an organisation's income exceeds

its expenses. Public universities receive, on average,48 per cent of their total revenues from government capitation (CUE, 2016). In recent years, state funding of public universities has declined in Kenya and other states. This is a major concern in many universities as they depend largely on government funding to fund their operations.

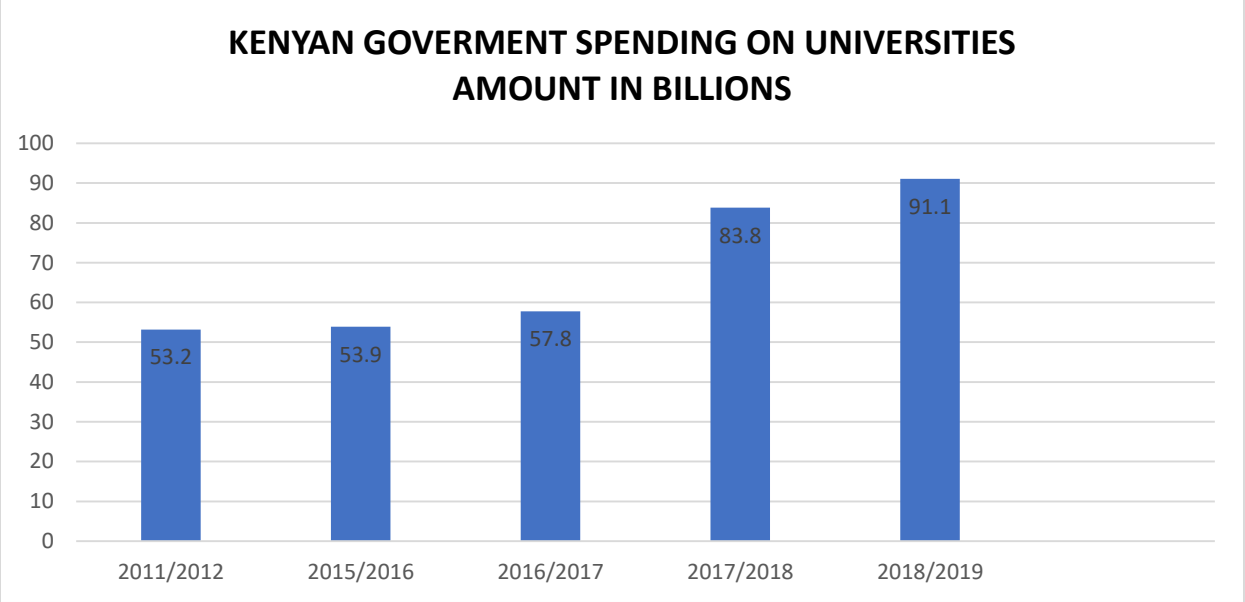

Figure 2 Government funding of public universities.

(Source: The National Treasury 2011-2018.)

The amounts may seem to increase over time, but remember that the number of students and chartered universities also increased tremendously over the same period. That meant that more universities had to share the small amount allocated by the government.

According to the World Bank (2010), the financial resources available to Public Universities from the government have declined across African countries. Therefore, universities must look for different funding options for their operations and not fully depend on the government as has been the norm.

1.1.2 Income Generating Activities

Income-generating activities involve other business ventures that universities engage in to raise extra finances. According to Kiamba (2005), this is necessary to avoid over-reliance of universities on government funding; therefore, engaging in resourceful activities to earn more income to finance their activities. This led to the introduction of productive ventures, such as hiring university facilities and consultancy services. These non-academic commercial units include restaurants, bakeries, guesthouses, farms, cyber-cafés, mortuaries and bookshops.

Research by Thuva and Muturi (2017) on the performance of IGAS in JKUAT found that the university formed its own company to raise extra income for the university. JKUAT Enterprises was formed as a limited company that JKUAT wholly owns. The notion behind this formation was to help commercialise its innovations. The enterprise comprises Consultancy, Products, ICT, and EDC divisions. There is also an administration division whose mandate is to operate all the income generation units. All these activities are carried out to enable the university to generate extra income for its operations.

Although applying these IGAs has produced some additional financing for institutions, it has still not produced enough resources to cater to the rising deficit universities experience every financial year.

1.1.3 Donor Funding

Ouma (2007) studied reducing resource dependence by state universities in Kenya and South Africa on government support and discovered that both nations faced comparable issues with public university finance. Both countries applied different measures to resolve the funding crisis, one being donor funding. Donor funding was sorted after including donations from alumni and other willing players, like corporations. The study concluded that Kenya's public

universities had less success in generating income from donations, hence, not a reliable source of revenue for these institutions. Dependence on donor funding is less predictable, mostly because it all depends on the magnanimity of donors. It largely depends on finding new donors now and again because it's unhealthy to depend on one donor throughout.

Sandra (2020) conducted a study on donor-driven designs in universities. She found that in the United States, almost a third of university research grants are derived from donor funding, while in the United Kingdom, donor funding amounts to 15% of research grants in 2016. Due to the state's continued reduction of funding in universities, the universities are left relying on donor funding to cater for their operations. Most of these donor funds are used to cater for new campus architecture to be used by the university. Although universities need these donations, they must come up with teaching and research that have a social contribution towards society to make them competitive alongside other worthy causes and organisations that also need donor funding. They must have activities that go hand in hand with donors' interests because donors tend to donate more to noble causes and those they believe are worthwhile.

Universities need to finance their operations without relying on traditional methods, but look for other avenues to raise capital. The only way to avoid poor financial performance in any organisation is by having a better financing structure, which is greatly needed in our public universities in Kenya.

1.1.4 Tuition Fees

When university education was introduced in the country, it was tuition-free as the government funded all student expenses. However, between 1963 and 1972, the country's GDP growth rate dropped by 4%, which resulted in the government introducing the market mechanism to public universities (Ouma, 2012). They abolished tuition-free university education in 1988 and introduced cost-sharing in 1992, which meant that students had to pay tuition fees partly, while the government subsidised the rest.

Wangenge-Ouma (2008) observed significant student subsidies and lower recovery costs under the new arrangement. Students who the Joint Admissions Board accepted were required to pay Kshs 16,000 in state-mandated fees and received substantial government subsidies. This meant that, compared to their sister institutions in private universities where tuition fees are competitive, public universities had to admit students as placed by the government with their subsidised tuition fees, and this saw many of these institutions experiencing financial hardship. Since the flat rate was established back in 1992, it has not been revised, bearing in mind the inflation rates and other market factors that have led to a tougher economy from then to now.

Universities have been exploring ways to diversify their revenue streams, including research and consulting, in response to the ongoing decrease in government funding. However, in the end, many colleges decided to launch the Module II program (Ouma, 2012). Module II program meant that universities admitted fully paying students alongside those subsidised by the government. These programs were welcomed by society as it meant that the huge demand for higher education was now resolved by admitting more students as fully sponsored. The program generated more income for universities as more and more students were admitted.

Universities had hoped that the then-increasing number of Module II (self-sponsored) students would bridge the gap in the financing of universities. However, three years ago, the government reduced the state-funded students' university entrance grade from a B to a C+, which reduced the lucrative degree program (Nganga, 2020). This resulted in a decline in student numbers in the parallel program, the biggest revenue generator for the public institutions besides government subsidies, and an increase in state-funded students.

The move by the government saw universities admitting fewer students for the module II program, which used to collect huge sums of money in fees for these universities. These students were then admitted through the state-funded programs that did not generate enough money in fees compared to the Module II programs (Nganga,2020). This means that for universities to get more money from tuition fees, more students need to be enrolled in the Module II program, and more students need to be enrolled in the state-funded program.

1.1.5 Liquidity

Liquidity is how well an organisation can meet its short-term needs without difficulties (Mulwa, 2015). It is key for a firm since it can fail despite having positive financial performance. This research wants to find out how the liquidity of public universities is affected by government capitation, tuition fees, income-generating activities, and donor funding.

According to Kithinji (2010), liquidity is how well an organisation utilises its available resources to acquire more returns to its investors and manage its day-to-day operations. In the case of public universities, liquidity can be determined by how well they use available resources to meet their obligations and also offer better services to their investors in terms of service to students, staff, and the government.

Huselid (2010) asserts that there are different ways to measure the liquidity of an organisation

without affecting the organisation's normal operations. The current ratio describes the firm's ability to pay off short-term liabilities by utilising its current assets. For a firm to perform well, current assets should double the current liabilities. This means for every liability the organisation has, it has two assets covering that liability; therefore, it is always covered if and when it experiences financial shortages.

According to Rajab & Nyaundi (2018), the Auditor-General has repeatedly reported the insolvency of most Public Universities. According to Table 1.3 below, public universities have been operating at a deficit for a long period. This shows how they have been performing financially over time.

Table 1.3 Public Universities' Revenue Deficit

FINANCIAL YEAR	TOTAL INCOME '000'	TOTAL EXPENDITURE '000'	DEFICT '000'
2014-2016	226,430.27	230,107.02	(3,676.75)
2015/2016	279,617.98	281,487.54	(1,869.56)
2017/2018	85,700.00	88,900.00	(3,200.00)

Source: CUE (2014-2018).

Mukhwaya (2018) argues that all public universities in Kenya have no sound financial base. He alluded to the red zone, and older universities with expensive academic programs and a huge workforce are greatly affected. He highlights that universities are in too much debt, which may be caused by mismanagement.

Reports by CUE over time have indicated that universities have been operating with a deficit for several years. This includes a deficit of Ksh. 3.2 billion in the 2017/18 financial year, Ksh. 3.7 billion from the 2014-2016 financial year. This has led public universities in Kenya to accumulate debts to suppliers and non-remittance of statutory deductions. Over the years, the University of Nairobi has accumulated 1.4 billion shillings in debt, Kenyatta University a total of 3.4 billion shillings, and Multimedia University a total of 700 million shillings (Ouko, 2019).

All these debts by these top universities paint a picture of what's happening to all public universities in Kenya. According to a memorandum by vice-chancellors to members of parliament (2020), the amount of debt accumulated by public universities amounted to 37.3 billion shillings, most of which was owed to the Kenya Revenue Authority. This increased debt accumulation by universities painted a picture of how these universities were performing financially. Therefore, without a proper remedy to this ailing condition in our universities, they will continue to perform poorly financially, and this will, in turn, affect their key mandate of offering better services to students.

1.1.6 Regulatory Role of the Government of Kenya

Regulation is the management of a system using rules to be followed. According to the World Bank (2019), controls and limitations are imposed upon the regulated business. The government has a key function in financing and managing state institutions to achieve the best from these institutions. Through various branches of the government, the government can regulate the operations of public institutions. The University Funding Board is a government body mandated to advise the Cabinet Secretary on university education financing, formulate an equitable and transparent criterion for fund allocation to universities, and distribute funds to universities. This body is important in advising on how well universities can be financed to operate efficiently.

The Constitution of Kenya (2010) clearly outlines the roles of universities in managing them. The revision of the University Act in 2012 changed the way universities are governed.

The establishment of KUCCPS under the University Act in 2012 made it easy for all Kenyans to access higher education. These made it easier for universities to enrol students on their universities. The most important role of this government body is distributing qualified students

to all public universities for the different courses offered. When favourable conditions are set in place, making it easier and friendlier for students to enrol in university education, the number of students who enrol will increase, resulting in more university admissions.

1.1.7 Public Universities in Kenya

The University of Nairobi was the first public university in Kenya in 1970 after transferring from being a constituent institution of the University of East Africa, founded in 1956 (Mutula, 2002). Kenyatta Institution College was founded in 1970 as a constituent college of the University of Nairobi, while Moi University was the second public institution to be formed in 1984. To fulfil the growing demand for university education, Kenya's higher education system has expanded significantly since then (Bailey, Cloete, & Pillay, 2013). To meet this growing demand, additional institutions have been founded over time. As of 2019, Kenya had 31 state universities and 18 private institutions accredited by the Commission for University Education (CUE), which was founded under the Universities Act, No. 42 of 2012 (CUE, 2019). Most of these universities have established satellite campuses nationwide to reach more and more students in their area.

Initially, public universities used to be free as the country desired to have a highly trained workforce. Economic difficulties and alarming demand for tertiary education led to the government decreasing the budget for education from 37 per cent to about 30 per cent, stating it was impossible to allocate more funds to the sector (Kiamba, 2004). This was the beginning of the financial crisis in public universities. This has continued to be the case as more students continue to be enrolled in higher education each year. Student enrolment rose from 150,926 in the 2010/2011 academic year to 426,965 in the 2018/2019 academic year (KNBS, 2010-2019). Universities cannot cope with the rising figures without proper mechanisms, such as proper

funding.

While university expansion is appreciated, the quality of the education offered raises serious concerns. Universities need adequate learning resources, staff resources, and the right infrastructure to offer quality education to the increasing number of students. Our public universities in Kenya have continued to admit higher numbers of students without investing more in development, leading to poor learning conditions for our students.

Universities had to look for other funding sources because they could not absorb the growing number of students due to budget issues (Nganga, 2014; Nyangau, 2014). Public colleges implemented the "Module II" program, which mandated that students cover the entire cost of their education. According to recent studies, self-sponsored students increasingly predominate in Kenya's public universities (Sifuna, 2010). The method was effective until 2016, when the government imposed stringent measures to prevent exam cheating in the national Form Four examinations. This resulted in a notable decrease in pupils achieving the minimum grade needed to be enrolled in university. As a result, fewer students were enrolled in the "Module II" program, which impacted the financial health of numerous colleges that relied on this program to augment their academic offerings. Universities have also taken on a variety of revenue-generating activities, including the implementation of cost-recovery strategies and business endeavours such as retail centres, funeral homes, industrial parks, rental properties, and catering services (Nganga, 2014; Nyangau, 2014; Munene, 2016).

1.2 Statement of the Problem

A report by CUE (2019), on the income and expenditures of public universities in Kenya provided that universities are operating at a deficit and if the trend is not checked, then these universities will not be able to provide services as they are required.

The financial performance of public universities has been constrained by challenges about insufficient funding for their operations (Auditor General, 2017). According to the Auditor General's report, all public universities in Kenya are on red alert due to their financial problems. This is evidenced by huge debt accumulations regarding unremitted dues, unpaid suppliers, and occasionally delayed salary payments to staff members. Over the last couple of years, Kenyatta University, the University of Nairobi, and Multimedia University are just a few examples that have accumulated a total of Sh.4.6 billion in debts (Auditor General, 2019). These universities were therefore unable to cater for their financial needs as and when they fell due. This was the case with the other public universities in Kenya.

Financing options available to public universities seem not to generate enough revenue for their operations. A 2016 report by CUE indicated that public universities in Kenya were receiving insufficient funds from the government to fund their budgets. The government, being the main financier of university operations, was not providing enough, leading universities into a financial crisis (CUE, 2019). The reduction of Module II intakes in universities also reduced the amount of money universities received from this program. This has led to universities not living up to their expectations by providing poor quality services and stagnating growth as they cannot expand their resources, such as infrastructure and staffing, to support other activities. Without a proper financing strategy being developed by universities and less dependence on government capitation, universities will continue to perform poorly financially.

Studies by Ogot (2002) and Onyuma & Okumu (2015) only focused on the impact of income-generating activities as one of the sources of extra income to universities and their effect on their overall performance. Though effective, income-generating activities generate a small surplus, with universities' ever-rising budget deficits. The impact of Module II programs has

resulted in an increase in disposable income to universities, and their significance will become more significant when universities continue to implement them (Kiamba, 2004).

A study by Ouma (2007) emphasised the alternative methods universities apply to access more funds. The study focused on donor funding in universities and its effects on universities. The study concluded that donor funding is less predictable, mostly because it depends on donors' magnanimity; hence, one cannot fully depend on it. Ouma (2012), found out that due to decreased government funding to universities, the introduction of Module II programs helped universities to generate extra income. Still, this program was dealt a big blow when the government lowered the entry-level of universities from B to C+ hence reducing the number of students being enrolled to module II program resulting in decreased revenue.

A review of the previous literature and research shows a research and knowledge gap in the current literature regarding the financing options and liquidity of public universities in Kenya. The preceding literature is a manifestation that, although more effort by the state to provide better financing to public universities by having different financing models, the financial performance of these universities remains wanting (CUE, 2019) and remains in conclusive with different scholars having different conclusions in regards to public universities financing (Kamaan, 2014). This study is vital given the poor financial performance of Kenya's public universities. Thus, this study aims to look into the financial options and liquidity issues these organisations deal with.

1.3 Objectives of the Study

The study was explained by general and specific objectives indicated below.

1.3.1 General Objective

To assess the effects of financing options on the liquidity of public universities in Kenya.

1.3.2 Specific Objective

The specific objectives are;

i. To examine the effect of government capitation on the liquidity of public universities in Kenya.
ii. To examine the effect of income-generating activities on the liquidity of public universities in Kenya.
iii. To examine the effect of tuition fees on the liquidity of public universities in Kenya.
iv. To examine the effect of donor funding on the liquidity of public universities in Kenya.
v. To establish the moderating effect of government policy on the liquidity of public universities in Kenya.

1.4 Research Hypothesis

This study was based on the following five hypotheses.

H_{01}: Government capitation to public universities has no significant effect on their liquidity.

H_{02}: Income-generating activities have no significant effect on the liquidity of public universities in Kenya.

H_{03}: Tuition fees have no significant effect on the liquidity of public universities in Kenya.

H_{04}: Donor funding has no significant effect on the liquidity of public universities in Kenya.

H_{05}: Government policy has no significant moderating effect on the liquidity of public universities in Kenya.

1.5 Significance of the Study

Policymakers will be keen on such a study as it would enable them to understand the financing options available to universities and how they affect their liquidity. The study would also enable them to know which sources of finance universities are hugely dependent on to perform better financially.

The government, as the regulator of universities and one of the financiers of public universities, would benefit from the findings of this study, as it would inform them on the various forms of financing universities are engaging in to improve their liquidity levels. Deductions from this study would help the state enact policies that enable universities to engage in more activities that can generate more income for them to operate well.

The study findings would be important to scholars and researchers, as they will serve as a foundation for more research. Academicians would use this study to inform discussions on financing options available to public universities. This study would also serve as a reference source for future researchers.

1.6 Scope of the Study

This study focused on all 31 public universities in Kenya. Its main focus was on the liquidity of public universities for a five-year period from 2015/2016 to 2019/2020 by looking at their audited financial statements. The study mainly focused on Government capitation, tuition fees, income-generating activities, and donor funding to help analyse the liquidity levels of public universities in Kenya.

1.7 Limitation of the Study

The limited literature on the study area limited the study. The study also relied on secondary data, which are audited financial reports of public universities. We assume that these financial

reports portray the true value of the financial positions of these universities. The study used all available literature that could be relevant to our study.

1.8 Organisation of the Study

This chapter provides an overview of the study by describing its characteristics, research questions, objectives, scope, importance to different stakeholders, and limits. The effect of funding options on the liquidity of Kenya's public universities is examined in Chapter Two through an overview of theoretical and empirical assessments of earlier research publications. A comprehensive overview of the target audience, research design, operationalisation, sample size, measurement of variables, data analysis, and ethical considerations is provided in Chapter Three. Chapter four presents the data collected and the interpretation of the same. The data is presented using the research objectives. Finally, chapter five summarises the findings, a conclusion, and recommendations. The findings led to the study's conclusion and recommendation. The chapter makes recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section gives a background of the research in terms of a theoretical and empirical review of financing options in public universities. The chapter emphasises the financing options available, previous studies' findings, and the gaps identified.

2.2 Theoretical Literature Review

The theoretical review sections aim to provide definitions for terms or phrases pertaining to theories in a particular field of study. The objectives are to comprehend the idea under study and apply theories about finance alternatives and liquidity. Agency theory, resource dependency theory, general systems theory, and Keynesian economics theory are among the theories examined.

2.2.1 Agency Theory

The theory was developed by Jensen and Meckling (1976). In this theory, one party acts on behalf of the other. It is a principal-agent relationship where agents are managers, in this case, university vice-chancellors, and the principal is the government. Information asymmetry is due to the agent holding more information than the principal, especially in the financial sector. The agent may show how well the institution is doing financially, but it is not. The theory states that, with minimum supervision or monitoring, managers might direct cash intended to improve institutions to their selfish gains rather than the set functions.

The theory examines the relationship between the principal and the agent. Agency problems may arise when the agent in an organisational setting takes on the principal's responsibilities (Evanson, 2015). Two variables are involved in this relationship: one is visible and related to

decision-making, while the other is related to the parties' financial transactions (Araujo & Moreira, 2000).

According to Kivistö (2008), one of this theory's main advantages is its unique view on issues other theories do not have. Different insights into the theory can help understand the extent to which universities comply with governments' needs for them to be funded. He also states that one major weakness of this theory lies in its assumptions about human behaviour and motivation. Its focus on individuals' egocentric and cunning behaviour makes it disregard other human motives towards a certain task.

As a result, the study uses this theory to expound on the accountability the agent has to the principal to ensure that finances are well utilised so that these institutions perform better financially. This is the case in universities, where the government, as the principal, always monitors the conditions of public universities to ensure that the university management, acting as an agent, runs these universities accordingly. This theory supported all independent variables since the accountability of funds raised from these variables is very important.

2.2.2 Resource Dependency Theory

The theory was developed by Pfeffer and Salancik (1978). It is concerned with how external forces influence organisations' behaviour and performance in terms of resources gathered and utilised for their development. It tries to explain how universities that are more dependent on external funding for their survival find it hard to develop, since their progress is monitored and controlled by external forces.

Heatley (2018) states that the theory tries to analyse the significance of a resource to a company and what would happen to the said organisation if the resource were not available. By getting resources on its own, an organisation aims to reduce reliance on other entities for the resources

it requires. The theory offers several solutions to address the dependency issue, including joint ventures, inter-organisational relationships, and political actions (Hillman et al., 2009).

Public universities' financing greatly relies on government capitation, which constitutes 48 per cent of their total income (CUE, 2016). Without government capitation, these universities may not be able to operate. The theory suggests that universities must come up with other ways to generate finances to compensate for the funds they receive from the government, reducing their dependency.

2.2.3 Keynesian Economics Theory

The theory was established by Keynes (1930). The theory states that to boost growth, the government should increase demand. Keynesians believe that consumer demand is the driving force in an economy. Keynes argued that higher government expenditure would boost demand for products and services, which would in turn spur economic expansion. Keynesian economics subscribed to the concept that, through economic interventions by the government, better financial performance could be achieved by influencing aggregate demand. The theory supports expansionary fiscal policy, hence more spending on infrastructure and education. This can be achieved by the government increasing the appropriations to public universities. This will make universities more attractive to students aspiring to join universities by having the proper infrastructure to offer better teaching experiences.

According to the IMF (2017), demand is the most important driving force in an economy, and according to this theory, a rise in higher education requests in the country will lead to universities admitting more students, both in regular and module II intakes. This is a good thing and a bad thing at the same time. Universities find themselves short-changed since they must provide vacancies for these students. There is a need to provide universities with the capacity

to admit these students and offer them the quality education needed in the economy. An increase in education sector spending by funding universities more to increase their expansion will enable these institutions to offer better services and be capable of meeting the rising demand for higher learning education.

The expansion policy will have to go hand in hand with other sectors, not only the education sector, to enable professionals to drive the economy for the better. This theory explains the need for the government to spend more on the education sector to enable it to perform better.

2.2.4 General Systems Theory

Ludwig von Bertalanffy originally developed the theory in 1936. He saw General System Theory as an integrated unit and compared it to organisational management. A system is a collection of parts brought together to attain a set target. If a part of the system fails, then the whole system cannot function well. For example, without a mouse or keyboard, the computer cannot function at all.

According to Mbirithi (2013), a system has inputs, processes, and outputs. Inputs may include resources such as finances and workers. All these inputs are processed to meet organisational goals.

Financing options available to an organisation are like a system concerned with an institution's finances. In our universities, available options include, but are not limited to, government capitation, tuition and other fees, income-generating activities and donor funding (CUE, 2016). All these components must be able to contribute to their maximum for these institutions to perform better financially. The theory states that when one of the components is removed, the rest will struggle to meet their required targets. Therefore, all the components of the financial structure should be utilised to the maximum to achieve the maximum results.

2.3 Empirical Literature Review

Numerous general and empirical studies have examined public universities' financial performance and funding alternatives from various angles and settings. This section examines research on Kenya's public universities' liquidity and funding alternatives, as well as the moderating influence of the legal system.

2.3.1 Government Capitation and Liquidity

Bisogno, Citro, and Tommasetti (2014) studied Italian universities' financial health, emphasising budgetary and service-level solvency. Their model includes organisational variables (teaching and research), structural factors (size and quality of structures), and hybrid elements (financial link between the state and each university). They discovered that only hybrid elements were relevant, and neither organisational nor structural factors impacted institutions' financial performance. They attributed this to financial difficulties being faced by the country, hence the government allocating fewer funds to universities. These lead to universities facing financial difficulties when trying to meet their obligations. They also found that the performance funding policy was ineffective without a proper mechanism to verify university accountability.

Mgaiwa (2018), in his study on The Paradox of Financing Public Higher Education in Tanzania and the Fate of Quality Education in Tanzania, found that the government has limited financing capabilities due to its reliance on the national government for funding. The implication is that limited financial resources, in return, cause a decrease in education quality and the capacity to re-innovate. These unreliable and unfeasible financial sources prevent these universities from being competitive globally. The research recommended that to have feasible and dependable sources of resources, universities need to broaden their financial sources.

Iruonagbe and Egharevba (2015), in their study on Higher Education in Nigeria and the Emergence of Private Universities, found that the country's educational system is faced by inadequate government funding, which leads to issues like poor infrastructure and university riots, low budgetary allocation, old curricula, low or minimal research grants, and poor salaries. All these issues led to the establishment of private universities.

2.3.2 Income Generating Activities and Liquidity

Murage and Onyuma (2015) studied the financial performance of income-generating activities at Egerton University from 2003 to 2012. They used university income statements, which were audited, from which they computed financial ratios, from which the financial performance of IGAS for ten years was analysed. Comparing Module II programs to other income-generating activities (IGAS), the study's empirical results showed that they produced the highest returns over the study period. According to the report, IGAS had a 3.02 times liquidity ratio and an average return on investment of 24%. The study concluded that although the IGAS undertaken by the University had positive returns in combating financial hardship in the institution, they have not been effective since they generated little compared to the huge deficit the university experienced. To improve the university's financial performance, more must be done to ensure that IGAS undertaken by the university can generate more income that can supplement other sources of finance applied for the general Well-being of the university's financial performance. Mohamed and Muturi (2017) studied factors affecting the financial performance of IGAS among universities in the Puntland State of Somalia. They collected data from the 2015 and 2016 financial statements of IGAS. Nine income-generating activities (IGAS) that Puntland State University operates were the subjects of the study. It was discovered that these IGAS were the university's main revenue streams, supplementing the usual academic offerings.

Nevertheless, the IGAS faced difficulties with operations that reduced their output. As a result, the money made from these endeavours fell short of what was spent. The study found that for IGAS to perform better, more resources needed to be allocated towards their operation, the institution needed to have a strong internal control system when managing the IGAS to discourage misappropriation and have competent management running the IGAS programs. Generally, the IGAS operated by Puntland State University had better financial performance, but more was needed to secure more from these IGAS.

According to Thuva and Muturi (2017), in their study on determinants of the financial performance of IGAS among public universities, they found that IGAS in public universities are affected by operating costs and internal controls. The study ruled out any effects of liquidity and unit structure on the financial performance of IGAS. The study recommends that IGAS in public universities maintain positive liquidity levels to suit present needs, even though they do not affect performance levels. For IGAS to perform better as intended, management should manage their operating costs effectively and have strong internal controls to minimise wastage and maximise returns from these activities. Based on this study, IGAS contributed significantly to the overall financial performance of the institution. If recommended observations are made, IGAS can contribute more to the overall financial performance of the institution.

2.3.3 Donor Funding and Liquidity

Donor funding entails individuals, organisations, or nations making contributions through aid towards a certain project. Donors in higher education target areas like human resource development, research, and capacity building to help smooth the running of these higher learning institutions. Research by Riechi (2012) found that development expenditure in universities is funded by over 90 per cent of donor grants and is heavily used for research

activities in Kenyan public universities. Development expenditure is very critical in universities as it enables universities to bring up structures like lecture halls, libraries, and other amenities that may facilitate smooth learning in these institutions.

Research carried out on the trends in funding of university libraries in Kenya by Kavulya (2006), the researcher found that three main sources of funding are available to libraries, including funding from the university itself, user fees, donor funding and generation of income. A reduction of funding from the parent university has faced many libraries, which has been caused by reduced funding from the government for the universities. These reductions have resulted in libraries seeking more donor funding to deliver more services to their users. Although very useful, donor funding has its shortcomings, including sustainability, since it runs for a specific time. They create a vacuum when their intended time-lapses leave behind problems for the funded institution to replace that funding. Another challenge for donor funding is the relevance of donated materials. Are the materials donated relevant to university libraries or the university at large, since the recipient institutions have less control over the materials being donated, but receive nothing given to them? All these challenges addressed by Kavulya (2006) raise more eyebrows at the donations available to public universities in Kenya and how they help curb their financial performance.

Donor funding is essential to universities, especially in times of reduced funding by the state Sandra, 2020). Although universities require these donations, donors tend to have demands that must be met before donating their money. In the study, most donations in the US and UK are directed towards the architectural development of universities, and these donors tend to have those buildings named after them and later leave university managers with future maintenance and renovation costs based on the building's use and lifecycle. Many donors have

limited views on societal needs, and they are only interested in being part of a major scientific discovery (Sandra, 2020). This means they chose what to fund and what not to fund. However, due to university managers being cornered by financial constraints, they tend to withstand the outrageous demands of donors to get funding to improve their institutions.

Donor funding is a great alternative way of funding universities to help reduce the shortage created by a reduction in government funding, but it has its challenges. Higher learning institutions need to find ways to mitigate these challenges so that they can utilise donor funding to the fullest. For donor funding to be efficient in helping the financial situation in our public universities, it must be reliable and relevant to the prevailing situations in our public universities in Kenya today.

2.3.4 Tuition and Other Fees and Liquidity

Wangenge-Ouma (2008) noted that the government introduced a cost-sharing policy where they subsidised students' fees. This meant that students paid a flat rate of Ksh. Sixteen thousand were school fees, and the government paid the rest. These moves by the government lead to universities experiencing resource dependence difficulties, where they fully depend on the government for funding. This move saw universities' financial performance decline as they could not rely on low capitation from the government for their operations. A robust financial structure is necessary for improved financial performance. However, when it comes to public universities, the low tuition that students pay has left them without enough money to run their institutions. Universities with many students from the Joint Admission Board tend to experience financial hardship as they rely more on government funding for their operation.

Murage and Onyuma (2015), in their study on IGAS in Egerton University, found out that the university applied several IGAS to subsidise its finances. The analysis found that Module II

programs had the biggest surplus over ten years among the implemented IGAs. The surplus produced was put toward raising the institution's liquidity requirements. Although there was a surplus generated in the Module II program, the amount was not enough to cater for the financial constraints in the institution. More efforts need to be exerted to improve the financial performance of universities.

2.3.5 Government Policy, Financing Options and Liquidity

The government is mandated to provide an environment conducive to conducting business for all types of businesses. These businesses are both public and private. Higher learning institutions are among those institutions that operate under strict observation of the government, both financially and in their management. This is achieved by the government establishing policies to be implemented in the daily operations of these establishments. According to Pástor and Veronesi (2012), government policy can be interpreted as actions adopted by the government that can positively or negatively change the economic environment. It is the uncertainty that is inevitable, and it is categorised into two. One is political uncertainty, which is related to uncertainty if current policies will change, and two, impact uncertainty, which relates to uncertainty if the new government policy will have a positive or negative impact. Pals (2006) argued that government policies are important and should be implemented to achieve targeted results. Obaji and Olugu (2014), defined government policy as any action taken to improve and regulate the conditions of SMEs in their working environment.

According to Amadi (2019), government policy on university funding criteria that have been in force for over 26 years on fixed-rate funding per student has contributed to universities being unable to fund courses that are expensive to undertake. To look for other avenues to source finances, universities ventured into module II programs, which, according to Nganga (2020),

the government dropped university entry levels from B to C+ for state-funded students back in 2016. This resulted in a decline in student numbers admitted into Module II programs, the biggest revenue generator for public universities besides government appropriations. All these actions are beyond universities' control, but they have to follow and implement them regardless of their outcomes, either positive or negative.

For public universities to operate well, the government needs to develop policies that, when implemented, provide positive results. These policies may include better financing, student admissions, management, and other policies that may improve universities in general (Nganga, 2020). The current study indicates that the effect of funding choices on the liquidity of Kenya's public universities is moderated by government policy.

2.4 Summary of Literature Review and Research Gaps

The above literature review shows several research gaps, including conceptual, knowledge, and contextual limitations. Other than Kenya, research on liquidity has been carried out for public institutions in other nations.

Table 2.1: Summary of Literature Review and Research Gaps

Author	Focus and Context of the Study	Key Findings	Research Gaps	How the Current study will fill existing gaps
Bisogno, Citro &Tommasetti (2014)	The financial distress of Italian public universities.	Neither structural nor organisational factors affected financial performance, but hybrid factors did. Performance-based funding policies are not feasible if there are no clear mechanisms through which accountability operates.	Research was based on Italian public universities. The study concentrated on solvency at the cash, budget, and service levels.	This study will focus on financing options available to public universities and their effect on liquidity.
Iruonagbe & Egharevba (2015)	Higher education in Nigeria	Insufficient budgets, old equipment, and outdated curricula have made public universities in Nigeria unable to deliver quality services to the Nigerian people.	The study was done in Nigerian Universities. The study was an exploratory study on universities in Nigeria.	This study will examine universities in Kenya and their liquidity.
Kaji-O'Grady (2020)	Donor-Driven Designs on the University, Architecture and Culture.	Public universities, which depend largely on donor funding, are held hostage by the demands of donors, who need to be met before they donate their money to a noble cause.	The study was carried out on donor funding to universities in the United States.	The study focuses on public universities in Kenya.
Kavulya (2006)	Trends in the Funding of Libraries in Universities in Kenya	Public universities depend largely on the parent organisation for funding; donor funding is being ventured as an alternative funding source for university libraries.	The research was carried out only on four public university libraries. The study was based on primary data.	The research is based on the overall funding and liquidity of all public universities in Kenya.
Murage & Onyuma (2015)	Analysis of Financing Performance of IGAs in Egerton University.	IGAs undertaken by the university had positive returns on addressing financial hardship in the university.	The research was a case study on Egerton University. The study was done between 2003 and 2012. The study researched the Return on Investment, liquidity and Debt ratios of IGAS at Egerton University.	The research is centred on all 31 public universities in Kenya. The study will be from 2019.
Obaji & Olugu (2014).	The Role of Government Policy in Entrepreneurship Development.	The policies that a nation's government enacts have a significant impact on the success of its entrepreneurs.	The study focused on SMEs in Nigeria. The study employed quantitative	The study focuses on the effects of government policy on financing options of

			research, and a questionnaire was used to gather data.	public universities in Kenya.
Riechi (2012).	Revenue diversification in Kenyan public Universities: a case of Kenyatta University.	Revenue from non-governmental sources increased the disposable income available to public universities.	The research was a case study on the University of Nairobi's revenue diversification initiatives. Because there was limited information available on the particular research subject under inquiry, the study used a descriptive survey methodology for exploratory purposes.	The study will be based on all public universities' financing options.
Thuva & Muturi (2017)	Determinants of Financial Performance of IGAs in Jomo Kenyatta University of Agriculture and Technology Enterprises Limited.	The only operating cost and internal controls affect IGAS' financial performance. IGAs hugely contributed to the overall liquidity of public universities.	The research only concentrated on the liquidity of IGAs in JKUAT. The study was based on primary data from managers, unit heads, supervisors and other employees.	The research concentrates on financing options available to public universities in Kenya.
Wangenge-Ouma, (2008)	Globalisation and higher education funding policy shifts in Kenya.	The discontinuation of free higher education in favour of cost sharing and later privatisation and commercialisation of higher education is not only in Kenya but a phenomenon practised globally.	The study focused mainly on the shift in government funding to universities.	The study focuses on how the financing options of universities affect their liquidity.

Source: Researcher (2021).

2.5 Conceptual Framework

A researcher operationalises this set of variables to attain the set goals (Oso & Onen, 2000). The following conceptual framework, which describes the link between dependent and independent variables, guided the study. The independent variable is the financing options, which are Government Capitation, Income Generating Activities, and Donor Funding. The dependent variable is the liquidity, which was measured by the current ratio. The moderating variable used was the government regulatory framework.

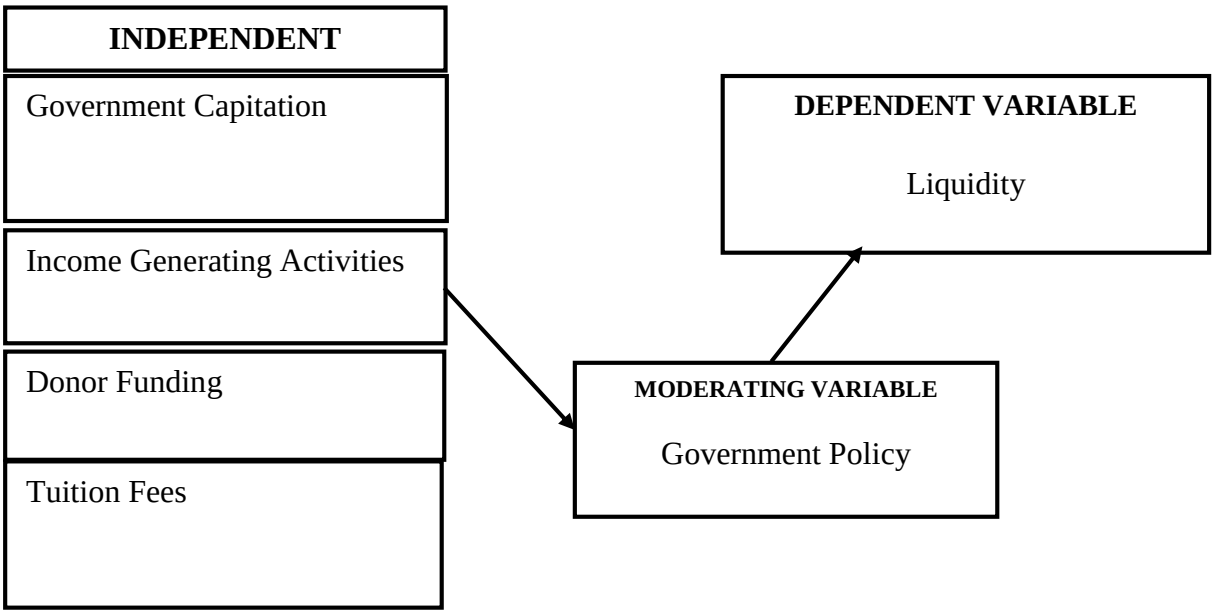

Figure 3: Conceptual Framework.

(Source: Researcher 2021).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology used in the study, including the research philosophy, research design, target population, sampling procedure, research instruments, data collection methods, data analysis, and ethical considerations.

3.2 Research Philosophy

According to Zukauskas, Vveinhardt and Andriukaitienė (2018), research philosophy is a structure of the researcher's thoughts through which new research ideas are gathered. Different research philosophies exist, including positivist, interpretivist, pragmatist, and realistic research philosophies. Research philosophy helps the researcher highlight the source of data to be used, the type of data, and the interpretation of the findings for the research (Easterby-Smith et al,2012).

The study adopted a positivist philosophy. Here, the researcher is impartial and works independently (Žukauskas, Vveinhardt & Andriukaitienė, 2018). In this study, the researcher is said to be free from the study. Here, the researcher adheres to the view that only facts are trustworthy. The researchers believe that he is unbiased and objective in his research.

3.3 Research Design

This is how to get answers to questions in the research. The idea is the overall game plan of the research (Robson, 2002). This study aimed to look into the sources of funding and liquidity for public institutions in Kenya. A causal study design was used because it is appropriate for characterising the current state of affairs in these colleges. This design is used to identify the cause and effect of a certain relation. It focuses on analysing a unique issue to explain the relation between variables and helps adopt better policy actions (Wunsch & Gourbin, 2020).

3.4 Target Population

According to Burns and Burns (2008), a population refers to persons of concern used in a study to find a solution to a problem. The study period was five years from 2016 to 2020 and comprised all 31 chartered public universities. Appendix I consists of all chartered public universities in Kenya within the study period.

3.5 Sampling Design and Sample Size

The census technique was used to select all Kenyan public universities. The 31 public universities between 201 to 2020 were analysed for the study. According to Srinivas (2020), the Census is used when the population is small since it eliminates sampling errors and gives an equal chance to all study variables to be used.

3.6 Empirical Model

A panel data regression model was utilised in the study to investigate the impact of independent variables on the dependent variable. According to Orodho (2007), regression analysis is a statistical method for determining the correlations between variables. It includes different approaches to multiple variable modelling and analysis.

3.6.1 Direct Effect Model

This model estimates the dependent variable in terms of the independent variable. The model was as follows:

$$Yit = \beta 0 + \beta 1\ X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon it \quad \text{.....Equation 3.1}$$

Where:

Yit = Liquidity measured by Current Ratio

X1 = Government Capitation

X2 = Tuition and Other Fees

X3 = Income Generating Activities

X4 = Donor Funding

β1 β2 β3 β4 = Regression Coefficients

εit = Error term

3.6.2 Moderating Effect Model

The study used a moderating variable to check how it affected the regression model. Moderation is established when the model's strength rises further due to its interaction. When the moderating variable is introduced into the model, we have a regression model as below:

$Yit = \beta 0 + \beta 1\ X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6S*X1t + \beta 7S*X2t + \beta 8SX3t + \beta 9SX4t + \varepsilon t$……Equation 3.2

Whereby

Yit = Liquidity measured by Current Ratio

X1 = Government Capitation

X2 = Tuition and Other Fees

X3 = Income Generating Activities

X4 = Donor Funding

S = Government Policy

β1 β2 β3 β4 β5 = Regression Coefficients

β6 β7 β8 β9 = Moderating Effect Coefficients

εt = Error term

3.7 Operationalisation and Measurement of the Variables

The variables in this study have been defined and their measurement indicated in Table 3.1.

Table 3.1: Operationalisation and Measurement of Variables

Variables	Type of Variable	Operationalisation	Measurement	Scale
Liquidity	Dependent	Quick Ratio	Current Assets/ Current Liabilities	Ratio
Government Capitation	Independent	Government Capitation Ratio	Capitation/ Total Revenue	Ratio
Income Generating Activities	Independent	Income Generating Activity Ratio	IGAs/ Total Revenue	Ratio
Donor Funding	Independent	Donor Funding Ratio	Donor Funding/Total Revenue	Ratio
Tuition Fees	Independent	Tuition Fee Ratio	Tuition Fees/Total Revenue	Ratio
Government Regulatory Framework	Moderating	Funding Policy	Funding Policy Effects	Ordinal

Source: Researcher (2021)

3.8 Data Collection Instrument and Procedures

Data collection consolidates evidence to understand a situation more and answer questions that lead to the research (Flick, 2018). The study used both primary and secondary data. Secondary data collection is the use of data that already exists, either in published books, journals or online portals. The data collection instrument used was a secondary data schedule. Audited financial statements for public universities from 2016 to 2020 were collected for this study. Primary data was also used in the form of a questionnaire. Financial Managers, or higher officers in finance from the 31 public universities, were the respondents to our questionnaire.

3.9 Data Analysis and Presentation

Marczyk, DeMatteo, and Festinger (2005) define data analysis as the process of giving meaning to the collected data. To evaluate the information acquired for this study, both descriptive and inferential statistics were applied. Calculating means and standard deviations improved our knowledge of the data. For inferential analysis, such as panel regression and Pearson's simple correlation, STATA software was used. Additional insights were obtained by computing relevant ratios. In the end, the data were shown using tables and figures.

3.10 Diagnostic Testing

These tests assess whether the stochastic features of error correction models (ECM) are met; these tests sidestep traditional econometric problems that can go against the regression model's presumptions (Gujarati, 2003). The multicollinearity, normality, heteroskedasticity, autocorrelation, stationarity, and model specification tests will be performed in this study.

3.10.1 Multicollinearity Test

Regression analysis frequently encounters multicollinearity, resulting from a significant linear correlation between independent variables, making it difficult to discern their respective impacts. According to Hair et al. (2019), this phenomenon causes unstable coefficient estimations and makes interpretation more difficult. Field (2013) recommends that researchers use metrics like the Variance Inflation Factor (VIF) and Tolerance values to identify multicollinearity. Values above 10 indicate considerable multicollinearity. The Variance Index of Fraud (VIF) evaluates the increase in variance of regression coefficients owing to multicollinearity.

In contrast, values below 0.1 indicate severe multicollinearity. Tolerance values measure the percentage of a predictor's variation not explained by other predictors (Kutner et al., 2005). When multicollinearity is encountered, researchers should consider ways to lessen its effects.

These might involve regularisation techniques, combining correlated variables into composite measures, or eliminating them (Belsley et al., 1980). By addressing multicollinearity, researchers can improve the validity of their studies and the reliability and interpretability of regression results.

3.10.2 Normality Test

According to Hair et al. (2019), the normality of a sample is the degree to which it conforms to a normal distribution. This is usually determined via the Shapiro-Wilk test, which is advised for small samples. Normality is suggested by a Shapiro-Wilk p-value greater than 0.05 (Field, 2013). According to Tabachnick and Fidel (2006), homoscedasticity is implied when data satisfy the normalcy assumption, negating the need for additional testing. Because of this, an analysis is made simpler when a Shapiro-Wilk p-value > 0.05 indicates both normality and homoscedasticity.

3.10.3 Heteroskedasticity Test

According to Garson (2012), heteroscedasticity is the state in which the variances of regression disturbances differ among various predictor variables. Regression model estimates become inefficient due to this frequent occurrence in cross-sectional and time-series data investigations (Field, 2013). Researchers frequently use tests like the Breusch-Pagan/Cook-Weisberg test, which Field (2013) suggests is appropriate for detecting heteroscedasticity. Testing for homoscedasticity in the regression model's error term is done by assuming homogeneity of variances in the null hypothesis. The occurrence of heteroscedasticity is suggested by a significance level (p-value) of less than 0.05, which rejects homoscedasticity. Through these tests, investigators may detect and manage heteroscedasticity, guaranteeing the dependability of their regression analysis findings.

3.10.4 Autocorrelation Test

Autocorrelation, often called serial correlation, is a statistical metric that expresses how similar a time series is to a lagged version of itself (Brockwell & Davis, 2016; Tsay, 2020). In other words, it assesses the correlation between a series and its past values (Gujarati, 2019). Autocorrelation plays a critical role in time series analysis and forecasting, as it can significantly impact the validity of statistical inference and the accuracy of predictive models (Lütkepohl, 2021). If not adequately accounted for, autocorrelation can lead to misleading conclusions and misguided decisions, emphasising the importance of accurate testing and diagnosis.

Several statistical tests have been used to detect and measure autocorrelation, each with specific applications and assumptions. The Durbin-Watson test is a simple test that may be used to find autocorrelation in a regression model's residual (Durbin & Watson, 1951; Wooldridge, 2021). The test statistic ranges from 0 to 4, with 2 indicating no autocorrelation. However, the Durbin-Watson test is most effective for testing first-order autocorrelation and may need to be more reliable for higher-order autocorrelation. Another commonly used test for autocorrelation is the Breusch-Godfrey test, which is particularly effective in identifying autocorrelation in the residuals of a regression model with autoregressive error structures (Breusch & Godfrey, 2012; Baltagi, 2020). The Ljung-Box (Q) test is frequently employed to examine if a set of autocorrelations in a time series deviates from zero (Ljung & Box, 1978; Chatfield & Collins, 2010). This test is practical when testing multiple autocorrelations simultaneously.

3.10.5 Stationarity Test

A key idea in time series analysis is stationarity, which is the notion that a series' statistical characteristics don't change over time (Shumway & Stoffer, 2021; Gujarati, 2019; Lütkepohl, 2021). A time series is usually stationary if its mean, variance, autocorrelation, and other statistical characteristics do not change over time. Testing for stationarity is a crucial initial step in time series analysis, as many statistical techniques and models assume that the underlying series is stationary (Shumway & Stoffer, 2021; Gujarati, 2019).

Stationarity tests can be carried out using different tests. The Augmented Dickey-Fuller (ADF) test determines if a time series is stationary around a deterministic trend (Dickey & Fuller, 1981; Wooldridge, 2021). Similarly, the Phillips-Perron (PP) test checks for stationarity in the presence of a trend (Phillips & Perron, 1988; Baltagi, 2020). The Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test examines the mean and variance of the series to identify stationarity (Kwiatkowski et al., 1992; Shumway & Stoffer, 2021). These tests provide valuable insights into the properties of the time series data, allowing researchers to choose appropriate models and make accurate forecasts.

If a time series is non-stationary, various techniques transform it into a stationary form. Standard methods include differencing, logging, or taking roots, which can help to remove trends, seasonality, or other non-stationary components in the data (Gujarati, 2019; Shumway & Stoffer, 2021).

3.10.6 Model Specification Test

Model specification testing is a critical step in the model-building process, as it helps researchers assess the adequacy and appropriateness of their chosen model (Klein, 2002; Gujarati, 2019; Wooldridge, 2021). One important aspect of model specification testing is

evaluating the connection between the dependent and independent variables. The link test, proposed by Cox and Hinkley (1974), is a commonly used method for assessing this relationship. This test checks if a proposed link function is appropriate for the data, connecting the linear predictor and the mean of the dependent variable in regression models (Cox & Hinkley, 1974). The link test involves comparing the observed and expected frequencies of the dependent variable, given the estimated probabilities under the specified link function (Wooldridge, 2021). The null hypothesis is that the observations follow the specified link function, while the alternative hypothesis is that they do not. A significant result indicates that the chosen link function may not be appropriate for the data. By evaluating the link function, researchers can ensure that the model accurately represents the connection between the variables that are independent and dependent.

3.11 Ethical Consideration

These are principles that the researcher should uphold when conducting his/her research (Schulze, 2002). The National Commission for Science, Technology, and Innovation (NACOSTI) granted permission to conduct the study. With full notice that the data would only be used for research, this permit authorised the Office of the Auditor General to be contacted for information.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the data collected and the interpretation of the same. The data is presented using the research objectives which are: examining the effect of government capitation on the liquidity of public universities in Kenya; examining the effect of income-generating activities on the liquidity of public universities in Kenya; examining the effect of tuition fees on the liquidity of public universities in Kenya; examining the effect of donor funding on the liquidity of public universities in Kenya and establishing the moderating effect of government regulatory framework on the liquidity of public universities in Kenya. The data was presented using descriptive statistics and inferential statistics.

4.2 Response Rate

The study analyses the financing options and liquidity of public universities in Kenya. The study sampled all thirty-one public universities and analysed their financial year from 2015/2016 to 2019/2020. The response to the university's participation was 100 per cent, with all offered data for the five financial years. The data for donor funding was not available for all universities. In 2015/2016, 2016/2017 and 2017/2018, only 13(42%) of the universities offered data for donor funding. In 2018/2019, 14(45%) universities offered donor funding data; in 2019/2020, 15(48%) had data on donor funding. According to the World Bank (2020), Kenya's higher education system has faced financial difficulties recently. Although donor funding has historically been the number one source of finance for universities in Kenya, the report by the World Bank warns that this support has recently grown increasingly erratic and unpredictable. The report further indicates that donor financing for Kenya's public institutions is unclear, and the budget shortfall must be filled immediately to maintain the nation's long-

term viability and high-quality education from universities. From the report, this could be why almost fifty (50) per cent of the public universities were missing data on donor funding.

4.3 Descriptive Statistics Analysis

The study sought to analyse the liquidity of all public universities in Kenya. This was obtained by averaging the universities' current assets and liabilities. The descriptive statistics for variables are highlighted in Table 4.1.

Table 4.1: Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Y1 (Liquidity)	31	6.54	4.37	1.26	24.17
X1 (Government capitation)	31	6.35	6.65	1.26	3.32
X2 (Tuition fees)	31	4.89	6.87	3.46	2.81
X3 (Income generation)	31	7.19	1.05	0.00	4.57
X4 (Donor funds)	31	7.74	1.28	0.00	5.49
S1 (Government Policy)	31	3.61	0.19	3.20	3.80

Source: Researcher (2024)

The table presents descriptive statistics summarising variables related to the liquidity of public universities. With an average liquidity (Y1) value of roughly 6.54, public universities appear to have a reasonable level of liquidity on average. The 4.37 standard deviation shows a significant variation in liquidity levels among the observations. Study findings align with those of Sherstobitova et al. (2020), whose research underscores that universities with moderate to high liquidity scores exhibit better financial health, contributing significantly to long-term sustainability. The significant variety in liquidity levels, which range from 1.26 to 24.17, highlights the significant variation in financial circumstances among the universities. Entities having liquidity levels closer to the minimal end of the range may find it challenging to satisfy short-term needs. Universities with liquidity levels closer to the upper end of the range are most likely well-positioned to satisfy their current needs. This finding resonates with the study by Sharma and Morris (2018), which emphasises the importance of maintaining steady

liquidity levels in public universities to mitigate financial risks and uncertainties.

Government capitation (X1) had a mean of 6.35 billion, suggesting a significant financial contribution from the government. The standard deviation of approximately 6.65 billion indicates considerable variation in government capitation received. Government capitation has a fluctuation range, as shown by the values of 1.26 billion (minimum) and 33.2 billion (maximum). However, Liu et al. (2021) argue that government funding often exhibits considerable variability due to changing political landscapes and budgetary constraints, nuances that the need for analysis may not fully capture. Additionally, the low standard deviations for government capitation, which shows a considerable degree of diversity in funding amounts throughout institutions, are similar to the findings of Verba et al. (2000), who contended that governments distribute capitation according to a variety of criteria, resulting in differences in funding levels. Furthermore, despite Trow's (2010) case for standardised funding, the low standard deviations indicate significant variability in funding amounts. This suggests that efforts to guarantee uniformity among universities may have been partially successful or implemented inconsistently.

Tuition fees (X2) had a mean of 4.89 billion and a standard deviation of 6.87 billion. This shows how substantial this variable is to universities and how this income varies from one university to another. The consistent importance of tuition fees across all universities aligns with the work of Smith and Brown (2017), who found that uniform tuition fees can promote a more equitable distribution of educational resources, ensuring accessibility for diverse student populations.

The income-generating activities variable (X3) has a mean of 719 million, which shows how

important the variable is as a source of income for public universities. The variable has a standard deviation of 1.05 billion, showing variability in income received among public universities. Income generation spans from zero to 4.57 billion, reflecting diverse financial capacities across all public universities. This result contradicts the perspective presented by Chan and Wong (2018), which posits that revenue-generation strategies among public universities often align with national or regional economic trends, leading to more homogenous practices and results. These disagreements highlight the complexity of financial dynamics in higher education and underscore the need for a nuanced understanding of factors affecting liquidity and resource allocation in public universities. According to Breneman et al. (2018), universities have pursued alternative revenue streams to counteract declining public funding. The substantial standard deviations for income-generating activities also show significant variation in income generation amongst universities. This aligns with Archibald and Feldman (2015), who highlighted the reliance of income-generation strategies on individual universities' unique circumstances and resource availability. Furthermore, although significant standard deviations imply heterogeneity in revenue production, they might also represent the variety of strategies that universities have used, such as corporate partnerships, research commercialisation, and entrepreneurial endeavours, leading to a range of results, in contrast to Brown and Taylor's (2020) claim that income-generating tactics at universities are uniform.

The donor funds (X4) have an average score of 77.4 million, which is comparatively smaller but still a notable source of external funding. The standard deviation of 128 million indicates the variability in the donor funds received. There is some variation in the amount of donor funding across the institutions, as indicated by the range from zero to 549 million. Kim and Lee's (2019) study proposes that donor funding can introduce significant variability in

university finances, potentially leading to disparities in resource allocation and institutional priorities. Hutchins and Bruce (2018) observed that economic situations may impact donor support, which aligns with the results of this study. According to Meer and Sivanathan's (2018) study, donor funding and university reputations significantly influence fundraising efforts. These studies demonstrate the complexity of donor support and the significance of considering a range of criteria to comprehend its unpredictability.

The government policy (S1) indicator generally falls within a relatively limited band, as indicated by its mean value of roughly 3.61. This suggests that all of the public universities under observation have uniform policies. When the mean value is toward the middle of the range (3.2 to 3.8), it indicates that government policies are generally neither unduly lax nor excessively restrictive. Rather, they probably create an environment favourable for the entities to operate in by striking a balance between stability and adaptability. The government policy indicator shows little variance among the observations, as indicated by the low standard deviation of about 0.19. This shows high consistency or uniformity in government policy among public universities.

4.4 Diagnostic Tests

The diagnostic tests conducted aimed to verify whether the panel data adhered to the primary assumptions of linear regression.

4.4.1 Multicollinearity Test

In the regression model, multicollinearity tests were performed to evaluate the degree of linear relationship between the explanatory variables. The Variance Inflation Factor and Tolerance Values are the main tests for collinearity. Table 4.2 shows the results.

Table 4.2: Multicollinearity Results

Variable	VIF	1/VIF
X1 (Government capitation)	9.27	0.107883
X2 (Tuition fees)	7.19	0.139090
X3 (Income generation)	2.70	0.369995
X4 (Donor funds)	1.05	0.948241
S1 (Government Policy)	1.08	0.925199
Mean VIF	4.26	

Source: Researcher (2024)

As seen from the table, government capitation (X1) and tuition fees (X2) have comparatively high VIFs of 9.27 and 7.19, respectively. According to these values, Multicollinearity problems may arise due to the' moderate correlation of these variables with other variables. It might be challenging to evaluate the distinct effects of each variable when multicollinearity inflates the standard errors of the calculated coefficients. Consequently, consideration should be given to these factors to ascertain whether any modifications, such as their removal or combination, could enhance the accuracy and dependability of the model.

Government Policy (S1), Donor funds (X4), and Income production (X3) had significantly lower VIFs, with Donor funds (X4) having the lowest VIF of 1.05, indicating less collinearity with other variables. These variables' low VIFs suggest that they have little correlation with one another and that multicollinearity is unlikely to cause their coefficients to inflate. Although there is some multicollinearity, it is not very severe throughout the model, as indicated by the mean VIF of 4.26, which is within a reasonable range.

4.4.2 Test for Normality

Normality tests confirm if a sample follows a normal distribution, a fundamental presumption in many statistical studies and models. Kothari and Garg (2014) stress the importance of these tests in ensuring that the fundamental presumptions of various statistical techniques are

satisfied. Shapiro-Wilk tests were applied in this study to determine whether the data set and its distribution were standard. Table 4.3 indicates the results.

Table 4.3: Normality Test Result

Variable	Obs	W	V	z	Prob>z
Y1	31	0.81328	6.082	3.741	0.00009
X1	31	0.68047	10.408	4.854	0.00000
X2	31	0.61006	12.701	5.266	0.00000
X3	31	0.65098	11.369	5.037	0.00000
X4	31	0.69709	9.867	4.743	0.00000
S1	31	0.91115	2.894	2.202	0.01384

Source: Researcher (2024)

According to Field et al. (2018), skewness and kurtosis values should not be greater than 2 and 10 for data to be deemed normal. These criteria guarantee that data distributions conform to the properties of a normal distribution and offer recommendations for interpreting normality tests. Based on the Shapiro-Wilk test results, all variables except perhaps S1 show significant deviation from normality. This implies that assumptions requiring normality might not hold for these variables, and analyses or models relying on such assumptions may need to be adjusted or reconsidered.

4.4.3 Test for Heteroskedasticity

According to Garson (2012), heteroscedasticity denotes uneven variability in regression disturbances among different observations. To confirm the validity of the regression analysis, the study used a Breusch-Pagan/Cook-Weisberg test to look for heteroscedasticity in the regression model's disturbances. Table 4.4 shows the results.

Table 4.4: Heteroskedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for Heteroskedasticity
Ho: Constant variance
Variables: fitted values of y1
chi2(1) = 9.49
Prob > chi2 = 0.0021

Source: Researcher (2024)

According to Wooldridge et al. (2016), the Breusch-Pagan/Cook-Weisberg test ascertains whether the disturbances in the regression model exhibit heteroscedasticity. The null hypothesis (Ho) is predicated on constant variance across observations. The test value (χ^2) 9.49 indicates evidence against the constant variance null hypothesis at the 0.05 significance level. The likelihood of the test statistic (Prob > chi²) is 0.0021, below the conventional significance threshold of 0.05. The null hypothesis is thus disproved.

The rejection of the null hypothesis suggests the presence of heteroskedasticity in the regression model. Stated differently, the variance of the model's errors varies across the levels of the independent variables.

4.4.4 Autocorrelation Test

According to Uyanto (2020), autocorrelation is the relationship between a variable's values and its lag values. This study used the Breusch-Godfrey LM test to evaluate serial correlation in the dataset. Table 4.5 shows the results.

Table 4.5: Autocorrelation Test Results

lags(p) |	**chi2**	**df**	**Prob > chi2**
1	0.326	1	0.5683

H0: no serial correlation

Source: Researcher (2024)

At the usual significance thresholds (e.g., $\alpha = 0.05$), we cannot reject the null hypothesis with a p-value of 0.5683. This implies that the residuals at lag 1 show no signs of serial correlation.

As a result, at this latency, the model's residuals show no discernible autocorrelation.

4.4.5 Stationarity Test

Ajewole et al. (2020) opine that the stationarity of time series data is assessed using the Augmented Dickey-Fuller (ADF) test. This test indicates non-stationarity by looking at a series' existence of a unit root. This study used the ADF test. The results are indicated in Table 4.6.

Table 4.6: Stationarity Test Results

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Y1	-5.577	-3.716	-2.986	-2.624
X1	-7.980	-3.716	-2.986	-2.624
X2	-7.038	-3.716	-2.986	-2.624
X3	-7.315	-3.716	-2.986	-2.624
X4	-5.939	-3.716	-2.986	-2.624
S1	-4.844	-3.716	-2.986	-2.624

Source: Researcher (2024)

The outcomes of the ADF test demonstrate the stationarity of variables in a time series environment. Based on the available test statistics, it seems that at all three significance levels (1%, 5%, and 10%), the test statistics for each variable are below the critical values. This suggests that we can rule out the null hypothesis of non-stationarity for each variable at a significance level of 1%, demonstrating that they are stationary series.

4.4.6 Model Specification Test

The Link test evaluates a regression model's functional form by examining the importance of extra higher-order terms (Hässler et al., 2020). A large p-value suggests that the model's specification is inadequate and calls for the addition of more terms to increase accuracy and fit. Table 4.7 indicates the link test results for the model specification.

Table 4.7: Specification Test Results

y1	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
_hat	-.7563273	1.407977	-0.54	0.595	-8.329891 22.70759
_hatsq	-.1239913	.0974499	1.27	0.214	-2.90949 1.248983
_cons	5.484593	4.722586	1.16	0.255	-40.38446 17.41568

Source: Researcher (2024)

Liquidity is impacted by the variable _hat, as indicated by the _hat coefficient. A negative correlation with liquidity is indicated by its coefficient, which is roughly -0.756. However, the associated p-value is 0.595 and the t-statistic is -0.54, suggesting that this coefficient is not statistically significant at conventional thresholds (e.g., the 5% significance threshold). Liquidity is affected by the variable _hatsq, which is likely the square of _hat, as shown by the _hatsq coefficient. Its correlation with liquidity is negative, as seen by its coefficient of about -0.124. The coefficient in question fails to satisfy conventional criteria for statistical significance, as indicated by the 1.27 t-statistic and 0.214 p-value. The intercept term in the regression equation is denoted by the _cons coefficient. It has a coefficient of around 5.485. There is no statistically significant difference between the intercept and zero at conventional levels, as indicated by the t-statistic of 1.16 and the p-value of 0.255. None of the coefficients seem to be statistically significant overall at conventional levels, based on the p-values. This indicates that liquidity and the variables _hat, _hatsq, and the intercept in this regression model could not have a statistically significant linear relationship.

4.4.7 Bivariate Correlation Analysis Results

Investigating the connections between variable pairs in a dataset is made easier with the aid of bivariate correlation analysis. It gives information on possible correlations between variables before moving on to more intricate examinations. You can spot trends, such as strongly positive or negative associations between variables, by looking at the correlation coefficients. These

trends can guide future research or modelling endeavours. The results for the bivariate correlation analysis are presented in Table 4.8.

Table 4.8: Bivariate Correlation Analysis Results

	Y1	X1	X2	X3	X4	S1
Y1	1.0000					
X1	-0.1999	1.0000				
X2	-0.2300	0.9217	1.0000			
X3	-0.1790	0.7871	0.7094	1.0000		
X4	0.1819	0.0274	-0.0271	-0.0659	1.0000	
S1	-0.4190	0.0850	0.1714	0.0670	-0.1291	1.0000

Source: Researcher (2024)

From the results above, we can see that liquidity (Y1) and government capitation (X1) have a weakly negative correlation (-0.1999). This implies that liquidity value tends to slightly drop as government capitation (X1) value rises. But this relationship's strength isn't that great. Liquidity (Y1) and tuition fees (X2) have a moderately negative correlation (-0.2300). In comparison to liquidity and government capitation, this suggests a slightly stronger inverse link. The value of liquidity tends to drop as the value of tuition fees (X2) rises, although the relationship is not particularly strong. For the variables liquidity (Y1) and income-generating activities (X3): The two variables have a weakly negative correlation (-0.1790). Like with liquidity and tuition fees (X2), there is a small but significant correlation between an increase in income-generating activities (X3) and a slight drop in liquidity (Y1).

Variable liquidity and donor funds (X4) have a weak positive association (0.1819). This implies that liquidity value tends to rise marginally along with the growth in donor funds (X4) value. However, this association's strength is not as strong as the other correlations. Additionally, liquidity and government policy (S1) have a moderately negative association (-0.4190). The correlations with the other variables show a weaker inverse link than this one. The liquidity

value tends to decline more sharply when the government policy (S1) value rises.

Liquidity and the other variables show some connections but are generally weak to moderate in intensity. These results imply that there are not particularly strong correlations between liquidity and the predictor variables (X1, X2, X3, X4, and S1). More research may be necessary to comprehend these interactions and any possible ramifications fully.

4.5 Panel Regression Analysis

The regression line's capacity to explain the entire variance in the dependent variable is detailed in the model summary. The results of a regression analysis using thirty-one observations are displayed in Table 4.9, which presents the findings. The model's F-statistic of 1.42 and related p-value of 0.2509 show that the model's total explanatory power is not statistically significant at conventional levels. The independent variables may account for about 22.14% of the variance in the dependent variable, as indicated by the R-squared value of 0.2214. However, as indicated by the relatively low adjusted R-squared value of 0.0656, the model's explanatory power is less robust when considering the number of predictors. The model's predictions are estimated to differ from the actual values by an average of 4.22 units, based on the root mean square error (RMSE) of 4.2221. As with the earlier analysis, more research might be required to enhance the predicted accuracy and fit of the model.

Table 4.9: Regression Analysis Results

Source	**SS**	**df**	**MS**	Number of obs = 31
Model	126.703986	5	25.3407972	F (9, 21) = 1.42
Residual	445.653879	25	17.8261551	Prob > F = 0.2509
Total	572.357864	30	19.0785955	R-squared = 0.2214
				Adj R-squared = 0.0656
				Root MSE = 4.2221

Y1 (liquidity)	**Coef.**	**Std. error**	**t value**	**p>|t|**	**95 % conf. interval**
X1(Government Capitation)	-8.42	3.53	-0.24	0.813	-8.11 6.43
X2 (Tuition Fees)	-1.46	3.01	-0.05	0.962	-6.35 6.05
X3 (IGAS)	-1.14	1.21	-0.09	0.926	-2.60 2.38
X4 (Donor Funds)	4.56	6.20	0.74	0.469	-8.21 1.73
S1 (Government Policy)	-8.7	4.16	-2.10	0.046	-17.29 -.16
_cons	38.40	15.13	2.54	0.018	7.24 69.55

Source: Researcher (2024)

Thus, the regression equation for factors influencing the financial liquidity of public universities can be expressed as:

$$\mathbf{Yit = -8.42x_1 - 1.46x_2 - 1.14x_3 + 4.56x_4 - 8.72s_1}$$

Whereby:

X1 = Government Capitation

X2 = Tuition and Other Fees

X3 = Income Generating Activities

X4 = Donor Funding

S1 = Government Policy

4.5.1 Hypothesis Testing

Government capitation (X1) has a coefficient of -8.42, a t-value of -0.24, and a standard error of 3.53. Its p-value is 0.813, which suggests that it is not a statistically significant factor explaining liquidity. This implies that, under the investigation's parameters, variations in

government capitation have no appreciable effect on liquidity.

Tuition Fees (X2) with a t-value of -0.05 and a standard error of 3.01, the coefficient is -1.46. Given that tuition fees have a p-value of 0.962, it may be concluded that they do not significantly predict liquidity. This implies that changes in tuition costs have little effect on liquidity in the scenario under study.

Income-generating activities (X3) have a coefficient of -1.14, a t-value of -0.09, and a standard error of 1.21. Given that IGAS's p-value is 0.926, it may be concluded that IGAS does not reliably predict liquidity. This suggests that variations in IGAS have little effect on liquidity levels within the parameters of the analysis.

Donor Funds (X4) have a coefficient of 4.56, a t-value of 0.74, and a standard error 6.20. Given that the p-value for donor funds is 0.469, it can be concluded that they do not significantly predict liquidity. This implies that changes in donor funding have little bearing on the amount of liquidity in the scenario under study.

Government Policy (S1) has a coefficient of -8.73, a t-value of -2.10, and a standard error of 4.16. Its p-value is 0.046, suggesting that it is a statistically significant predictor of liquidity. A negative coefficient indicates that certain government policies may result in decreased liquidity, suggesting that changes in government policy have a major impact on liquidity levels.

4.5.2 Discussion of the Hypotheses

The government's interpretation of the capitation regression coefficient had a negative link with liquidity. These results indicate that a change in government capitation (X1) has no impact on Liquidity. These results align with research by Brown and Jones (2018), which casts doubt on the importance of government capitation in explaining fluctuations in liquidity. In cross-

country comparisons, their research revealed weak evidence of a meaningful link between government financing and liquidity levels. Similarly, Kathomi et al. (2022) found no statistically significant influence of government capitation on liquidity across Kenyan public universities.

Tuition Fees (X2) have a p-value of 0.962, suggesting no statistical significance in relation to Liquidity (Y1). This means that the variable does not significantly explain liquidity levels in the current model.

As per our current regression, income-generating activities (X3) show the coefficient having no statistically significant impact on liquidity (Y1). This implies that liquidity levels tend to remain the same as income generation increases. This interpretation resonates with findings from scholarly studies. For instance, Gupta and Shah (2021) discovered that increased income generation could enhance liquidity in specific sectors by facilitating better debt and expense management. Additionally, Chen et al. (2018) suggested that in specific economic contexts, heightened income generation might not necessarily lead to decreased liquidity, as businesses may opt to retain more cash to mitigate risks. These differing perspectives underscore the multifaceted relationship between income generation and liquidity, warranting further research for a comprehensive understanding.

From the results, donor funds (X4) are not statistically significant in explaining variations in liquidity(Y1). This theory is supported by several publications and research, which recognise the difficulties in figuring out how donor funds affect institutions' liquidity. For example, research conducted by Smith et al. (2018) on the efficacy of donor money in education produced contradictory findings, with donor money having little effect on academic achievements. Similarly, studies on the impact of donor help on economic growth by Jones and

Williams (2020) point to difficulties in determining the efficacy of aid because of things like recipient nation policies and governance. On the other hand, in particular situations, some research supports the importance of donor funds, according to research by Duvendack and Mader. (2020), donor funds, for example, may significantly enhance healthcare outcomes and access in low-income nations. Furthermore, Ricciardi et al.'s 2020 research on the function of donor monies in environmental conservation highlights the beneficial effects of donor assistance for initiatives to conserve biodiversity.

Government policy (S1) actions have a major impact on liquidity levels, as evidenced by the statistically significant coefficient for government policy (-8.726999). A negative coefficient implies that some policy implementations can make the situation under analysis less liquid. This suggests that taxation, regulation, or spending policies have an immediate effect on the availability of liquid assets. The aforementioned results underscore the correlation between financial dynamics and governmental actions, hence stressing the importance of policymakers considering the effects of their choices on liquidity management.

4.5.3 Moderating Effect Model

The moderating effect regression model employed in this investigation is shown in Table 4.10. The findings of a regression analysis using thirty-one observations (universities) are displayed in this table. The model's F-statistic of 1.02 and matching p-value of 0.4537 show that the model's total explanatory power is not statistically significant at conventional levels. The independent factors explain roughly 30.49% of the variance in the dependent variable, with an R-squared of 0.3049. The model may not have captured the correlations between the variables sufficiently, given that the adjusted R-squared value is extremely low at 0.0070. As the model's predictions are, on average, 4.35 units from the actual data, the root mean square error (RMSE)

is 4.3526. More investigation may be required to increase the model's overall fit and forecast accuracy.

Table 4.10: Moderating Model Regression Analysis Results

Source	**SS**	**df**	**MS**	Number of obs = 31
Model	174.502792	9	19.3891991	F (9, 21) = 1.02
Residual	397.855072	21	18.9454796	Prob > F = 0.4537
Total	572.357864	30	19.0785955	R-squared = 0.3049
				Adj R-squared = 0.0070
				Root MSE = 4.3526

Y1 (liquidity)	**Coef.**	**Std. error**	**t value**	**p>|t|**	**95 % conf. interval**
X1	-5.89	7.94	-0.74	0.466	-2.24 1.06
X2	8.43	1.24	0.68	0.503	-1.73 3.41
X3	-4.39	4.44	-0.99	0.333	-1.36 4.83
X4	3.78	1.92	0.20	0.846	-3.62 4.37
S1	-14.73	7.39	-1.99	0.059	-30.10 .64
X1_S1	1.63	2.11	0.77	0.448	-2.76 6.03
X2_S1	-2.32	3.23	-0.72	0.480	-9.04 4.40
X3_S1	1.19	1.22	0.98	0.338	-1.34 3.73
X4_S1	-9.90	5.42	-0.18	0.857	-1.23 1.03
_cons	60.10	26.48	2.27	0.034	5.03 115.17

Source: Researcher (2024)

$$\mathbf{Yit = -5.89}x_1\mathbf{+ 8.43}x_2\mathbf{ -4.39}x_3\mathbf{ + 3.78}x_4\mathbf{ + 1.63}s1\_x1\mathbf{ -2.32}s1\_x2\mathbf{ + 1.19}s1\_x3\mathbf{ – 9.90}s1\_x4$$

The interaction term X1_S1 has a coefficient of 1.63 and a standard error of 2.11. The corresponding p-value is 0.448, and the t-value is 0.77. According to these values, the government capitation (X1) and government policy (S1) interaction does not statistically significantly affect liquidity levels. The range of the coefficient of X1_S1's 95% confidence interval, which encompasses zero and further suggests a lack of significance, is -2.76 to 6.03. The interaction term X2_S1 has a coefficient of -2.32 and a standard error 3.23. The p-value is 0.480, and the corresponding t-value is -0.72. Based on these statistics, it can be concluded that there is no statistically significant effect of the interaction between tuition fees (X2) and government policy (S1) on liquidity. The range of the coefficient of X2_S1's 95% confidence interval, which encompasses zero and indicates a lack of significance, is -9.04 to 4.40.

The interaction term X3_S1 has a coefficient of 1.19 and a standard error of 1.22. The corresponding p-value is 0.338, and the t-value is 0.98. These findings suggest that the relationship between government policy (S1) and income-generating activities (X3) does not significantly affect liquidity. The coefficient of X3_S1 has a 95% confidence interval that spans from -1.34 to 3.73, implying that it is insignificant and encompasses zero.

Finally, with a standard error of 5.42, the coefficient for the interaction term X4_S1 is -9.90. The corresponding p-value is 0.857, and the t-value is -0.18. According to these figures, the interaction between donor funds (X4) and government policy (S1) has no statistically significant effect on liquidity. The range of the coefficient of X4_S1's 95% confidence interval, which encompasses zero and indicates a lack of significance, is -1.23e-07 to 1.03e-07.

In summary, none of the interaction terms between the explanatory variables (X1, X2, X3, X4) and the control variable, government policy (S1), demonstrate statistically significant relationships with liquidity. The coefficients for these interaction terms, along with their associated t-values, p-values, and confidence intervals, indicate a lack of significance, suggesting that the combined effects of these variables and S1 do not significantly influence liquidity levels.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the findings, a conclusion, and recommendations. The findings led to the study's conclusion and recommendation. The chapter makes recommendations for future research.

5.2 Summary of Findings

Public universities have been found to have an average liquidity value of roughly 6.54, which suggests a generally sound ability to satisfy short-term financial obligations. Nonetheless, the notable 4.37 standard deviation highlights the significant variation in liquidity levels among these establishments. This diversity can result from variations in endowment sizes, state financing, revenue streams, or financial management techniques amongst universities. Some universities can find it difficult to meet urgent financial demands, while others might have significantly larger liquidity, giving them more flexibility in managing financial issues. As a result, even though the average liquidity seems appropriate, the large range of liquidity values highlights the significance of careful investigation to pinpoint the precise causes influencing variations in liquidity throughout public institutions.

With an average value of 6.35 billion, government capitation significantly contributes to public universities. However, this contribution varies significantly, as seen by a standard deviation of roughly 6.65 billion and a fluctuation range of 1.26 billion to 33.2 billion. Despite this, a weakly negative correlation (-0.1999) has been found between government capitation (X1) and liquidity (Y1), indicating a tiny, however faint, tendency for liquidity to decline as government

capitation rises. Although there is a very slight negative effect indicated by the government capitation coefficient about liquidity (about -8.42e-11), its lack of statistical significance (p-value of 0.813, 95% confidence interval: -8.11e-10 to 6.43e-10) suggests that changes in government capitation do not significantly affect liquidity.

Tuition fees have a significant mean of 4.89 billion and a noteworthy standard deviation of 6.87 billion. These numbers highlight the importance of tuition fees as a source of revenue for universities and the wide variety among them. Although the association is not very strong, its somewhat negative correlation (-0.2300) with liquidity suggests that liquidity tends to decline as tuition costs rise. With a value of about -1.46e-11, tuition fees negatively correlate with liquidity. As for the effect of tuition fee changes on liquidity, the p-value is 0.962, and the confidence range is between 6.35e-10 and 6.05e-10. Consequently, even though tuition is a significant funding source for universities, its impact on liquidity is insignificant.

Income-generating activities have a mean of 719 million and significant variation among public universities (range from zero to 4.57 billion), illustrating the importance of universities as a source of income. Although there is a slight tendency for liquidity to decrease with increased income generation, as indicated by the weakly negative correlation (-0.1790) with Y1 (liquidity), the coefficient of approximately -1.14e-10 lacks statistical significance with a confidence interval (-2.60e-09 and 2.38e-09) and a p-value of 0.926. This implies that variations in income generated have little effect on liquidity levels. As a result, even while revenue-generating activities are essential to university finances, the current regression analysis suggests their impact on liquidity is negligible.

A lesser but significant source of outside funding is highlighted by donor funds for universities. Its average score is 77.4 million, with a standard deviation of 128 million, indicating variation in the quantities received. Although there is a slight tendency for liquidity to increase with higher donor funding, as indicated by the weak positive association (0.1819) between donor funding and liquidity, the coefficient of approximately 4.56e-09 lacks statistical significance with a high p-value of 0.469 and a confidence interval (-8.21e-09 and 1.73e-08). This implies that variations in donor financing have little effect on liquidity levels. Although donor monies are important to the university's budget, the current analysis suggests minimal impact on liquidity.

Government policy has a low standard deviation of roughly 0.19 and a mean value of roughly 3.61, which shows a generally uniform and consistent pattern among public universities. This implies that stable and flexible government policies provide these organisations a conducive operating environment. Although there is a moderate negative association (-0.4190) between liquidity and government policy, suggesting that liquidity tends to decrease as government policy tightens, the coefficient of roughly -8.725999, with a p-value of 0.046, is not statistically significant at the traditional level of 0.05. Although there may be some evidence that alterations in governmental policies impact liquidity, the results are still equivocal. The negative coefficient, however, suggests a possible link that merits more investigation.

5.3 Conclusion

Public universities' liquidity levels indicate an area that needs more research. Universities differ significantly in their average liquidity scores, although they generally indicate an ability to satisfy short-term financial obligations. The range of elements contributing to this variance is probably numerous, including endowment amounts, state funding sources, revenue streams,

and financial management techniques. Some universities might have strong liquidity positions, but others might have difficulties. Comprehending the fundamental reasons behind these discrepancies thus requires thorough research. Ultimately, these evaluations are crucial to developing focused initiatives meant to enhance the financial sustainability and resilience of the higher education sector, which guarantees public universities' sustained stability and success in carrying out their missions.

Public universities receive a big financial boost from government capitation. However, the amount of this donation differs greatly throughout universities. A slight negative association has been seen with liquidity, suggesting a slight propensity for liquidity to decrease as government capitation increases. Although there is a very slight negative correlation between government capitation and liquidity, the data do not support the hypothesis that changes in government capitation have a major effect on liquidity. This underscores the need to reassess university financial management strategies to ensure long-term sustainability and resilience in the face of evolving economic landscapes.

The study findings and discussion shed light on the stability of tuition fees within university finances, revealing a consistent pricing structure or regulatory framework governing fee adjustments. Despite this stability, tuition fees exhibit minimal direct impact on liquidity levels, challenging conventional assumptions about their role in financial stability. This underscores the need to reassess financial management strategies within higher education institutions to ensure long-term sustainability and resilience in the face of evolving economic landscapes.

While potentially beneficial for universities' financial growth, income-generating activities contribute a big chunk of the university's finances. Liquidity levels tend to decrease slightly with an increase in income-generating activities. Further studies are needed into the

management of universities' finances to better understand and manage the liquidity levels of public universities.

In contrast, despite their considerable heterogeneity, donor funds have minimal impact on university liquidity. Their unpredictable nature suggests they may not significantly influence liquidity levels, prompting the need to diversify funding sources to maintain steady liquidity amidst sporadic variations in donor contributions. This underscores the importance of strategic financial planning and resource allocation to navigate the complexities of monetary interactions within universities effectively.

Overall, the findings emphasise how important government policies are in determining university liquidity while revealing the limited direct impact of factors like donor funds, tuition fees, and income-generating activities. Favourable government policies tend to positively affect university liquidity levels. Therefore, more research is needed to keenly understand the liquidity issues of public universities and how to improve them over time.

5.4 Recommendations

The study recommends the following:

5.4.1 Recommendations for Practice

Universities should focus on optimising income generation strategies. This may involve diversifying revenue streams, exploring innovative income-generating activities, and enhancing resource utilisation efficiency to mitigate potential liquidity challenges.

Universities should establish robust cash management practices. Implementing sound cash budgeting, forecasting, and variance analysis techniques can facilitate educated financial decisions and guarantee the efficient and effective use of cash resources.

Improving financial planning and budgeting practices. Financial sustainability can be increased by matching budgets to available funds and continuously tightening spending limits. In order to make up for the reduction in government financing, universities should also look into creative alternative ways to mobilise resources.

Universities should develop strong donor relationships. They can increase donor generosity and support by implementing donor appreciation programs, planning fundraising activities, and regularly updating donors on the impact of their contributions.

5.4.2 Recommendations for Policy

Given the non-significant relationship between government capitation and liquidity, policymakers should review existing funding allocation policies for public universities. Assessing the effectiveness of government funding mechanisms and exploring alternative methods could ensure better financial stability and liquidity management within higher education institutions.

While donor funds did not significantly impact liquidity, policymakers should advocate for enhanced transparency and accountability in managing donor contributions. Implementing policies and guidelines for the efficient utilisation and reporting of donor funds can improve trust and confidence among donors, potentially leading to increased contributions over time.

Policymakers should establish financial resilience policies for public universities in light of the inverse relationship between income generation and liquidity. This may include developing contingency funds, implementing risk management strategies, and ensuring adequate financial buffers to mitigate the adverse effects of income fluctuations on liquidity.

Universities should promote collaborative funding initiatives among public universities,

government agencies, and private sector partners. Encouraging joint ventures, public-private partnerships, and industry collaborations can enhance financial sustainability and liquidity resilience across the higher education sector.

5.5 Contribution to Knowledge

The findings of this study are poised to bridge a notable gap in understanding and enriching the existing academic discourse concerning university liquidity. While previous research has predominantly focused on conventional financial metrics to evaluate university financial health, this study extends the available empirical evidence by incorporating liquidity metrics as a critical measure. Doing this offers a more comprehensive understanding of university financial stability, illuminating the complex dynamics of liquidity management in higher education. Because financial sustainability is becoming increasingly important in higher education, researchers and other stakeholders must look into liquidity. Moreover, this study enhances the application of theoretical frameworks by validating their relevance in the context of university finances. By aligning its findings with established theories such as agency theory, resource dependency theory, Keynesian economics theory and general system theory, it extends the evidence base on the applicability of these frameworks in understanding liquidity dynamics in universities.

These contributions deepen our understanding of university liquidity, providing valuable insights for academic research and informing practical financial management and decision-making strategies within higher education institutions.

5.6 Suggestion for Further Research

Given the non-significant p-value, the researcher recommends further research to explore the relationship between government capitation, income-generating activities, tuition fees, donor

funding and other financial indicators or outcomes. For example, the impact of government capitation on educational quality, student outcomes, or infrastructure development could be investigated. By looking at a wider range of variables, universities can obtain a more thorough picture of how funding alternatives impact their financial condition.

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APPENDICES

Appendix 1: Sample of Introduction Letter.

The Auditor General,

Office of the Auditor General,

P.O BOX 30084-00100,

Nairobi.

Dear Madam,

My name is Mbugua Hillary Ngugi, a Masters' of Science student at Kenyatta University. Am carrying out a research study on Financing Options and Liquidity of Public Universities in Kenya. I would be appreciative if you could if you could provide for me all audited annual financial reports for all the chattered public universities in Kenya for the year 2016- 2020 for this study.

All the data provided will be kept private and utilized just for this research. A copy of the final thesis and a summary of the findings will be made available upon the study's conclusion.

Please contact the undersigned if you have any questions.

Yours faithfully,

Mbugua Hillary Ngugi

D58/CTY/27663/2018

Mobile Number: 0707 812 055

Email: jhillary41@gmail.com

Appendix 2: Secondary Data Schedule.

S/no	University	Variables
1	Chuka University	Government capitation IGAS Tuition Fees Donor funding Government Policy Current Assets Current Liabilities
2	Dedan Kimathi University of Technology	
3	Egerton University	
4	Garissa University	
5	Jaramogi Oginga Odinga University of Science and Technology	
6	Jomo Kenyatta University of Agriculture & Technology (JKUAT)	
7	Karatina University	
8	Kenyatta University	
9	Kibabii University	
10	Kirinyaga University	
11	Kisii University	
12	Laikipia University	
13	Machakos University	
14	Maasai Mara University	
15	Maseno University	
16	Masinde Muliro University of Science and Technology	
17	Meru University of Science and Technology	
18	Moi University	
19	Multi-Media University	
20	Murang'a University of Technology	
21	Pwani University	
22	Rongo University	
23	South Eastern Kenya University	
24	TaitaTaveta University	
25	Technical University of Mombasa	
26	Technical University of Kenya	
27	The Co-operative University of Kenya	
28	University of Eldoret	
29	University of Embu	
30	University of Kabianga	
31	University of Nairobi	

Appendix 3: Questionnaire

Dear respondent,

RE: REQUEST FOR INFORMATION

I wish to carry out an academic research study titled "Financing Options and Liquidity of Public Universities in Kenya'. I would appreciate it if you could spare a few minutes from your hectic day to complete the attached questionnaire. Your supplied data and information will only be utilized for study.

During the data gathering, analysis, and report writing processes, your name or identify will not be disclosed in any way.

Yours Sincerely,

MBUGUA HILLARY NGUGI

SECTION A: Biographical Information

Please complete the following biographical information. This information will only be used for statistical purposes.

i. Kindly indicate by ticking the period bracket showing the period you have worked at your institution?
   a. 0-5 years **[ ]**
   b. 6-10 years old **[ ]**
   c. 11-15 years old **[ ]**
   d. 16-20 years old **[ ]**
   e. 21-25 years old **[ ]**
   f. Above 25years **[ ]**

ii. Please indicate the highest level of education that you have achieved:
   a. _____ Doctoral (Ph. D.) degree
   b. _____ Master's degree
   c. _____ Bachelor's degree
   d. _____ HND/Diploma

SECTION B: Variables

Please indicate the level of your agreement with the following statements using the scale; (1. Strongly Disagree 2. Disagree 4. Agree 5. Strongly Agree)

Statement	1	2	4	5
1. Tuition fees paid by students are affected by government policy				
2. Donor funding to universities is affected by government policy				
3. Amount of government capitation to universities is affected by government policy				
4. Income generating activities carried out by universities are greatly affected by government capitation				
5. University liquidity levels are affected by government policy				

THE END

THANK YOU

Appendix 4: Research Authorisation

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: D58/CTY/PT/27663/2018

DATE: 31st October, 2022

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MR. MBUGUA HILLARY NGUGI – REG. NO. D58/CTY/PT/27663/2018

I write to introduce Mr. Mbugua Hillary Ngugi who is a Postgraduate Student of this University. He is registered for M.Sc. degree programme in the **Department of Accounting and Finance.**

Mr. Mbugua intends to conduct research for a M.Sc. thesis Proposal entitled, **"Financing Options and Financial Performance of Public Universities in Kenya."**

Any assistance given will be highly appreciated.

Yours faithfully,

for **PROF. ELISHIBA KIMANI**
DEAN, GRADUATE SCHOOL

Appendix 5: NACOSTI permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **360093**

Date of Issue: **16/November/2022**

RESEARCH LICENSE

This is to Certify that Mr.. HILLARY MBUGUA NGUGI of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: FINANCING OPTIONS AND FINANCIAL PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA for the period ending : 16/November/2023.

License No: **NACOSTI/P/22/21962**

360093

Applicant Identification Number

Director General
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