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DETERMINANTS OF FINANCIAL SUSTAINABILITY OF PUBLIC UNIVERSITIES IN KENYA

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ABSTRACT

This study focused on establishing the possible determinants of financial sustainability of public universities in Kenya. The study was guided by three specific objectives; management of liquidity, financial investments and management of financial risk. The study used the correlational research approach and targeted public universities in Kenya which were chattered as of July 2014. A sample size of eighteen Kenyan public universities was used, the census sampling technique was used so as to have a proper representation and ensure appropriate response rate. The secondary data entailed the review of published Financial Statements covering a total of four years an equivalent of a complete academic cycle for regular courses in a public university. Data was analyzed descriptively and also using inferential statistics like ANOVA using the Stata program. Time series and panel data technique were used to interpret the data which was then presented in diagrams, figures, graphs and tables. Multiple linear regression model was then fitted to give possible conclusions on the effect of independent variables on the dependent variable. The study results indicated that, management of liquidity, financial investments and management of financial risk showed an effect on financial sustainability. This study would be helpful to the government of Kenya in coming up with strategies to employ in enhancing financial sustainability in Public Universities especially at that period of time when the education sector was adversely affected by the Corona pandemic. Policy recommendations include; sound structures for management of financial risks and cost cutting measures be put in place. Review of existing policy of funding to match the increased spending brought about by the increasing wage bill and consider reinstating the capital grants for capital development projects. Investment policy to be revised to make provisions for funding revenue generating ventures that can play a complementary role as a source of internal funding that would later enhance cash flows in the foreseeable future.

Key Words: *Liquidity Management, Financial Investments, Financial Risk Management*

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INTRODUCTION

Public universities are very vital in promoting higher education. They admit students either as government sponsored or private sponsored. In most cases student go for the government sponsored slots though the placement procedure by the ministry of Education. This admission has a reduced financial burden to the students during their academic life. Attaining higher education through university education is a need that has recorded high demand yet there is no compensating increase in the financial allocation to universities from the Government to cushion this, (Gudo, 2014). Public universities are set up by the government for the purpose of promoting literacy as the main goal and objective. They are created by the government, managed professionally and transparently to ensure value creation for society and the students (Organization for Economic Co-operation & Development, 2014).

Regionally, sustainable finances pose a great challenge in government institutions of higher learning. This therefore implies that only those institutions that have sound financial structures and stable income flows are able to fulfill their missions and withstand any arising challenge (Sazonov & khamova, 2015). Finance sustainability aims at ensuring that the set goals and targets by the university are reached by availing sufficient income to facilitate the universities in investing in future academic and research activities. According to Mamo (2015) in his study on revenue generation strategies in Sub-Saharan African universities, found out that JKUAT, using well formulated revenue generation strategies such as forming alliances and partnerships with international organizations is working towards ensuring finance sustainability.

According to Belyakov (2012), the debate on sustainability in financial matters in institutions of higher learning has emerged to be an area of interest. Kenya's public university system has experienced considerable growth in size and number which has not been accompanied by a review in the level of financial facilitation to bring a balance (Gudo, 2014). Most of them have faced financial constraints and struggles. This has been necessitated by budget constraints and elevated wage bill brought about by the increasing demand for advanced academic attainment (Mamo, 2015). According to the Auditor General Report published on 3rd November 2018, most public universities are struggling to meet their financial obligations, as per the report by the Public Investments Committee (PIC). According to the PIC, most public universities for the financial year 2013-14, are operating on negative working capital as per their financial statements.

According to Mamo (2015) in his study on revenue generation strategies in Sub-Saharan African universities, JKUAT having employed well organized income generation strategies through alliances and partnerships with international organizations is working towards ensuring finance sustainability. The self-sponsored criteria of admission of students are actually positively impacting financial stability (Mamo, 2015). Most universities who seem to be flexible and autonomous in their financial management strategies still record sustainability challenges. But generally in most cases it's been noted that when a firm engages in sustainable financial investment, then it's capable to build its corporate reputation (Ogalo, 2011).

Statement of the Problem

In public universities the aspect of having sustainable finances is very core in achieving set goals because it translates to their long-term smooth running of day to day activities (Leon & Cock, 2016). It enables a firm to operate effectively for the foreseen future by being able to meet its running costs without depending on other external subsidies from donors (Mutinda & Ngahu, 2016). Most public universities globally do experience financial constraints. According to Estermann and Pruvot (2011) financial sustainability is one of the challenges that face European universities. Most of the countries have endeavored to put in place mitigation measures. For example in Spain, according to Alonso, Alejandra and Perez (2017)

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Spanish public universities are obligated by law to comply with the aspect of sustainable finances in its operations.

Kenyan Public Universities have as well been experiencing financial crisis in the recent past calling for government intervention to mitigate the negative trend (Ooko, 2018). According to Munene (2019), the financial struggles facing Kenyan public universities has had a negative impact on the operations in a manner that actually raises concern about their long-term sustainability. According to Gudo (2014), the strategy put in place by the Kenyan government to fund higher education is inadequate. Oppong (2015) looked at the matter and he later on suggested that further research be done to track and solve the issue. The 100% transition strategy adopted by the Kenyan Government where most students get direct admission as government sponsored led to a decrease in tuition related income, most Universities have recorded a financial strain in a way or another (http://www.oagkenya.org.ke). This study sought to find out what could be the remedy by looking to this challenge in public universities to ensure continuity in its financial operations.

Research objective

The general objective for the study was to establish the Determinants of financial sustainability of Public Universities in Kenya. The specific objectives were;

- To establish the effect of liquidity management on financial sustainability of public universities in Kenya
- To determine the effect of financial investment on financial sustainability of public universities in Kenya
- To determine the effect of financial risk management on financial sustainability of public universities in Kenya

The study was guided by the following null hypotheses:

- H_{01}: Liquidity management does not influence on financial sustainability public Universities in Kenya
- H_{02}: Financial investments do not influence financial sustainability of Public Universities in Kenya
- H_{03}: Financial risk management does not affect the financial sustainability of Public Universities in Kenya

LITERATURE REVIEW

Theoretical Framework

Capital Structure Theory

The capital structure theory is used to explain how the firm gets its finances to run its operations. Financing is an important aspect in the life of an organization especially in that critical decision of capital sourcing. Firms are faced with the challenge of coming up with the most effective model of financial framework that is most applicable to them. Public Universities like other firms also do experience the problem of capital structure ratio (Handoo & Sharma, 2014). The ideal capital structure of a firm is the main challenge whereby the firm is faced with the question of coming up with the best model (Modgllian & miller, 1951). This theory explains the financial policy used in coming up with the best and suitable capital structure; the ratio between debt and equity and how to maximize firm's value (Ukhriyawati, Ratnawati & Riyad, 2017).

Capital structure of a company comprises of debt and equity. The firm looks at the most suitable combination optimal structure. This however is not fixed, it can be changed from time to time as need arises. Capital structure has an impact on company's finances. Mujahid and Akhtar (2014) studied on the effect of capital structure on the firm sustainability in matters of finance in textile industry of Pakistan. The study focused on return on assets, return on equity and earnings per share ratios. The study findings stated that the capital structure positively impacts the firm's financial and shareholders wealth. Capital structure.

The capital structure decisions made by a firm have a direct influence on the long term sustainability of

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the firm. Niresh (2012) concluded that firms' profitability depend on the capital structure decisions. Abor (2005) also did a research and disclosed that there is a significant relationship between total debts and total assets which constitutes the capital structure. This therefore implies that firms depend more on debt for financing, this affects financial life of the firms. Most companies find it very difficult to maintain a balance and come up with the best composition of capital structure, the public universities are not exceptional.

This theory is relevant in this study because it helps to analyze how public universities structure their capital and how they source their capital in order to maximize returns, while ensuring that they maintain the costs of capital below the benefits. According to Estermann and Pruvot (2011) most European countries experience challenges with maintaining sustainable financial life. To maintain a healthy degree of diversity in the funding structure of the universities is key to achieving financial stability. Considering the income sources for these European countries, only universities with sound financial structures coupled with predictable and stable income flows can be able to cope with financial challenges. It was also noted that to attain financially sustainable state, learning institutions ought to maintain a diverse income structure, identify reliable and sustainable donor public funding for research and innovation for other activities and projects of the universities. A study by Rhyne (2012) showed that, firms with high ratio of equity in their structure normally record high profits. High leverage is generally directly proportional to increased profit efficiency in any given firm (Berger & Mester, 2015)

Akeem, Terer, Kinyanjui and Kayode (2014) studied on the effects of capital structure on the performance of Nigerian firms in the manufacturing sector, and dealt on capital structure. The findings showed that total debt and debt to equity ratio negatively affected the firm performance. Kharusi and Rama (2017) researched about private higher education institutions and looked at two different institutions and the conclusion was a positive influence on finances for Majan College compared to Dhofar University. This shows that educational institutions should be financed majorly by equity as opposed to debt financing to ensure sustainability.

Agency Theory

Agency theory is used to describe the relationship the principal and the agent,(Moe,1984). Third parties normally consider the performance of any organization in matters of finances whenever they wish to make any financial commitment and investment decision (Ahmadabadi, 2013). Agency relationships are common in cases of delegation of authority. The theory is useful in amicably resolving any challenges that can occur in agency relationships. According to the agency theory, the assumption is that whenever the principals delegate any authority to the agents, then issues to do with control comes in. The Agency theory is back up of the various decisions made by the government to employ some governance procedures in addressing the problems to do with performance in universities and also the increasing cost of running these institutions. (Kivisto, 2007). Agency theory is ideal in tackling matters to do with principle-agent relationships in regard to the governance of public sector entities such as the universities.

There has been an increased freedom and self-rule within public universities with very little accountability (Gornitzka, 2004). Fostering accountability is the main element in the policy agenda in many higher education systems (Huisman & Currie, 2004). The agency theory comes in to help enhance a conducive work relationship between the government and the university management. In the current world where corruption is rampant, the best way to maintain transparency is to enhance a cordial relationship between the principal and the agent. Efficient allocation of resources and effective cost cutting measures is vital. There should be trust and confidence between government and university management, accuracy and relevance of the data provided by universities; and also confidence in the

established procedures of governance (Kivisto, 2007)

This theory is relevant in handling relationships of the principal (Government) and the agent who is the University management board. It explains any conflict between the two. It's important in handling agency problems where there is conflict of interest between university management and the government. Gatsi (2016) in his study on debt structure backed up this theory where he reasoned that, agency problems are common in organizations due to the possible conflicts between managers and stakeholders. Managers consider using borrowed funds especially with high risk projects. The issue of investment is tricky especially where there are inherent risks; this may make the management not to venture into any income generating activities and investment (Anshun & Kapil, 2014). In most cases the management opt to solve problems to do with agency relationship mechanically by borrowing funds to cover up any possible cash flow problems. Innocent (2016) stated that debt management plays a major role in improving the firms cost efficiency. Agency theory is therefore adopted in this to handle any matters arising from the relationship between the university management as the agent and government.

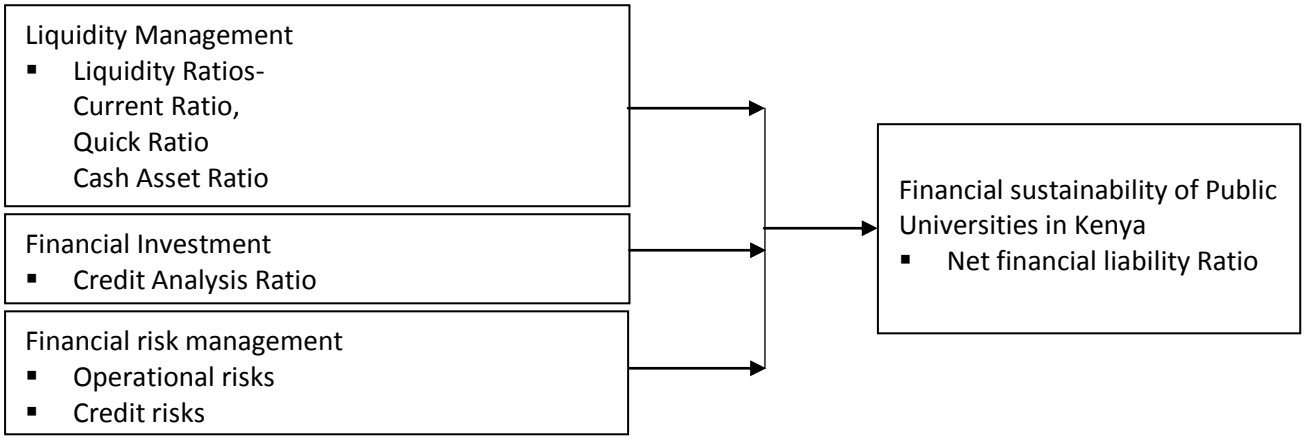

Figure 1: Conceptual Framework

Management of Liquidity and financial sustainability

Liquidity implies a position in a firm is able to easily convert its assets into cash whenever there is need to. Liquid assets are highly convertible into cash as soon as needed to meet pending financial obligation (Tarek, 2016). Investors use liquidity ratios to evaluate the value of a company's stocks and therefore the need for liquidity management is rational. In most cases the profitability of many firms is influenced by the strategies put in place to ensure sound management of liquidity. This has led to a scenario whereby the firms opt for sound and effective programs and strategies in management of liquidity (Adebayo, 2011). The liquidity position of an institution can affect its financial well-being and the whole economy at large (Mehta, 2012). Liquidity position is therefore a paramount aspect of institution performance since it impacts on sustainability.

According to Agbada and Osuji, (2013), management of Liquidity focuses on systematically restraining from the market of releasing to the market for circulation the liquidity that matches the desired level of short-term reserve. Poor management of liquidity exposes institution to liquidity risk which can have impact on its sustainability and performance. In a research done by Kimathi (2015) on factors affecting liquidity risk management practices in microfinance institutions in Kenya, the researcher found out that liquidity risk

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management has accelerated growth of firms in Kenya.

Financial Investment and financial sustainability

The financial investment is all about a firm involving itself in financial activities that work towards increasing its revenue. When a firm involves itself in financial investment, this helps in strengthening the firm (Ogalo, 2011). Participating in sustainable investment promotes the firms' value creation opportunities and thus enabling it to grow and self-market itself (Beld, 2014). Financial investment helps a firm generate more income which can be converted into investment ventures that involve asset acquisition. A firm spies on high performing assets that show high yields where it is expected to either bring in revenue or later be revalued highly and be disposed later on with high gains (Adelino & Robinson, 2017).

When a firm invests in research and innovation, though it's a long term investment in capital development, this is able to create an income inflow which improves long term financial position. Pereira and Roca-Sagales (2010) studied on the effect of investment on performance of firms that are privately owned in Spain. It was found that investment promoted capital accumulation thus influencing financial position. Prudent financial investment will entail the management of liquidity risk. This can be achieved by restricting and controlling the investment portfolios in illiquid markets. Large scale traders in particular prefer liquid markets, such as the forex currency market (Ajao & Solomon 2012). According to Njiiri (2015) financial performance has a major impact on investment of Insurance firms. According to Karvonen (2010), investments increase the cash flows and cut down on the volatility related with cash flows. Marketing investments have an effect on the financial status of a firm by impacting cash flows or by leveraging marketing assets (Ahmed, 2017). Investments in marketing activities create a financial impact by promoting the key marketing processes and competitive advantage (Karvonen, 2010).

Financial investment in public universities can be achieved through Income diversification if proper procedures are put in place. Studies conducted by parlovsky (2010) and Epstein (2007) showed that investment affects a firms' financial life. Sustainable financial investment may yield a low return on investment in the near future but in the long run, it is more sustainable and yields great return. This means that when an institution considers venturing into investment then, they have to focus at the long term results which are definitely sustainable. According to Kavanagh (2007) finance sustainability is achieved through long term financial planning. Afriyie (2015) did a study on the sustainable factors of higher learning institutions in different parts of the world and established that finance sustainability can be achieved by operating on internally-generated income and investment portfolio funds.

Management of Financial risk and financial sustainability

Management of risks is an area of concern and interest in the matters of business and related fields (Yossi, 2009). It deals with highlighting and eradicating any possible loopholes in the entire process of project implementation (Jeppesen, 2010). Financial risks are a major threat to most organizations, therefore prudent management of financial risks is necessary in the mitigation and complete elimination of the loses. When risks are carefully identified prematurely and dealt with in good time, then this can enable an organization to avoid unnecessary wastage and enhance efficiency through cost cutting strategies that eliminates wasteful expenditures (Henriksen & Uhlenfeldt, 2006). These resulting cost savings can influence resource utilization and the yield from the limited resources in meeting the increasing demand (Hommen & Rolfstam, 2009).

Guideline and procedures for the implementation of a strategy for risk management in Kenyan public sector are contained in the Public Finance Management Act (PFMA), 1999 However, evidence indicates that despite the existence of this regulatory framework, prudent risk control in the

public sector has not been achieved. This is attributable to the uncontrolled fraud among public officials, poor compliance with legislation and poor internal audit systems (the National Treasury, 2014 & PriceWaterhouse Coopers, 2014). Another guideline is provided by the Six Steps' Framework Approach by the National Treasury 2014. it stipulates the procedure as risk identification, analysis of the causes and its occurrence, prioritization, formulation, implementation, and continuous evaluation of the effects of risk response. According to Daudi (2010) proper financial risk control by an organization contributes to sustainable financial life of the firm.

Deloitte (2008) states that although it is clear that financial risk management forms part of strategy formulation and implementation, in most cases, strategy formulation has been done in lieu of the exercise. The measures for risk identification and mitigation are set aside and this makes the process of strategy implementation exposed to enormous risks that can turn costly to the firm. Financial risk management has been discussed by authors such as Daudi (2010) and Beasley (2005) to be a measure for enhancing cost cutting and the overall extent of the sustenance of an organization. According to Okanga (2016) when an appropriate framework for control of financial risk is not put in place, then this undermines effective financial management and optimization which would otherwise ensure that all the social-economic programmes are effectively worked out to attain the set goals both socially and economically.

Empirical Studies

It's important to public universities in Kenya to be financially sustainable so as to achieve major educational goals set by the government. The daily financial activities and engagements in public universities build up to inform their financial life in the near future. The study involved management of working capital, management of liquidity, financial investments and management of financial risk as the independent variables. The various studies reviewed include; Karanja and Karuti (2014) researched on Non-Governmental Institutions operating in Isiolo County, Kenya. The study found out that funding in NGO's was a challenge whereby government procures hampered the smooth running of NGO's. They recommended that government should put in place policies that enhance financial stability and also ensure their involvement in policy making.

Ngoe (2012) studied on sustainability of firms but majored on youth enterprises funded under the Youth Enterprise development fund in Mombasa County. The conclusions were that financial life of a firm is affected by financial planning, financial procedures and controls, record keeping systems, financial reporting and reinvestment. Financing by both equity and debt play a critical role in financial state of a firm. Rao (2013) did a research on Kenyan Water Industry in regard to sources of capital and financial stability, while Nganga and Kibati (2016) looked at its determinants in private middle level colleges in Nakuru County, Kenya. The conclusions were that capital structure and resource allocation had significant effect .The conclusions dint specify on financial effect.

According to Wambugu and Ngugi (2012) who studied on micro finance institutions in Kenya, majoring on capital adequacy in the Kenya Women Finance Trust (KWFT) Deposit taking micro finance. The conclusions were that capital adequacy influenced sustainability of KWFT. Ndege, Mohamed, and Rukangu (2016) did a study on youth projects funded by the government in Maara Sub-County, conclusions indicated that sustainability of youth projects was influenced by leadership and youth entrepreneurship training. The financial aspect was not taken into account in this study yet it was the research problem.

Kharusi and Rama (2017) did a research on higher education institutions two different institutions and got contradicting outcome on the two thus Majan College compared to Dhofar University. The conclusionindicated equity funding as the suitable source of funds for educational institutions. Gill, Biger, and Mathur (2010), in their study established

a positive significant relationship between cash conversion cycle and firm profitability. Sharma and Kumar (2011) did a study on the effect of management of working capital on profitability of Indian firms and the findings showed a positive correlation between the two variables.

METHODOLOGY

This study adopted a correlational research design as the appropriate choice since the researcher's aim was to identify frequencies, trends, correlations, and categories using secondary data from various Universities. The study targeted all the public universities in Kenya which were chartered as of July 2014. CUE gave the total number of chartered public universities as eighteen. The sampling technique was census where all the chattered public universities in Kenya were used. The data used was purely secondary and therefore the researcher came up with a special and customized data collection tool which was used to collect and summarize the data into financial ratios. The main source of data was the financial statements which were audited and published by the office of the auditor general. Data was captured into the system and then analyzed using the Stata package.

FINDINGS

Influence of Liquidity Management on financial sustainability

The study sought to determine the effect of liquidity management on sustainability of public universities in Kenya. The first null hypothesis denoted, **H_{o1}:** Liquidity management does not influence financial sustainability of public Universities in Kenya. Having gone by the fixed effect model basing on the Haussmann LM test, the results were presented in Table 1 below;

Table 1: Regression Fixed Effect of liquidity management on financial sustainability

Fixed-effects (within) regression		Number of obs =	52
Group variable: UNIVERSITY		Number of groups =	13
R-sq:		Obs per group:	
within =	0.1485	min =	4
between =	0.0803	avg =	4
overall =	0.0861	max =	4
		F(1,38) =	6.62
corr(u_i, Xb) = 0.0764		Prob > chi2 =	0.0141

FS	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
LM	2.6199	1.017906	2.57	0.014	0.55926	4.680546
_cons	10.53863	1.019758	10.33	0.000	8.474237	12.60302
sigma_u	0.438485					
sigma_e	0.179306					
Rho	0.856739	(fraction of variance due to u_i)				

F test that all u_i=0: F(12, 38) = 23.78 Prob> F = 0.0000

The panels were well balanced. The result obtained from fixed effect model indicated that liquidity management accounted for 8.61% (Overall R square=0.08613) of the variation in finances of public universities in Kenya. The ANOVA was used and the F-statistic to the model shows is 6.62 which is greater than 0 implying that the estimated parameters in the model are at least not equal to zero. Thus liquidity management has an influence on finance sustainability of public universities in Kenya. The influence is significant at P<0.05.

The estimated coefficient of liquidity management is significantly not equal to zero (β=2.6199, t= 2.57,

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p-value= 0.014). The P-value is less than 0.05 which implies that the estimated coefficient is significant at 5% significance level. The estimated coefficient of liquidity management here implies that a unit increase in liquidity management would cause the levels of finances to increase by 2.6199 units. The p-value of the constant is less than 0.05 which shows a significant constant term.

FS = 10.53863+2.6199LM

The study therefore rejected the null hypothesis that liquidity management does not influence sustainability of public Universities in Kenya in terms of finances and concluded that there is an influence of liquidity management on finance sustainability. This implied that increase in liquidity management would results to increase in sustainability of public universities in Kenya.

Effect of Financial investment on financial sustainability

The study sought to determine the effect of financial investment on sustainability of public universities in Kenya. The third null hypothesis denoted, **H_{o2}:** Financial investment does not influence on financial sustainability public Universities in Kenya. Having gone by the fixed effect model basing on the Haussmann LM test, the results of the fixed effect model are presented in Table 2.

Table 2: Effect of financial investment on financial sustainability

Fixed-effects (within) regression		Number of obs	52
Group variable: UNIVERSITY		Number of groups	13
R-sq:		Obs per group:	
within =	0.1317	min =	4
between =	0.0345	avg =	4
overall =	0.0452	max =	4
		F(1,38) =	5.76
corr(u_i, Xb) = 0.0399		Prob > chi2 =	0.0214

FS	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]	
FI	0.267378	0.11139	2.4	0.021	0.0418807	0.492876
_cons	7.914584	0.025109	315.21	0.000	7.863753	7.965414
sigma_u	0.447947					
sigma_e	0.181064					
Rho	0.85956	(fraction of variance due to u_i)				

F test that all u_i=0: F(12, 38) = 24.44 Prob> F = 0.0000

The result obtained from fixed effect model revealed that financial investment accounted for 4.5% (Overall R square=0.0452) of the variation in sustainability of public universities in Kenya. The ANOVA tested the model and the F-statistic to the model is 5.76 which was greater than 0 implying that the estimated parameters in the model were at least not equal to zero. This postulates that financial investment has an influence on finances of public universities in Kenya. This influence was significant at P<0.05.

The estimated coefficient of financial investment is significantly not equal to zero (β=0.267378, t= 2.4, p-value= 0.021). The P-value was less than 0.05 which implied that the estimated coefficient was significant at 5% significance level. The estimated coefficient of financial investment here implied that a unit increase in financial investment would trigger the levels of finances to increase by 0.267378units. The p-value of the constant was less than 0.05 which showed a significant constant term.

FS = 7.914584+0.267378FI

The study therefore rejected the third null hypothesis that financial investment does not influence sustainability of public Universities in Kenya and concluded that there is an influence of financial investment on finances. This implies that increase in financial investment would results to increase in sustainability f public universities in Kenya.

The study sought to determine the effect of financial risk management on sustainability of public universities in Kenya. The fourth null hypothesis denoted, **H_{o3}:** Financial risk management has no effect on sustainability of public Universities in Kenya. Having gone by the fixed effect model basing on the Haussmann LM test, the results of the fixed effect model were presented below;

Effect of Financial Risk Management on financial sustainability

Table 3: Effect of financial risk management on financial Sustainability

Fixed-effects (within) regression				Number of obs		52
Group variable: UNIVERSITY				Number of groups		13
R-sq:				Obs per group:		
within=	0.3825			min =		4
between=	0.1154			avg=		4
overall=	0.1118			max=		4
				F(1,38) =		7.43
corr(u_i, Xb)=-0.1316				Prob> chi2 =		0.0031
FS	**Coef.**	**Std. Err.**	**T**	**P>t**	**[95% Conf. Interval]**	
FSL1	0.499908	0.130234	3.84	0.001	0.2311195	0.768697
FRM	0.13138	0.247051	0.53	0.600	-0.3785086	0.641269
_cons	7.882514	0.082267	95.82	0,000	7.712724	8.052304
sigma_u	0.462898					
sigma_e	0.128141					
Rho	0.928823	(fraction of variance due to u_i)				
F test that all u_i=0: F (12, 24) = 38.02				Prob> F = 0.0000		

The panels were well balanced and there were a total of 52 observations used in this analysis considering 13 groups of entities implying well balanced panels. The minimum, maximum and average numbers of observations per groups were all equal to 4. The result obtained from fixed effect model indicated that financial risk management accounted for 11.18% (Overall R^2=0.1118) of the variation in sustainability of finances of public universities in Kenya. The F-statistic to the model showed was 7.43 which was greater than 0 implying that the estimated parameters in the model are at least not equal to zero. This implied that financial risk management has an influence on finances of public universities in Kenya. However, the influence is significant (P=0.0031).

The estimated coefficient of financial risk management is significantly not equal to zero (β=0.13138, t= 0.53, p-value= 0.600). The P-value is greater than 0.05 which implies that the estimated coefficient is not significant at 5% significance level. The estimated coefficient of financial risk management here implies that a unit increase in financial risk management would initiate the levels of sustainability to increase by 0.13138 units. The p-value of the constant is however less than 0.05 which shows a significant constant term.

FS = 7.882514+0.13138FRM

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The study therefore rejected the null hypothesis that financial risk management does not affect sustainability of public Universities in Kenya and concluded that there is an influence of financial risk management on sustainability. This implies that increase in financial risk management would results to increase in financial sustainability of public universities in Kenya.

CONCLUSIONS AND RECOMMENDATIONS

The main objective of the study was to establish the determinants of finance sustainability of Public Universities in Kenya. Using inferential statistics and financial ratios to analyze the data, it was established that management of liquidity, financial investments and management of financial risk significantly affect sustainability. The correlation coefficient had a strong association with the variables. The study concluded that there was statistical evidence that, management of liquidity, financial investment and management of financial risk significantly affects the sustainability of Public Universities in Kenya.

Hypothesis H_{01}: liquidity management does not significantly influence sustainability of public universities in Kenya. When this hypothesis was tested the liquidity management was found to have a significant effect on sustainability, showing a positive correlation coefficient which denotes dependency. The study therefore concluded that there is statistical evidence that management of liquidity determines the sustainability of public universities in Kenya. The fixed effect was denoted by $r^2 = 0.0861$ which is translated as 8.61 % and this means that management of liquidity accounts for 8.61% of sustainability of public universities in Kenya.

Hypothesis H_{02}: Financial investment does not significantly influence finance sustainability of public universities in Kenya. When this hypothesis was tested the finances investment was found to have a significant statistical effect on the sustainability of public Universities in Kenya. This hypothesis was hence forth rejected; the study concluded that there is statistical evidence that, financial investment significantly explains the sustainability of Public Universities in Kenya. From the findings, financial investments accounts for 4.5% of the universities sustainability. The estimated coefficient stood at 0.0267378. The effects therefore were that a single unit increase in financial investment would trigger a increase of 0.2673 units of financial sustainability

Hypothesis H_{03}: financial risks management does not influence sustainability. When this hypothesis was tested the financial risk management was found to have a significant statistical effect on finance sustainability of public Universities in Kenya. The study concluded that there is statistical evidence that management of financial risk significantly explains the financial sustainability of public Universities in Kenya. This was at the rate of 11.18%.

This study further analyzed the outcome and was able to make necessary recommendations. This was done basing on the general study objective which was to establish the determinants of financial sustainability of Public Universities in Kenya. These are discussed as bellow;

From the study findings, management of liquidity is significant in attaining financial sustainability in Public Universities. The main objective of management of liquidity is to release the company's cash while cutting down on processing costs, to make this liquidity available when and where it is required, and to make the most profitable use of any cash surpluses and minimize funding costs on deficits. Therefore recommendations should be made to ensure that the cash held up in the student debts is released in good time and put to other purposes. Stringent rules and regulations to be put in place in regard to fee payment. This may include coming up with a fee payment policy with automatic deadlines that locks up students who don't pay fee and bars them from attending lectures and exams. Another recommendation would be electronic clock in systems mounted on the doors of lecture rooms so that access is only

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granted to students who have fully complied. This will enable the Universities to have ready available cash at disposal to help to meet financial obligations through cash flows, funding activities, and capital management.

The study findings suggested that financial investment plays a role in the finance sustainability of public universities in Kenya. This therefore means that the public universities have the task of ensuring that at least they make some investments whenever such an opportunity shows up. The researcher recommended that the university management board come up with an investment policy that allows for a plough-back into some project that will yield a return for future use. Further recommendations are made to the government and the ministry of education to allow provision for capitation funds to cushion those straining financially. This study also recommends that proper sensitization be done to inform the top management on the importance of Investment as a key need. There is need to have investment policy developed and ministry of Higher Education to assist Public Universities to venture into new innovation and diversification of investment. The Kenyatta University has taken this route and this ought to be emulated by the other universities in order to mitigate against financial strains.

The raw data collected from the universities show a high rate of student debtors as a result of default in fee payment. This has exposed these universities to high risks especially credit risk. This study therefore recommends that the credit policy be strictly adhered to and also be revised where need be to minimize on credit risks. When a borrower shows signs of defaulting on a debt by failing to make required payments, then there is a possibility of a credit risk. Necessary but immediate action has to be taken immediately. The study further recommended establishment of financial risks assessment framework that will guide in risk management. A clear credit policy should be put in place to guide in the management of credit risks arising from defaulting students.

The study recommends prudent liquidity management, employing diversified financial investments strategies and enhancing financial risk management in public universities. The policy recommendations and guidelines suggested are as bellow;

The government should consider an upward review of the monthly capitation for these universities. Most of them have outgrown their monthly recurrent grants due to increased number of staffs and high student capacity. The funds barely meet their operational costs due to escalated budgets arising from increased demand.

The study also recommended the government to consider revising the HELB loan issued to students so as to sufficiently cater for the tuition needs and general upkeep of students. This will reduce the student debtors and minimize on credit risks arising from high default rate.

Public universities are exposed to equal opportunities and threats as the private Universities. They therefore need to consider diversifying its financial sources and incorporate income generation activities that lead to value creation, be more innovative in terms of financial investments by utilizing research and innovation to come up with new areas of investment through new technologies.

Areas for further Research

The study looked at the determinants of financial sustainability of Public Universities in Kenya and used the correlation research design. Need for further research is evident so as to explore other research designs and compare the outcome and achieve a more comprehensive conclusion. The variables of the study; management of liquidity management, financial investments and management of financial risk, influenced the finance sustainability of public universities. There could be other factors that have an effect on sustainability yet this study could not cover all of them. There is need to look at these other possible factors in a more broad way that touches on a

wider area maybe included even the un chattered universities.

All the variables of the study were quantitative in nature and purely financial factors, there was no qualitative variable meaning the topic wasn't exhaustively looked at. This study therefore recommend further studies that can look at other aspects besides those financial in nature and come up with findings than can add to the databank and fill any possible gaps. The study majored only on the public universities and therefore there is need for a study to be done on the private university so as to compare and come with a comprehensive finding on sustainability in terms of finances of institutions of higher learning.

REFERENCES

Abor, J. (2005). Effect of capital structure on profitability: An empirical analysis of listed firms inGhana. *The Journal of Risk Finance, 6*(5), 438-445.

Adelino, M., Ma, S., & Robinson, D. (2017). Firm age, financial investments and job creation. *The Journal of Finance, 72*(3), 1-55.

Ahmadabadi, M. R., Mehrabi, E., & Yazdi, A. F. (2013). Impact of Working Capital Management on the Performance of the Firms Listed on the Tehran Stock Exchange. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 3*(3), 352- 364.

Almazari, A. A. (2014). The relationship between working capital management and profitability: Evidence from Saudi cement companies. *British Journal of Economics, Management & Trade, 4*(1), 146-157.

Amanda, W. (2015). Challenges in achieving non-profit sustainability: *A study of the social Service non-profit organization in the central Okanagan.*

Azinfar, K., & Khalili, M. R. (2013). The study of factors affecting working capital of pharmaceutical companies accepted in Tehran stock exchange. *World of Sciences Journal*, *1*(14), 66-67.

Bowman, W. (2011). Financial capacity and sustainability of ordinary nonprofits. *Nonprofit Management and Leadership*, *22*(1), 37-51.

Creswell,J., (2014). Qualitative, quantitative, and mixed methods approaches: Research Design (4th ed.). London: *SAGE Publications, India Pvt. Limited.*

Frost, J. (2019). An intuitive guide for using and interpreting Linear Models

Frankfort, N. C., & Nachmias, D. (2012). *Research methods in school: Social sciences* (5th ed.). New York: St Martin's Press.

Gatsi, J. G. (2016). Empirical note on debt structure and financial performance in Ghana. E-Book,

Gibson, A. B. (2012). Determinants of operational sustainability of micro finance institutions in Kenya.

Gill,A., & Biger,N.(2010). Relationship between Working Capital Management and Profitability. United States.

Government of Kenya (2013). Presidential task force report on Parastatal Reforms. *Nairobi: Government Press.*

Harvey, J. (2008). Management accounting: *Risk and control strategy. Oxford: Elsevier.*

Innocent, B. (2016). Financing and financial sustainability of micro-financial institutions. *A*

Institute of Chartered Accountants in England and Wales. (2004). *Sustainability: The role of Accountants*.London: Institute of Chartered Accountants in England and Wales.

Karanja, J., G., & Karuti, J. K. (2014). Assessment of factors influencing financial sustainability of non-governmental organizations in Isiolo County, Kenya. *International Journal of Economics, Commerce and Management United Kingdom, 2*(9),14-27.

Karvonen, V. (2010). Marketing investment courage and financial performance. A study of profiles and financial implications among Finnish firms. *Unpublished PhD Dissertation, Aalto: Aalto University.*

Kimando, L. N., Kihoro, J. M., & Njogu, G. W. (2012). Factors influencing the sustainability of Micro-finance institutions in Murang'a Municipality. *International Journal of Business and Commerce, 1*(10),21-45.

Kithinji, C., Gakuu, C., & Kidombo, H. (2017). Resource Allocation, Evaluation Capacity Building M&E Results Utilization among Community based Organizations in Meru County in Kenya: *European Scientific Journal, 13*(16),18-57.

Kothari, C., & Garg, G., (2014). Research methodology. New Delhi: *New Age International Publishers Ltd.*

Kothari, C., R. (2013). Research Methodology-Methods and Techniques (3rd ed.). New Delhi: New Age International Publishers Ltd.

Leon, C., & Charl, K. (2016). Financial sustainability of South Africa municipalities. Cresta, SouthAfrica: South Africa Publication.

Mohsen T.,& Dennick,R. (2011). Making Sense of Cronbach's Alpha. *International Journal of Medical Education.*; *2*(2), 53-55

Mugenda, O., & Mugenda, A. (2003). Research methods, quantities and qualities approaches. Nairobi: Act Press.

Mujahid, M., & Akhtar, K. (2014). Impact of capital structure on firms financial sustainability and shareholders wealth: Textile sector of Pakistan. *International Journal of Learning & Development, 4*(2),5296-5511.

Mutinda, S. M., & Ngahu, S. (2016). Determinants of financial sustainability for non-governmental organizations in Nakuru County, Kenya. *Journal of Business and Management, 18(*9), 81-88.

Ndege, E., Mohamed, S., & Rukangu, S. (2016). Management factors influencing financial Sustainability of youth group projects. *Journal of Advanced Research in Engineering and Management, 2*(4),21-43.

Ng'ang'a, A. N., & Kibati, P. (2016). Determinants of financial sustainability in private middle level colleges in Nakuru County, Kenya. *International Journal of Economics, Commerce and Management, 4*(10),356-380.

Ngoe, O. A (2012). Factors influencing financial sustainability of enterprises funded under the Youth enterprise development fund program in Mombasa County. *Unpublished MSc research project, Nairobi: University of Nairobi.*

Nyamsogoro, G. D. (2010). Financial sustainability of rural microfinance institutions in Tanzania.

Olweny, T., Namusonge, G. S., & Onyango, S. (2013). Financial attributes and investor risk tolerance at the Nairobi Securities Exchange: A Kenyan Perspective. *Asian Social Science Journal, 9*(3*),* 138-147.

Organization for Economic Co-operation and Development (2014).Guidelines on the governance of state-owned enterprises for Southern Africa.

Padachi, K., Howorth, C., & Narasimhan M. S. (2012). Working capital financing preferences: The case of Mauritian manufacturing small and medium sized enterprises (SMEs). *Asian Academy of Management Journal of Accounting and Finance, 8*(1),125-157.

Pereira, A. M., & Roca-Sagales, O. (2010). Infrastructure and private sector performance in Spain. *Journal of Policy Modeling, 23*(4),371-384.

Polycarp, W., & Tabitha, N. (2016). Effect of working capital management on the financial performance of listed manufacturing firms in Kenya. *Asian Journal of Business and Management*, *4*(5), 195-208.

Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and Corporate performance of manufacturing sector in Pakistan. *International Research Journal of Finance and Economics, I* (47),1450-2887.

Rao, J. O. (2013). Effect of funding sources on financial sustainability of water sector institutions in Kenya: University of Nairobi.

Rehn, E. (2012). Effects of working capital management on company profitability: An industry-wise study of Finnish and Swedish public companies *Unpublished PhD dissertation, Helsinki: University of Helsinki.*

Tran, H., Abbott, M., & Jin-Yap, C. (2017). How does working capital management affect the p profitability of Vietnamese small-and medium-sized enterprises? *Journal of Small Business and Enterprise Development, 24*(1),2-11.

Wambugu, F. W., & Ngugi, J. W. (2012). Factors influencing sustainability of micro-finance Institutions in Kenya: A case of Kenya Women Finance Trust. *International Journal of Innovative Research and Development, 1*(11),519-537.

Williams, K. S. (2014). Non-profit financial sustainability. *Unpublished PhD Dissertation, Canada: Royal Roads University.*

World Bank, (2014). Corporate governance of state-owned enterprises: A Toolkit / Publishing and Knowledge Division. Washington, DC: The World Bank.

Yu, H., Jiang, S., & Land, K. C. (2015). Multicollinearity in hierarchical linear models. *Social science research*, *53*, 118-136.