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EFFECT OF DEBT FINANCING ON FINANCIAL PERFORMANCE IN PUBLIC UNIVERSITIES IN NAIROBI COUNTY, KENYA

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ABSTRACT

Public universities in Kenya face persistent financial pressures arising from inadequate funding, rising operational costs and increasing demand for infrastructure and academic services. Debt financing has therefore become an important mechanism for mobilising resources for capital development and institutional operations. However, excessive or poorly managed borrowing may constrain liquidity and undermine financial stability. This study examined the effect of debt financing on financial performance in public universities in Nairobi County, Kenya. Specifically, the study sought to determine the effect of debt financing on infrastructure development and examine its effect on liquidity. The study focused on the University of Nairobi, Technical University of Kenya and Multimedia University of Kenya, with administrators and finance personnel as the key respondents. The study was significant to university management, governing councils, policymakers and other stakeholders by providing evidence to support sustainable financing and debt-management decisions. The study was guided by the Pecking Order Theory, which explains institutional financing preferences and the use of debt when internal financing is inadequate. A descriptive survey design was adopted. Primary data were collected using structured questionnaires, while secondary financial information complemented the survey data. Descriptive statistics and inferential analysis using Pearson correlation and simple linear regression were applied. The findings showed strong positive relationships between debt financing and infrastructure development ($r=0.681$) and between debt financing and liquidity ($r=0.724$). Debt financing explained 46.4% of variation in infrastructure development and 52.4% of variation in liquidity, with both regression models statistically significant at ($p<0.001$). The study concludes that debt financing significantly influences both infrastructure development and liquidity. It recommends prudent borrowing, rigorous financial appraisal, effective debt monitoring, favourable borrowing terms and integration of debt decisions into broader institutional financial planning.

Keywords: Debt Financing, Financial Performance, Infrastructure Development, Liquidity, Public Universities

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BACKGROUND OF THE STUDY

Financial strength is extremely important for institutions of higher education so that they invest into their infrastructure, update and improve their programmes, and keep running their operations. Climate of high numbers of enrollments and growing costs urges universities to turn to other ways of obtaining funds for their activities. Debt financing is one of the financing strategies that can enable universities to deal with capital-intensive projects and, most importantly, infrastructure projects, nevertheless, repaying of the debt may put strain on the financial resources in the future.

In Kenya, public universities have been faced with rising demand for higher education coupled with limited funding for institutions. Data sourced from the Universities Fund indicates that student enrollments rose from 233,218 in 2018/2019 to 356,188 in 2022/2023, whilst the share of financing required through the Differentiated Unit Cost decreased from 66.4% to 48.11% over the same period, according to data from the Universities Fund (2025). The growing need for funding has led to the need for other sources of finance for development. Kathomi et al. (2022) show that long-term debt is statistically significant and positively related to sustained financial viability among universities in Kenya despite short-term debt and trade credit not having a significant effect. Recent evidence suggests that unstable and insufficient funding has played a role in liquidity problems and increases in institutional debts among universities in the public sector (Kabisa & Wanyonyi, 2026). In light of this situation, the examination of the role played by debt financing in supporting the development of infrastructure and influencing liquidity among public universities in Nairobi County is crucial.

Statement of the Problem

Kenyan public universities are facing financial strain which limits their capacity to remain operational as well as invest in infrastructure. The University of Nairobi's research published in 2024 confirms that financial sustainability is a big issue for higher education institutions in Kenya due to limited public funding and the need to seek alternative sources of financing. Though the use of financial instruments through borrowing ensures money for capital intensive infrastructure projects, it creates debt obligations limiting liquidity on the part of institutions. Given the general situation in terms of debt financing in Kenya, it has become evident that the associated risks of borrowing should be prioritized (National Treasury, 2024). Studies conducted on public universities in Kenya have tended to focus on various aspects of financial sustainability, including the generating of revenue streams and the control of finances (Absalom, 2024; Mbugua et al., 2025; Yusuf, 2023). In spite of this, not many studies appear to have examined the subject of debt financing as both applicable to infrastructure development and liquidity position at public universities in Nairobi County. This creates an opportunity that the present study aims to explore further through investigating the effect of debt financing on infrastructure development and the latter's effect on liquidity position in university.

Objectives

- To determine the effect of debt financing on infrastructure development in public universities in Nairobi County, Kenya.
- To examine the effect of debt financing on liquidity in public universities in Nairobi County, Kenya.

Scope

The research concentrated on the impact of borrowing for financing on financial results in public universities located in Nairobi County in the Republic of Kenya. The study paid attention to two out of the three possible dimensions, namely infrastructure development and liquidity. The research examined public universities in Nairobi County, namely Nairobi University, Technical University of Kenya and Multimedia University of Kenya. The sample of respondents was made up of university managers, directors of finance, deputy directors of finance and accountants involved in financing decisions of the universities. To collect necessary data, the study used various financial information and structured questionnaire.

Significance

The research is vital to college administration, policymakers, and authorities responsible for financing decisions as it yields necessary information on the impact of debt financing on infrastructure development and organisational liquidity. The results can serve as a basis for finances to make wise borrowing choices, determine repayment possibilities, and manage debts. Besides, the research has a significant impact on academic knowledge as it examines a narrow scope of existing studies on the specific link between debt financing and performance in Kenyan colleges, namely, in Nairobi County.

LITERATURE REVIEW

Debt financing is one of the crucial sources of external funding for universities when it comes to enhancing state funding as well as self-generated income. In higher education, borrowing is used for capital-intensive investments including construction of buildings, laboratories, information technology infrastructure, and other institutional facilities. The financial sustainability of universities thus depends not only on the availability of debt but also on its cost, maturity, and management Magutu et al. (2024) underline the need for universities to use diversified and sustainable financing models.

Debt financing and infrastructure development. The use of debt is advantageous in constructing infrastructure because it enables the universities to execute important capital projects without waiting for internally generated funds. Particularly important is the situation when the universities experience a surge in students and hence need to create new facilities for teaching, accommodation, etc. However, borrowing for infrastructure purposes calls for the assessment of expected benefits for the institution, its capacity to repay and the costs involved in financing. In this light, it should be noted that debt may support the growth of an institution in case it is used on efficient and well-aligned capital investments, while excessive borrowing may lead to resource constraints for the other functions of universities.

Debt financing and liquidity. Liquidity denotes the capability of an institution to settle its liabilities in a timely manner, as stated by Ngugi (2025). Financial problems in Kenyan public universities have had a major impact on their ability to pay debts and carry out their tasks. According to Ngugi (2025), funding mechanisms are closely linked to liquidity problems in Kenyan public universities, thus accentuating the need for research on alternative sources of funding for financial capacity of the institutions. Recent findings show that late funding and unfulfilled obligations can lead to heavy cash flow problems (Kibabii University, 2025).

Moreover, the literature shows that debt financing can help investments in infrastructure but also exert liquidity pressure. Nonetheless, there is not much evidence to support the two phenomena simultaneously in public universities in Nairobi County, thereby making this study relevant.

Theoretical Review

The Trade-Off Theory (Anchor Theory). The Trade-Off Theory serves as the basis for this study because it frames debt financing as a trade-off between the advantages and disadvantages of borrowing. The idea behind the theory is that an organization can reap benefits from debt if the money borrowed is used to finance productive activities; however, in cases when the debt level is too high, the costs associated with financing and the possibility of suffering financial distress increase. This view applies specifically to public universities because debt allows them to gain funds for infrastructure development, which on the one hand, creates a way to pay for borrowing, but on the other hand imposes additional limitations on liquidity. According to the latest research conducted among universities in Kenya, the use of long-term debt is beneficial for maintaining financial sustainability, though the number of the debt itself plays an important role for the ability of the university to manage its finances.

Pecking Order Theory (Supporting Theory). Pecking Order Theory backs the study as it sheds light on the financing preferences of institutions in funding investments. This theory suggests that businesses prefer using internal funds first followed by debts before looking into other alternative financing options. The theory

applies in the case when universities have funding deficits and are trying to understand whether borrowing is required for funding infrastructure. Naranjo et al. (2022) show that the financing decisions and investment behaviour can be understood through Pecking order view, especially in cases where organisations have different funding abilities.

METHODOLOGY

The study adopted a descriptive survey research design, which was appropriate for systematically collecting quantitative information on debt financing, infrastructure development and liquidity among public universities. Survey designs facilitate collection of comparable data from defined populations using structured instruments (Walters, 2021). The target population comprised 148 university administrators, finance officers, assistant finance officers and accountants from the University of Nairobi, Technical University of Kenya and Multimedia University of Kenya. A sample of 108 respondents was selected using proportional allocation across the three universities. A structured questionnaire was the primary data-collection tool, supplemented by relevant secondary financial information. Questionnaires were distributed through electronic and physical channels, with follow-ups undertaken to improve response rates. Completed questionnaires were checked for completeness, coded and analysed using SPSS, employing frequencies, percentages, correlation and regression analysis. Ethical considerations included informed consent, confidentiality, protection of respondents' identities, institutional approval and academic integrity. These procedures are consistent with recommended practices for survey validity, data collection, analysis and ethical conduct (Gupta et al., 2020; Walters, 2021).

FINDINGS

The following is the finding of the study

Effect of Debt Financing on Infrastructure Development

The first objective examined the effect of debt financing on infrastructure development in public universities in Nairobi County, Kenya. Respondents were asked to indicate their level of agreement with statements concerning the contribution of debt financing to infrastructure and capital development and the alignment of debt-financed projects with long-term institutional priorities. The findings are presented in Table 1.

Table 1.

Debt Financing on Infrastructure Development

Statement	SA		A		N		DA		SDA		Total
	N	%	N	%	N	%	N	%	N	%	
Debt financing has helped the university undertake essential infrastructure or capital development projects.	35	35	64	64	1	1	0	0	0	0	100
Debt-financed projects are aligned with long-term institutional goals and priorities.	28	28	67	67	2	2	3	3	0	0	100

Source: Research Data (2026)

The results shown in Table 1 reveal that people have a very positive opinion about debt financing which is very useful in pursuing infrastructural development. When respondents were asked about the function of debt financing in executing important infrastructure or capital development programs, 35% of the respondents strongly agreed, while 64% agreed, thus a total of 99%. Only 1% of respondents stated that they do not agree, while none of the respondents disagreed or fully disagreed. Therefore, it can be concluded that debt financing is regarded heavily as a mechanism that can help in infrastructural and capital development projects in public higher educational institutions.

In the same vein, 28% of the individuals surveyed strongly agreed and 67% concurred that debt-funded initiatives were in keeping with the objectives and priorities of their organizations. The total approval was thus 95%, with 2% being indifferent while 3% disagreed. There were no respondents who expressed disagreement with the question. This indicates that the population in the survey perceives debt financing investment is in line with the long-term priorities of institutions.

The descriptive findings suggest that debt financing is perceived as contributing to infrastructure and capital development, as well as providing funding for projects in line with institutional priorities by the respondents. Hence, descriptive evidence in support of the first objective is available. However, the existence of statistically significant effects of debt financing on infrastructure development has to be proven further with inferential analysis.

Effect of Debt Financing on Liquidity

The second objective examined the effect of debt financing on liquidity in public universities in Nairobi County, Kenya. Respondents were asked to indicate their level of agreement with statements concerning debt management practices, borrowing terms and institutional liquidity. The findings are presented in Table 2.

Table 2

Debt Financing and Liquidity

Statement	SA		A		N		DA		SDA		Total
	N	%	N	%	N	%	N	%	N	%	
Poor debt management practices have negatively impacted our institution's liquidity	26	26	72	72	0	0	2	2	0	0	100
High-interest loans or short-term debt commitments compromise the university's financial health.	47	47	6	6	0	0	0	0	0	0	100

Source: Research Data (2026)

The findings in Table 2 indicate a strong perception that debt management practices influence institutional liquidity. Regarding poor debt management practices, 26% of respondents strongly agreed and 72% agreed that such practices had negatively impacted institutional liquidity, giving a combined agreement of 98%. Only 2% disagreed, while none of the respondents were neutral or strongly disagreed. This indicates that the overwhelming majority of respondents perceived poor debt management as a factor that can constrain the liquidity position of public universities.

Correspondingly, 47% of participants were either strongly in favor or in agreement that high-interest loans or short-term loans constitute a risk to the university's finances, with the overall level of agreement being 94%. While only 6% remained neutral, nobody disagreed or opposed the view altogether. Thus, this supports the idea that the type and terms of borrowing have significant implications for the financial well-being and liquidity of public universities.

Moreover, the results highlighted that participants connected poor management of debts, high cost of borrowing, as well as short-term debt obligations with pressure on financial liquidity and health of the institution. The above-mentioned outcomes provide descriptive evidence confirming the second aim. Nevertheless, a separate inferential analysis utilizing correlation and regression statistics establishes the significance and magnitude of the influence of debt finance on liquidity.

Inferential Statistics on the Effect of Debt Financing on Financial Performance

To establish whether debt financing had a statistically significant effect on the selected dimensions of financial performance, namely infrastructure development and liquidity, Pearson Product-Moment correlation and simple linear regression analyses were conducted. Debt financing was treated as the independent variable,

while infrastructure development and liquidity were treated as the dependent variables. The analysis was conducted at the 5% level of significance. The results are presented in Table 3.

Table 3

Inferential Statistics on the Effect of Debt Financing on Infrastructure Development and Liquidity

Dependent Variable	Pearson's r	R ²	F-statistic	β	t-value	p-value	Decision
Infrastructure Development	0.681	0.464	84.83	0.681	9.21	<0.001	Reject H ₀₁
Liquidity	0.724	0.524	107.95	0.723	10.39	<0.001	Reject H ₀₂

Source: Research Data (2026)

The results in Table 3 indicate a strong positive and statistically significant relationship between debt financing and infrastructure development. The Pearson correlation coefficient of ($r = 0.681$) indicates a strong positive association, suggesting that higher levels or more effective use of debt financing are associated with improved infrastructure development in public universities. The coefficient of determination ($R^2 = 0.464$) indicates that approximately 46.4% of the variation in infrastructure development can be statistically explained by debt financing, while the remaining 53.6% may be attributed to other factors not included in the model.

The regression results further show that debt financing significantly predicts infrastructure development, ($F(1,98) = 84.83$, $p < 0.001$). The standardized regression coefficient ($\beta = 0.681$) indicates a positive effect of debt financing on infrastructure development. The corresponding (t)-value of 9.21 and significance level below 0.001 confirm that the effect is statistically significant at the 5% level. Therefore, H₀₁ is rejected, indicating that debt financing has a statistically significant effect on infrastructure development in public universities in Nairobi County, Kenya.

Regarding the second objective, the results confirm that the positive relationship between debt financing and liquidity is even stronger, as evident from the Pearson correlation coefficient ($r=0.724$). The coefficient of determination ($R^2=0.524$) indicates that around 52.4% of the change in liquidity can be explained by debt financing. This shows that debt financing plays a significant role regarding liquidity among public universities, though about 47.6% of the variance stems from other variables not accounted for in the model.

The regression model for liquidity was statistically significant, ($F(1,98) = 107.95$, $p < 0.001$). The standardized regression coefficient ($\beta = 0.724$) demonstrates a positive effect, while the (t)-value of 10.39 confirms that the relationship is statistically significant. Consequently, H₀₂ is rejected, indicating that debt financing has a statistically significant effect on liquidity in public universities in Nairobi County, Kenya.

CONCLUSION AND RECOMMENDATIONS

The findings of this study conclude that debt financing remains a viable source of funding for public universities in Nairobi, Kenya, with considerable implications for infrastructure growth and institutional liquidity. The descriptive results suggest that the participants in this study viewed debt financing positively as it has enabled many universities to carry out a number of critical infrastructure and capital projects. In this regard, 99% of the participants indicated that debt financing contributed positively in enabling universities to implement critical infrastructure and capital projects as supported by 95% of the participants agreeing that debt-funded projects were in line with the needs and aspirations of the institutions. Based on these findings, it appears that borrowing allows universities to have the necessary financial capability for undertaking significant investment projects that may otherwise lack funding through other forms of financing.

The inferential findings further reinforce this conclusion. Debt financing demonstrated a strong positive relationship with infrastructure development ($r = 0.681$), with the regression model explaining 46.4% of the

variation in infrastructure development ($R^2 = 0.464$). The model was statistically significant, ($F(1,98) = 84.83$, $p < 0.001$), while the positive regression coefficient ($\beta = 0.681$) and significant (t)-value ($t = 9.21$, $p < 0.001$) indicate that debt financing has a statistically significant effect on infrastructure development. Consequently, the first null hypothesis was rejected.

The research has also determined that borrowing has important influences on liquidity of higher educational institutions. Even though loans produce funds for various levels of operations and investment activities, the process of acquiring debt and its conditions is crucial for ensuring financial health. The data revealed that as many as 98% of surveyed respondents were convinced that improper handling of debt jeopardizes liquidity of an organization while 94% of them affirmed that excessively high rates of loans or short-term debt obligations put their universities in a dangerous position. The inferential results similarly revealed a strong positive relationship between debt financing and liquidity ($r = 0.724$). Debt financing explained 52.4% of the variation in liquidity ($R^2 = 0.524$), and the regression model was statistically significant, ($F(1,98) = 107.95$, $p < 0.001$). The positive regression coefficient ($\beta = 0.724$) and significant (t)-value ($t = 10.39$, $p < 0.001$) led to rejection of the second null hypothesis.

Additionally, the results imply that debt financing plays a significant role in improving the financial efficiency of public universities as it may help with infrastructure development and provision for the liquidity of this kind of educational institution. Nevertheless, the research findings point out that the financial effects of borrowing are connected with the practices employed in the management of debt, the conditions of debt financing, and the obligations concerning repayment of debt. Thus, it should be stated that debt financing should not be treated only as a source of financial resources but rather as a financial obligation that should be considered in terms of affordability, returns, capacity to repay it, and effect on liquidity.

Considering the conclusions come to in the study, it is recommended that state universities reinforce their frameworks for managing debts, in a way that the decision-making process concerning loans adheres to the priorities, affordability and repayment abilities. The study has established that funding through debts has a significant effect on the development of the infrastructure of various kinds, and, thus, the management of universities should use debt financing wisely when implementing necessary and proper capital projects which aim for the long-term success of the institution.

The study also suggests that institutions of higher education should carry out thorough financial evaluations before agreeing to add debt. These evaluations should take into account the amount being borrowed, the cost of borrowing, the conditions under which repayment will occur, the current state of obligations and the effect of debt servicing on the liquidity of the institution. Such evaluations are once more indicated by the fact that study findings show that unwise debt management, costly borrowing and short-term debts create the impression of poor financial health of an institution.

Moreover, university finance officials must put in place timely mechanisms that monitor debt levels. Continuous monitoring of their due debts, cash flows, liquidity ratios as well as any upcoming repayment obligations will help management recognize all possible financial pressures well ahead of them threatening crucial university operations. It is also necessary to ensure that the monitoring is included into the process of periodic financial reporting and institutional budgeting.

The study also proposes that public universities intensify their negotiations with lenders and other funding entities in order to gain advantageous borrowing terms, such as reasonable interest rates, affordable payback periods and suitable repayment arrangements. The governing councils of these institutions should oversee the process of decision making concerning borrowing, making sure that the amount of debt incurred conforms with the financial capabilities of the institution and its strategic goals.

In conclusion, it is imperative for regulatory authorities to enhance the financial regulations governing public universities' borrowing activities and push for open and transparent reporting of debt obligations. The councils

of various universities as well as senior management must participate in effective institutional financial planning by incorporating taking loans in the overall financial planning process instead of managing it as an independent financing activity, which can bring in productive results with the borrowing funds being used for meaningful infrastructure investments and maintaining the necessary liquidity to ensure smooth operation of the academic and administrative activities.

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