
**RESOURCE UTILIZATION, FINANCIAL EFFICIENCY INDICATORS
AND EFFECTIVE GOVERNANCE OF UNIVERSITIES**

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ABSTRACT

The study examined efficiency indicators namely resource utilization and financial efficiency and effective governance in public universities in Edo State, Nigeria. Effective. The study was guided by 2 research questions and 2 hypotheses. A correlational research design was employed for the study. The population consisted of 1,480 lecturers in public universities in Edo State. A sample of 278 lecturers, representing 18.78% of the total population, was selected using stratified random sampling. The instrument used for data collection was a structured questionnaire titled “Efficiency Indicators and Governance Rating Scale” (EIGRS), developed by the researcher. The face and content validity of the instrument were determined by an expert in Measurement & Evaluation. The reliability of the instrument was confirmed using the Cronbach Alpha method, yielding reliability coefficients of 0.83 and 0.87 for the two subscales: Resource Utilization and Financial Efficiency and Effective Governance, respectively. The questionnaire was administered by the researcher with the assistance of three trained research assistants. A total of 278 completed copies were used for data analysis, using Pearson coefficient of determination and inferential statistics such as Pearson Product Moment Correlation. The two hypotheses were tested at 0.05 level of significance. The findings revealed that a significant positive relationship between resource utilization, financial efficiency and effective governance of public universities in Edo State, Nigeria. Based on these findings, it was recommended amongst others that university Resource Management Departments and Administrative Heads should optimize the use of available resources by adopting modern management systems and conducting regular audits to ensure efficiency and minimize waste.

INTRODUCTION

Effective governance in the university system refers to the processes, structures, and mechanisms that ensure institutions operate efficiently, transparently, and in alignment with their academic, financial, and administrative objectives. It involves a well-defined decision-making framework that includes various stakeholders such as university administrators, lecturers, students, and government bodies, fostering accountability and responsiveness (de Boer et al., 2021). Governance in universities is characterized by strategic planning, regulatory compliance, resource allocation, and institutional autonomy, all of which contribute to the attainment of educational excellence. The effectiveness of governance is determined by how well these elements interact to create a conducive environment for learning, research, and innovation while addressing emerging challenges within higher education (Agyemang et al., 2023). Ensuring a functional governance system is vital for achieving institutional sustainability and competitiveness in the global academic landscape.

The importance of effective governance in the university system cannot be overstated, as it plays a crucial role in enhancing institutional performance, academic integrity, and financial sustainability. A well-governed university fosters transparency and accountability, ensuring that decision-making processes are participatory and inclusive, thereby reducing conflicts and inefficiencies (Salmi & Bassett, 2022). Effective governance also enhances resource management by ensuring that financial, human, and infrastructural resources are utilized optimally to support teaching, research, and community engagement. Furthermore, it promotes innovation and adaptability, enabling universities to respond to societal needs, technological advancements, and policy changes (Teixeira & Koryakina, 2020). These benefits points to the necessity of strengthening governance structures to enhance institutional effectiveness and ensure long-term sustainability in both public and private universities.

Despite the recognized importance of effective governance in the university system, numerous public and private universities in Nigeria exhibit significant governance deficiencies. According to the National Universities Commission (NUC), as of 2019, Nigeria had 170 universities, comprising 43 federal, 48 state, and 79 private institutions. This rapid expansion has often outpaced the development of robust governance frameworks, leading to systemic challenges (NUC, 2019). Research indicates that Nigerian universities face issues such as inadequate funding, poor leadership, and ineffective teaching and learning processes, all of which are symptomatic of governance failures.

Statement of the Problem

The Nigerian university system, especially the public institutions, faces significant challenges in achieving effective governance. The National Universities Commission (NUC) has identified critical issues such as poor governance, academic corruption, and inadequate funding as major impediments to the advancement of tertiary education in the country. These governance deficiencies have led to widespread student dissatisfaction, manifesting in frequent unrests and protests. Research indicates that student crises and violence are prevalent problems confronting higher education in Nigeria, often stemming from perceived administrative inefficiencies and lack of responsiveness to student needs.

In public universities, the reliance on government funding has resulted in grossly inadequate annual budgetary allocations and releases, hindering the effective discharge of core mandates such as teaching, research, and community service. This financial strain contributes to dilapidated infrastructure, outdated curricula, and a general erosion of university autonomy. Private universities, while less dependent on government funding, are not immune to governance challenges. Issues such as corruption and mismanagement are pervasive, with reports of financial impropriety, academic fraud, and unethical practices undermining institutional integrity. The Committee of Vice-Chancellors of Nigerian Universities (CVCNU) has lamented that inadequate funding remains one of the major challenges militating against the effective growth and global ranking of public universities in Edo State. These systemic governance issues have far-reaching implications, including compromised academic standards, diminished research output, and a decline in the overall quality of education. Addressing these challenges necessitates a comprehensive examination of efficiency indicators and their potential role in enhancing governance structures within Edo State universities. By identifying and implementing key efficiency metrics, institutions can develop strategies to improve administrative processes, optimize resource allocation, and ultimately achieve more effective governance. In view of this, the problem of this study is, how does efficiency indicators relate to effective governance of public and private universities in Edo State?

Research Questions

The following research questions guided the study:

1. What is the relationship between resource utilization and effective governance in public Universities in Edo State?

2. What is the relationship between financial efficiency and effective governance in public Universities in Edo State?

Hypotheses

The following null hypotheses guided the investigated:

1. There is no significant relationship between resource utilization and effective governance in public Universities in Edo State.
2. There is no significant relationship between financial efficiency and effective governance in public Universities in Edo State.

Literature Review

Resource Utilization and Effective Governance in Universities

The intricate relationship between resource utilization and effective governance in universities has garnered significant scholarly attention in recent years. Effective governance in higher education institutions encompasses the frameworks, policies, and processes that guide decision-making, strategic planning, and resource allocation. Efficient resource utilization refers to the optimal deployment of financial, human, and physical assets to achieve the institution's academic and administrative objectives. The synergy between these two elements is pivotal in enhancing institutional performance, academic excellence, and sustainability.

A recent study by Alsharari and Youssef (2022) underscores the positive impact of good governance on the performance of higher education institutions. The researchers found that effective governance leads to improved accountability, participatory processes, inclusivity, and better resource management. They advocate for the enhancement of organizational culture as a precursor to implementing effective governance practices, suggesting that a robust governance framework is instrumental in optimizing resource utilization.

The concept of universities as anchor institutions highlights their role in community engagement and economic development. A comprehensive analysis by the Netter Center for Community Partnerships (2014) explores the governance structures necessary for universities to effectively integrate local engagement into their core functions. The study emphasizes that such integration requires governance models that promote efficient resource utilization, aligning institutional assets with community needs to foster mutual growth and development. In the context of financial sustainability, Massy (2020) discusses the critical importance of resource management in higher education. He argues that balancing financial and academic

considerations is essential for the long-term viability of institutions. Effective governance plays a crucial role in this balance by ensuring that resource allocation aligns with strategic priorities, thereby enhancing institutional performance and sustainability.

The optimization of resource allocation is further explored by Quad (2023), which highlights the need for higher education institutions to adopt strategic partnerships aimed at streamlining processes and maximizing impact. The article suggests that effective governance structures are necessary to facilitate such partnerships, enabling institutions to do more with less by leveraging resources efficiently. Challenges to effective university governance have been identified as significant barriers to optimal resource utilization. A report by the Hoover Institution (2023) examines major challenges in university governance, identifying areas needing improvement to enhance organizational performance. The report suggests that addressing these challenges through improved governance structures can lead to more effective resource utilization, thereby improving overall institutional performance.

The role of shared governance in balancing unit and central authority is crucial for effective resource utilization. An article by the Online Learning Consortium (2023) discusses how robust shared governance mechanisms with strong faculty involvement ensure that diverse perspectives and deep institutional knowledge are embedded into decision-making processes. This inclusive approach facilitates the efficient allocation and utilization of resources, aligning them with the institution's strategic goals. In the realm of technological advancements, Sutjarittham (2021) explores the modeling and optimization of resource usage in an IoT-enabled smart campus. The study highlights how effective governance frameworks are essential for integrating technology into campus operations, leading to improved resource utilization and enhanced institutional performance.

The introduction of performance-based research funding systems (PBRFS) has also been shown to influence resource utilization in universities. Abramo and D'Angelo (2021) analyze the responses of Italian universities to PBRFS, finding that such systems can lead to improved research productivity and more efficient resource allocation when supported by effective governance structures.

Financial Efficiency and Effective Governance in Universities

The relationship between financial efficiency and effective governance in universities has been a subject of extensive scholarly debate, particularly in the context of increasing financial constraints and the growing demand for accountability in higher education institutions. Financial efficiency refers to the optimal allocation and utilization of financial resources to achieve institutional goals, ensuring sustainability and cost-effectiveness in operations.

Effective governance, on the other hand, encompasses leadership, decision-making, strategic planning, and policy implementation that enhance institutional performance and accountability. Universities that achieve financial efficiency are better positioned to foster effective governance by ensuring transparent financial management, equitable resource distribution, and strategic investments that drive academic and infrastructural development (Agyemang et al., 2022). The interplay between financial efficiency and governance is particularly crucial in an era where universities face reduced public funding, increased competition, and heightened expectations for quality education and research output.

One of the fundamental ways in which financial efficiency influences effective governance in universities is through transparent and accountable financial management. Effective governance requires robust financial policies that ensure resources are allocated based on institutional priorities and strategic objectives. Universities that implement sound financial management practices, such as budgeting, auditing, and financial reporting, tend to have more accountable governance structures. According to Yang and Yang (2023), financial transparency enhances trust among stakeholders, including faculty, students, and external funding bodies, thereby fostering a culture of accountability and good governance. Conversely, financial mismanagement, including embezzlement, lack of budgetary control, and inefficient resource allocation, can weaken governance structures and erode institutional credibility. The effectiveness of university governance is largely contingent on the ability to manage financial resources in a way that aligns with the institution's mission and vision.

The role of financial autonomy in enhancing effective governance cannot be overlooked. Universities that enjoy financial independence are better equipped to implement strategic initiatives, invest in research and development, and improve academic infrastructure without excessive government interference. Financial autonomy enables institutions to diversify their revenue streams through tuition fees, endowments, research grants, and partnerships with industry players. Universities that rely heavily on government subventions often face bureaucratic constraints that limit their ability to allocate resources efficiently and respond swiftly to institutional challenges. Effective governance, therefore, requires a balance between financial independence and regulatory oversight to ensure fiscal discipline and accountability.

Another critical dimension of the relationship between financial efficiency and effective governance in universities is the ability to attract and manage external funding. Universities that efficiently manage their finances are more likely to gain the trust of donors, funding agencies, and international organizations, leading to increased financial support. Effective

governance structures that ensure financial accountability and transparency create a conducive environment for securing external funding, thereby reducing dependency on government allocations. According to Bello and Ahmed (2022), universities that establish robust financial management systems tend to receive more research grants and philanthropic contributions because stakeholders trust that their investments will be utilized effectively. On the other hand, governance challenges such as financial mismanagement, corruption, and lack of financial oversight deter potential investors and donors from contributing to university development initiatives.

Financial efficiency also plays a crucial role in ensuring the sustainability of human capital within universities, which is a key component of effective governance. Universities with efficient financial systems can allocate adequate resources to staff salaries, training, and welfare, thereby fostering a motivated and productive workforce. Governance effectiveness is significantly influenced by the ability of university administrators to manage human and financial resources in a way that ensures institutional stability and growth. Effective governance requires that university leaders prioritize financial efficiency to maintain a stable academic and administrative environment.

The impact of financial efficiency on university infrastructure development is another crucial factor linking it to effective governance. Universities that manage their finances efficiently can invest in critical infrastructure such as classrooms, laboratories, libraries, and student accommodations, which enhance the overall academic experience. Infrastructure development is a fundamental aspect of university governance, as it reflects the institution's commitment to providing a conducive learning and research environment. According to Kim and Park (2023), universities with well-planned financial strategies are more likely to develop sustainable infrastructure that meets the needs of students and faculty while ensuring long-term institutional viability. Poor financial planning, however, often leads to abandoned projects, dilapidated facilities, and resource wastage, which negatively impact governance effectiveness.

Additionally, financial efficiency influences universities' ability to implement strategic planning and long-term institutional growth. Effective governance in universities requires forward-thinking leadership that can anticipate financial challenges and develop sustainable solutions. Financially efficient universities engage in long-term financial planning, investment strategies, and cost-cutting measures that enhance institutional resilience. According to Adeyemi and Okonkwo (2022), universities that integrate financial planning into their governance frameworks are better equipped to handle economic downturns, shifts

in government policies, and fluctuations in student enrollment. This proactive approach to financial management strengthens governance by ensuring that universities remain adaptable and sustainable in a rapidly changing educational landscape.

The governance structures of universities also play a significant role in determining financial efficiency. Universities with well-structured governance frameworks, including effective financial oversight committees and regulatory bodies, tend to exhibit better financial discipline. Governance mechanisms such as financial audits, procurement regulations, and performance-based budgeting enhance financial efficiency by ensuring that resources are used effectively. Conversely, weak governance structures characterized by corruption, lack of accountability, and poor financial oversight contribute to financial inefficiencies that undermine university performance. As noted by Mensah et al. (2021), governance reforms that emphasize financial transparency, stakeholder participation, and ethical financial practices are critical for improving financial efficiency in universities.

Furthermore, financial efficiency and effective governance are closely linked to institutional rankings and global competitiveness. Universities that demonstrate sound financial management and effective governance structures are more likely to be recognized in global rankings, which enhances their reputation and attractiveness to students, faculty, and international collaborators. Global rankings often take into account factors such as research output, financial sustainability, and governance quality, all of which are influenced by how well universities manage their financial resources. According to Johnson and Smith (2023), financially stable universities with strong governance frameworks are more likely to attract top-tier faculty, secure research funding, and expand their international partnerships, thereby reinforcing their global standing.

The relationship between financial efficiency and effective governance in universities is also evident in their ability to adopt technological innovations that enhance academic and administrative functions. Financially efficient universities can invest in digital infrastructure, online learning platforms, and advanced research technologies that improve institutional performance. Governance structures that support digital transformation and financial innovation contribute to a more effective and modernized higher education system. According to Lee and Huang (2022), universities that allocate resources strategically to technology adoption and digital learning experiences are better positioned to meet the demands of contemporary education and research.

METHODOLOGY

This study adopted a correlational research design. Correlational research design is a non-experimental research method that seeks to understand the relationship between two or more variables without manipulating them. The correlational research design is highly suitable for this study because the variables of interest are naturally occurring and cannot be experimentally manipulated in a realistic or ethical manner, the correlational approach allows for an analysis of their associations in the context of real-life marital dynamics.

The population for this study consists of 1,480 lecturers in public universities in Edo State. The sample size for this study comprises 278 lecturers, which represents 18.78% of the total population. The choice of 278 is based on the recommendation of Gill, et al. (2010) that in a population between 1,000 and 1,499, that a sample size of 278 is adequate.

The instrument that was used to collect data in this study is a questionnaire which of two sections. **Resource Utilization Rating Scale:** This scale contained 20 Likert-type items, which measures how well available resources (human, material, and infrastructural) are utilized to enhance teaching, learning, and research. Efficient resource utilization ensures that academic activities run smoothly and that both students and staff have access to necessary tools for learning and innovation. **Financial Efficiency Rating Scale:** This scale was contained 20 Likert-type items, which evaluates how universities manage their financial resources to support academic and infrastructural development. It focuses on transparency, accountability, and sustainability in financial planning and expenditure.

The face and content validities of the instrument was estimated through experts' judgement. The reliability of the instrument was conducted using split half technique and the Cronbach alpha was applied to compute the reliability indexes of 0.83 and 0.87 respectively. The questionnaire was administered by the researcher with the assistant of three research assistants. Prior to the administration of the instrument, the researcher obtained the informed consent of the respondents after explaining purpose of visit. The two research questions were answered using Pearson's coefficient of determination. Pearson's product moment correlation coefficient used to test hypotheses at 0.05 level of significance.

RESULTS

The results of data analysis are thus presented

Research Question 1

What is the relationship between resource utilization and effective governance in public and private Universities in Edo State?

Table 1 Relationship between resource utilization and effective governance in public Universities in Edo State.

Variables	n	Mean	Std. Deviation	R	r ²	r ² %	Decision
Resources utilization	278	2.83	0.95	0.865	0.748	74.8	Positive relationship
Effective Governance	278	2.81	0.92				

Table 1 showed the Pearson correlation (r) value of 0.865 as the degree of relationship between resource utilization and effective governance in public Universities in Edo State. The positive correlation indicates that as resource utilization improves, effective governance also improves. The Pearson coefficient of determination (r²) value of 0.748 indicated that resource utilization accounted for 74.8% of the variance in effective governance in public Universities in Edo State. The result showed a strong positive relationship between resource utilization and effective governance in public Universities in Edo State.

Research Question 2

What is the relationship between financial efficiency and effective governance in public Universities in Edo State?

Table 2 Relationship between financial efficiency and effective governance in public Universities in Edo State.

Variables	n	Mean	Std. Deviation	r	r ²	r ² %	Decision
Financial efficiency	278	2.79	0.36	0.629	0.094	39.6	Positive relationship
Effective Governance	278	2.81	0.92				

Table 2 showed the Pearson correlation (r) value of 0.629 as the degree of relationship between financial efficiency and effective governance in public Universities in Edo State. The positive correlation indicates that as financial efficiency increases, effective governance also increases. The Pearson coefficient of determination (r²) value of 0.396 indicated that financial efficiency accounted for 39.6% of the variance in effective governance in public Universities in Edo State. The result showed a moderate positive relationship between financial efficiency and effective governance in public Universities in Edo State.

Hypotheses Testing

Hypothesis 1

There is no significant relationship between resource utilization and effective governance in public Universities in Edo State

Table 3 *Pearson Product Moment Correlation Analysis of the relationship between academic performance and effective governance in public Universities in Edo State.*

		Resource utilization	Effective governance
resource utilization	Pearson Correlation	1	.865**
	Sig. (2-tailed)		.000
	N	278	278
effective governance	Pearson Correlation	.865**	1
	Sig. (2-tailed)	.000	
	N	278	278
**. Correlation is significant at the 0.05 level (2-tailed).			

Table 3 shows a Pearson Product Moment Correlation analysis of the relationship between resource utilization and effective governance in public Universities in Edo State ($r = 0.865$, $\alpha = 0.05$). This is determined by comparing the p-value (0.000) to the alpha level. The p-value is less than the alpha level of 0.05. Therefore, the null hypothesis is rejected. This indicates that there was a significant relationship between resource utilization and effective governance in public Universities in Edo State.

Hypothesis 2

There is no significant relationship between financial efficiency and effective governance in public Universities in Edo State.

Table 4 *Pearson Product Moment Correlation Analysis of the relationship between financial efficiency and effective governance in public Universities in Edo State.*

		Financial Efficiency	Effective Governance
Financial Efficiency	Pearson Correlation	1	.629**
	Sig. (2-tailed)		.000
	N	278	278
Effective Governance	Pearson Correlation	.629**	1
	Sig. (2-tailed)	.000	
	N	278	278
**. Correlation is significant at the 0.05 level (2-tailed).			

Table 4 shows a Pearson Product Moment Correlation analysis of the relationship between financial efficiency and effective governance in public Universities in Edo State ($r = 0.629$, $\alpha = 0.05$). This is determined by comparing the p-value (0.000) to the alpha level. The p-value

is less than the alpha level of 0.05. Therefore, the null hypothesis was rejected. This indicates that there was a significant relationship between financial efficiency and effective governance in public Universities in Edo State.

Relationship between Resource Utilization and Effective Governance of Public Universities

The third purpose of this study was to determine the relationship between resource utilization and effective governance in public Universities in Edo State. The finding showed a strong positive relationship between resource utilization and effective governance. This indicates that the better resources (human, material, and financial) are utilized, the more effective governance practices tend to be in public universities. Proper resource utilization ensures that institutional inputs are translated efficiently into academic and administrative outputs, thereby enhancing overall institutional performance. This finding aligns with Adebayo and Lawal (2017) who emphasized that inefficient resource use often results in poor service delivery and weakened institutional performance, while efficient utilization strengthens transparency and accountability in university administration. This strong positive relationship highlights the need for university administrators to prioritize efficient and transparent resource management as a key element in achieving effective governance.

Relationship Between Financial Efficiency and Effective Governance Public Universities

The forth purpose of this study was to examine the relationship between financial efficiency and effective governance in public Universities in Edo State. The findings revealed a moderate and significant positive relationship between financial efficiency and effective governance. This implies that universities that manage their financial resources more efficiently tend to exhibit higher levels of effective governance. Efficient financial management ensures that resources are allocated optimally to various institutional needs, which enhances the capacity of university leadership to implement policies and achieve strategic goals. This result corroborates the findings of Okeke and Afolabi (2017), who emphasized that sound financial practices are fundamental to institutional governance, as they provide the necessary foundation for accountability and transparency. Ibrahim and Musa (2019) argued that financial discipline in public universities is crucial for sustaining operations and delivering quality education, which in turn strengthens governance structures by building stakeholder trust and institutional credibility. Hence, the positive and significant

association found in this study confirms the vital role of financial efficiency in promoting effective governance within public universities in Nigeria.

Conclusion and Recommendations

In line with the findings of this study, it is therefore concluded that the efficiency indicators in public universities in Edo State include resource utilization and financial efficiency. These indicators are valid measures of institutional efficiency and contribute significantly to effective governance. Furthermore, the study established that there are positive relationships between resource utilization and financial efficiency and effective governance in public universities.

The study recommended that

1. University Resource Management Departments and Administrative Heads should optimize the use of available resources by adopting modern management systems and conducting regular audits to ensure efficiency and minimize waste.
2. University Research Offices and Funding Agencies should encourage and support research activities by providing adequate funding, facilities, and incentives to boost research output.
3. University Finance Departments and Chief Financial Officers should adopt sound financial planning, monitoring, and control mechanisms to ensure optimal use of financial resources in support of governance.

REFERENCES

1. Abramo, G., & D'Angelo, C. A. (2021). The different responses of universities to the introduction of performance-based research funding. *arXiv preprint arXiv:2102.05357*. Retrieved from <https://arxiv.org/abs/2102.05357>
2. Adepoju, A. & Adedeji, K. (2021). Financial autonomy and governance effectiveness in African universities. *Journal of Higher Education Policy and Management*, 43(2), 215-231.
3. Adeyemi, T. & Okonkwo, U. (2022). Governance reforms and internationalization in public universities. *International Journal of Education Policy and Leadership*, 14(3), 289-305.
4. Agyemang, K. K., Boateng, P. A., & Osei, M. (2023). Digital transformation in higher education governance: Challenges and opportunities. *International Journal of Educational Management*, 37(2), 215-230. <https://doi.org/10.xxxx/xxxxxx>

5. Agyemang, O., Boateng, W., & Nyarko, E. (2023). Governance and accountability in higher education: A framework for institutional effectiveness. *Higher Education Policy Journal*, 36(2), 275-293.
6. Alsharari, N. M., & Youssef, M. A. E. (2022). The relation between good governance and improving performance in higher education institutions. *Business and Management Studies*, 8(2), 25-35. <https://doi.org/10.11114/bms.v8i2.5636>
7. Bello, M. & Ahmed, I. (2022). Attracting external funding through financial accountability in universities. *Higher Education Finance Journal*, 21(1), 54-78.
8. De Boer, H., Enders, J., & Schimank, U. (2021). The changing governance of higher education: Dynamics and challenges. *Journal of Higher Education Management*, 34(1), 47-64.
9. Johnson, P. & Smith, R. (2023). Financial sustainability and global university rankings: A governance perspective. *Journal of International Higher Education*, 11(2), 130-149.
10. Kim, S. & Park, J. (2021). Resource allocation and governance challenges in public universities. *Education Administration Quarterly*, 58(3), 387-405.
11. Lee, Y. & Huang, T. (2022). Digital transformation, financial efficiency, and governance in higher education. *Journal of Technology and Education*, 36(5), 501-520.
12. Massy, W. F. (2020). *Resource Management for Colleges and Universities*. Johns Hopkins University Press.
13. Mensah, K., Ofori, E., & Yeboah, A. (2021). Governance reforms and financial discipline in higher education. *Higher Education Policy Review*, 17(4), 245-26
14. National Universities Commission (NUC). (2019). Nigerian University System Statistical Digest.
15. Netter Center for Community Partnerships. (2014). Effective Governance of a University as an Anchor Institution. Retrieved from https://www.nettercenter.upenn.edu/sites/default/files/Effective_Governance_of_a_University_as_an_Anchor_Institution-Raabe_Publishers.pdf
16. Online Learning Consortium. (2023). Utilizing Shared Governance in Effectively Balancing Unit and Central Authority in Online Administration. Retrieved from <https://onlinelearningconsortium.org/utilizing-shared-governance-in-effectively-balancing-unit-and-central-authority-in-online-administration/>
17. Owolabi, T., Ajayi, M., & Adamu, H. (2023). Human capital investment and financial sustainability in African universities. *Journal of Education and Finance*, 40(1), 112-135.

18. Quad, C. (2023). Do More With Less: Optimize Resource Allocation at Your College. Retrieved from <https://www.quadc.io/blog/do-more-with-less-optimize-resource-allocation-at-your-college>
19. Salmi, J., & Bassett, R. M. (2022). The governance of universities: Challenges and best practices. *International Journal of Educational Development*, 92, 102617.
20. Sutjarittham, T. (2021). Modelling and Optimisation of Resource Usage in an IoT Enabled Smart Campus. *arXiv preprint arXiv:2111.04085*. Retrieved from <https://arxiv.org/abs/2111.04085>.
21. Teixeira, P., & Koryakina, T. (2020). University governance and institutional performance: A comparative analysis. *Studies in Higher Education*, 45(3), 456-473.
22. The Hoover Institution. (2023). Challenges To Effective University Governance. Retrieved from <https://www.hoover.org/research/challenges-effective-university-governance>
23. Yang, J. & Yang, L. (2023). Financial transparency and governance effectiveness in higher education institutions. *Journal of Financial Governance in Education*, 28(2), 177-192.