Strategic Cost Management Practices and Performance of Ghanaian Public Higher Education Institutions

Justice Ray Achoanya Ayam

Abstract

Higher education in Ghana struggles with transparency and reliability in cost determination, especially in public higher education institutions (PHEIs). Existing cost accounting methods tailored to funding and regulatory compliance often fall short in capturing all measurable outputs and lack the standardised reporting frameworks seen in developed countries. This article examines current strategic cost management practices in Ghanaian PHEIs, drawing data from the Ghana Ministry of Education, academic databases, and reports from the World Bank and UNESCO Institute for Statistics. The findings reveal the need for the country's PHEIs to adopt transparent financial reporting and improve cost structures. Innovative cost management practices and a culture of fiscal prudence are necessary to ensure financial sustainability and operational efficiency. Policy interventions are recommended to develop a unified, international best practice-aligned cost accounting framework for all PHEIs in Ghana.

Key words: higher education, cost management, financial sustainability, financial performance, Ghana

Résumé

Au Ghana, l'enseignement supérieur est confronté à des problèmes de transparence et de fiabilité dans la détermination des coûts, en particulier dans les établissements publics d'enseignement supérieur

ABOUT THE AUTHOR: JUSTICE RAY ACHOANYA AYAM, formerly of the Catholic University College of Ghana. email: ajrayam@yahoo.com
Ayam, J. R. A. (2024). Strategic Cost Management Practices and Performance of Ghanaian Public Higher Education Institutions. *International Journal of African Higher Education*, 11(1). https://doi.org/10.6017/ijahe.v11i1.16519

(PHEI). Les méthodes de comptabilité analytique existantes, adaptées au financement et à la conformité réglementaire, ne parviennent souvent pas à saisir tous les résultats mesurables et ne disposent pas des cadres de reporting normalisés que l'on trouve dans les pays développés. Cet article examine les pratiques actuelles de gestion stratégique des coûts dans les IESP ghanéens, en s'appuyant sur des données du ministère ghanéen de l'éducation, des bases de données universitaires et des rapports de la Banque mondiale et de l'Institut de statistique de l'UNESCO. Les résultats révèlent la nécessité pour les IESP du pays d'adopter des rapports financiers transparents et d'améliorer les structures de coûts. Des pratiques innovantes de gestion des coûts et une culture de la prudence fiscale sont nécessaires pour assurer la viabilité financière et l'efficacité opérationnelle. Des interventions politiques sont recommandées pour développer un cadre de comptabilité analytique unifié et aligné sur les meilleures pratiques internationales pour tous les IESP du Ghana.

Mots clés : enseignement supérieur, gestion des coûts, viabilité financière, performance financière, Ghana

Introduction

Financial sustainability is a pressing concern for higher education institutions (HEIs) worldwide, necessitating a thorough understanding of operational costs for informed financial management and resource allocation (Olariu and Brad, 2022). While standardised costing frameworks like standard costing and activity-based costing (ABC) are commonly used in developed countries, research indicates a lack of such initiatives in developing countries like Ghana. The macro-economic challenges facing Ghana, characterised by debt distress, exchange rate volatility and a recent International Monetary Fund (IMF) bailout, have exerted significant pressure on the financial health of public higher education institutions (PHEIs). These economic difficulties have compounded the already strained financial resources available to PHEIs, leading to limited or stagnant funding in real terms and intensifying the need for robust cost management strategies. In such a constrained financial environment, strategic management of costs becomes not only crucial but indispensable to ensure the financial sustainability and

operational efficiency of PHEIs. As highlighted by Finne, Haga, and Sundvik (2023), effective cost management is critical during economic downturns, when mismanagement of resources can exacerbate financial instability. Given the escalating costs of education, budget constraints and limited resources, it is crucial for HEIs in Ghana to implement effective cost management strategies to ensure financial viability and operational efficiency (Tamrat, 2022).

In the context of HEIs, strategic cost management practices involve identifying and managing the costs associated with academic programmes, research activities, administrative operations and other institutional functions (Langfield-Smith, Thorne and Hilton, 2018). Effective strategic cost management practices are essential for Ghanaian PHEIs to attain financial sustainability and improve their overall performance (Tze Yin, Ai Ping, Siti Nabiha and Sukumar, 2023). Inadequate cost management practices can lead to financial inefficiencies, reduced service quality and limited access to resources, negatively impacting overall performance. In contrast, PHEIs that implement effective cost management practices have better financial outcomes and improved service quality (Kim and Chung, 2023). The COVID-19 pandemic further highlighted the significance of cost management practices in PHEIs (Finne, Haga and Sundvik, 2023). Given the financial pressures currently facing them in developing countries such as Ghana, investing in effective cost management practices is central to improve financial sustainability and performance.

The central theme of our study pertained to the lack of transparency and reliability in determining the cost of services provided at various levels within Ghana's PHEIs. As illustrated in Table 5, the findings revealed a persistent increase in the variation between the standard unit cost per student and the actual unit cost of PHEIs, which indicates weak costing processes. Furthermore, Table 6 presents an average deficit of about 45% between 2017 and 2021, which suggests an underdeveloped cost management system. In addition, the current cost accounting methods prioritise compliance with funding agencies and government regulations over capturing all quantifiable, customised outputs produced by PHEIs in the country. The study underscores the pressing need to establish a standardised cost reporting format that can capture all quantifiable outputs produced by PHEIs in Ghana, similar to the approach taken in developed countries.

The study explored strategic cost management practices in Ghana's PHEIs and their impact on institutional performance and sustainability. It contributes to the literature by examining current practices, identifying challenges, and suggesting areas for improvement. The study is significant as it alerts policymakers, institutional leaders, and education stakeholders to the importance of effective cost management and its influence on institutional performance. It also lays the groundwork to develop policies and guidelines for cost management in PHEIs in Ghana and offers insights for developing countries facing similar challenges in managing PHEIs' costs.

This article begins by outlining the study's purpose and structure, followed by a literature review and the methodology employed. The analysis is organised into several key sections: exploration of existing cost management practices, identification of the associated challenges and opportunities, and an evaluation of best practices and innovative approaches. It further examines the implications of these cost management strategies for institutional performance. The article concludes with a set of targeted recommendations aimed at enhancing cost management practices in order to promote financial sustainability and operational effectiveness in Ghanaian PHEIs.

Objectives of the Study

The study aimed to analyse the strategic cost management practices in PHEIs in Ghana and their impact on institutional performance. The specific objectives were to:

1. Examine Existing Cost Management Practices: Investigate the prevailing cost management strategies within Ghanaian PHEIs to understand their current operational frameworks.
2. Identify Challenges and Opportunities: Analyse the challenges and opportunities associated with cost management in Ghanaian PHEIs, focusing on factors that impact financial efficiency and institutional growth.
3. Evaluate Best Practices and Innovative Approaches: Assess best practices and innovative cost management approaches that can enhance the financial sustainability and performance of PHEIs in Ghana.
4. Analyse Implications for Institutional Performance: Evaluate the impact of different cost management strategies on the overall institutional performance and long-term sustainability of PHEIs in Ghana.

Research Questions

The research questions were:

What are the current cost management strategies employed by PHEIs in Ghana?

What are the main challenges and opportunities associated with cost management in Ghanaian PHEIs?

What best practices and innovative approaches can enhance cost management in Ghanaian PHEIs?

How do different cost management strategies impact the institutional performance and sustainability of PHEIs in Ghana?

Literature Review

Cost Management Techniques, Concepts and Principles

The contemporary financial landscape presents PHEIs with an increasingly complex funding environment, necessitating a nuanced approach to cost management. This underscores the need for profound comprehension of the intricacies associated with institutional activities and projects, particularly in the context of financial sustainability (Usman and Ab Rahman, 2023; Estermann and Claeys-Kulik, 2013). Cost management frameworks developed in the United States and Europe are pivotal in enhancing transparency and equity in the allocation of institutional costs (Kimball and Iler, 2023). Deployment of cost management concepts and principles enables PHEIs, alongside other organisations, to meticulously allocate financial resources, exercise stringent cost control, maximise value, and ultimately, achieve their organisational objectives (Ameen, Ahmed and Abd Hafez, 2018).

A sophisticated array of costing techniques is available to PHEIs to achieve their financial imperatives. These include Standard Costing, ABC, Target Costing, Life Cycle Costing, Value Chain Costing, Quality Costing, Kaizen Costing, and Backflush Costing (Ndoloka, 2019). Each presents distinct methodologies and strategic benefits, thereby offering institutions a diversified toolkit for effective financial stewardship.

Table 1 provides a detailed comparison of various managerial accounting costing techniques, elucidating their objectives, cost classifications, rationale, benefits, and inherent limitations. Standard Costing is predicated on comprehensive allocation of costs for services and products, incorporating Direct Material Cost, Direct Labour Cost, and Overheads. While it fosters efficiency and cost control, it is not devoid of challenges, such as the controversial materiality limits for variances and potential morale issues among the workforce.

Table 1: Costing Techniques and Characteristics

Costing Technique	Objective	Cost Classification	Rationale	Benefits	Limitations	Source
Standard Costing	Full costing of services	Direct Material Cost, Direct Labour Cost, Overheads	To achieve maximum efficiency and cost control	Improved cost control	Controversial materiality limits for variances, non-reporting of certain variances, and low morale among some workers	Horngren, C.T., Datar, S.M., and Rajan, M. (2020).
Activity-Based Costing (ABC)	Competitive pricing, service profitability	Overheads	Cost assignment for managerial decision-making	Provides realistic manufacturing costs for specific products, identifies inefficient processes and targets for improvement, determines product profit margins more precisely, offers better understanding and justification of costs in manufacturing overheads	Collection and preparation of data is time-consuming, costs more to accumulate and analyse information, source data isn't always readily available from normal accounting reports, setting up an ABC system is time-consuming and expensive to maintain	Kaplan, R.S., and Anderson, S.R. (2007).
Target Costing	Competitive pricing	Direct cost, Overheads	Cost reduction, shows management's commitment to process improvements and product innovation to gain competitive advantage	The product is created in line with customer expectations; thus, the customer feels more value is delivered	Target pricing relies on correctly estimating the final selling price of the product. Estimating too low a price and then accordingly imposing rigid constraints on cost may place an unrealistic burden on the production department	Cooper, R., and R. Slagmulder (1997).
Life Cycle Costing	Cost reduction and process improvement	Direct cost, Overheads, Investment cost	Continuous improvement, non-production costs will become more visible, and the potential for their control is increased	Provides insights into understanding and managing the total costs incurred throughout its life cycle	Deemed to be costly, labelled as time-consuming, accuracy of data is doubted, and collecting data for analysis is tedious	Ellram, L.M. (1995).

Value Chain Costing	Competitive advantage and cost efficiency	Direct cost, Overheads	Continuous improvement, assesses ineffective value chain activities for mitigation, appreciates the linkages and interconnections along the different business activities	Supports business activities decision making	Extensive data collection and analysis needed, costly and time-consuming for organisations with complex supply chains or multiple units. Not suitable for highly competitive or rapidly changing markets as cost reduction focus may impede innovation and strategic investments, limiting adaptation to market changes	Porter, M.E. (2008).
Quality Costing	Waste reduction and quality improvement	Direct cost, Overheads	Quality improvement, fewer product defects, higher service/ product quality	Increased customer satisfaction	Merely measuring and reporting quality costs may not necessarily address product quality issues, results more often lag behind quality improvement initiatives	Al Faruq, M. S. S., Rozi, M. A. F., and Sunoko, A. (2023).
Kaizen Costing	Cost reduction below standard cost	Direct cost, Overheads	Quality improvement, creates a better work environment, improves staff and customer satisfaction, promotes the formation of task and multifunctional teams, reduces waste and promotes process improvement	Distorts the entire management system, staff unwillingness to change the existing system, staff training could be expensive and very demanding	Potential disruption of management systems, staff resistance to change, high training costs, and diminishing returns as further improvements become harder to achieve.	Hosono, A. (2009).
Backflush Costing	Lean inventory management	Direct cost, Overheads	Waste reduction, relatively easy to assign costs to inventory, simplified journal entry at the end of the production process in assigning costs to products	Only suitable for Just-in-time operations where production and sales volumes are almost equal	Unsuitable for long-run manufacturing processes, not compatible with external financial reporting requirements due to non-compliance with reporting standards	Fullerton, R.R. and McWatters, C.S. (2004).

Theoretical Framework in the Context of Cost Management

Cost management in PHEIs represents a critical axis around which institutional sustainability and academic excellence revolve. Within the broader framework of financial management, cost management encompasses strategic planning, control, and continuous monitoring of financial resources, aiming to optimise their use in alignment with institutional objectives (Nartey, Aboagye-Otchere and Simpson, 2022). The theoretical underpinnings of cost management are deeply rooted in multiple disciplines, each contributing distinct perspectives that enrich the discourse.

Transaction Cost Theory, a foundational construct in this domain, offers profound insights into the internal and external governance of organisational activities. Simons (2019) postulated that firms inherently exist to minimise the costs of economic transactions through negotiation, monitoring and enforcement, thereby influencing their structure and operational modalities. Hasanah (2024) reaffirmed the mechanisms by which governance structures mitigate these costs. In PHEIs, the application of this theory manifests in strategic cultivation of long-term supplier relationships and enhanced procurement transparency. These serve to reduce information asymmetry and lower transaction costs, thereby facilitating more efficient allocation of resources. For instance, strategic vendor partnerships can not only secure reliable supply chains but also establish a robust operational framework that underpins academic excellence.

Complementing Transaction Cost Theory, Contingency Theory posits that cost management strategies are inherently context-specific. This theory advocates for a nuanced approach, wherein PHEIs tailor their cost management practices to their unique organisational characteristics and the external environment (Pavlatos, 2018). With its focus on opportunity costs and alternative allocation of resources, Economic Cost Theory guides decision-making processes in educational contexts by ensuring that resource allocation is both informed and optimised (Shand and Bowden, 2022).

Cost-Benefit Analysis further enriches this discourse by providing a systematic approach to evaluate the economic viability of investment decisions. Through this lens, PHEIs are equipped to prioritise initiatives that promise the most significant returns relative to their costs. Resource Dependency Theory is another critical framework that underscores the importance of managing external dependencies such as suppliers and funding sources in shaping organisational behaviour and strategic outcomes (Chumba, 2023). Human Capital Theory complements this by emphasising the role of education and skills development in driving organisational productivity, advocating for strategic investment in human resources as pivotal to achieving cost management objectives (Yorks, Abel and Rotatori, 2022).

Strategic frameworks, including those articulated by Porter (1980) and Kaplan and Norton (1996 and 2001), further contribute to this intellectual discourse. Porter's competitive strategy framework emphasises the importance of differentiation and cost leadership as pathways to sustainable competitive advantage. The Balanced Scorecard developed by Kaplan and Norton translates strategic objectives into actionable performance metrics, providing PHEIs with a holistic tool to monitor and enhance their operational alignment with institutional goals. This dual focus on strategy and performance highlights the need for continuous adaptation in the dynamic educational setting (De Jesus and Alves, 2023; Kiriri, 2022).

The Unified Cost Management System and Ghanaian Higher Education

The concept of a unified cost management system, inspired by the Full Economic Costing (FEC) framework utilised in the UK, presents a compelling solution to the myriad challenges associated with resource allocation and cost management in Ghanaian PHEIs. Such a system could significantly improve equitable distribution of resources across institutions, irrespective of their size, category, or research intensity, thereby promoting transparency, sustainability, and enhanced institutional performance. The adoption of this model aligns with global trends in higher education (HE) financing, which increasingly emphasise the need for comprehensive, precise cost management practices (Sheikh, Chandler, Hussain and Timmons, 2022).

Full Economic Costing (FEC) Model

The FEC model, which has been successfully implemented across the UK's HEIs, offers a comprehensive approach to the allocation of both direct and indirect costs. It meticulously accounts for the totality of costs associated with research, teaching, and administration, ensuring that universities receive funding commensurate with their operational expenses (Benner, Grant and O'Kane, 2022). Such a model proves particularly efficacious in research-intensive environments where substantial resources are required to maintain high standards of research output and quality (Nicol and Coen, 2023).

The integration of the FEC model with performance-based funding is an important advancement in resource allocation within HEIs. This approach ties financial support directly to critical performance indicators, including research productivity, graduation rates, and student employability. It not only rewards institutions for efficient management of costs, but also actively encourages enhancements in both the academic and operational domains. Such a framework ensures that funding mechanisms are closely aligned with institutional expenditure while simultaneously promoting higher standards of educational and research outcomes (Benner, Grant and O'Kane, 2022; Nicol and Coen, 2023).

Within the Ghanaian context, the adaptation of an FEC model would necessitate a granular analysis of all cost drivers within public tertiary institutions. This would enable institutions to allocate indirect costs such as utilities, administrative salaries, and maintenance with enhanced precision. Research-intensive institutions such as the University of Ghana and Kwame Nkrumah University of Science and Technology stand to benefit significantly from this model. By securing appropriate funding to support extensive research activities, this approach would not only promote financial sustainability, but also align resource allocation with the specific needs of each institution. The allocation of costs under this model can be illustrated through the categories and items detailed in Table 2.

Table 2: Full Economic Costing (FEC) Model

Cost Item	Description	Allocation Basis	Source
Academic Salaries	Salaries of faculty directly involved in teaching/research	Allocated directly to teaching/research activities	Langfield-Smith, K., Thorne, H., and Hilton, R.W. (2018).
Research Material	Consumables and equipment used in research	Based on actual usage in research projects	
Library Services	Costs associated with library resources and staff	Allocated based on student/staff numbers	
Research Related Travel Expenses	Travel costs for research-related activities	Allocated to specific research projects	
Administrative Salaries	Salaries of administrative staff	Allocated based on departmental usage	
Building Maintenance	Costs related to maintaining university facilities	Allocated based on space usage	
Utilities (Electricity, Water, etc.)	General utilities for university operations	Allocated based on building occupancy rates	
IT Support	Costs of IT services and infrastructure	Allocated based on user numbers or department size	
Depreciation of Equipment	Depreciation of university-owned equipment	Allocated based on usage in teaching/research	

Performance-Based Funding (PBF)

The integration of a Performance-Based Funding (PBF) model within the unified cost management system ensures that funding is closely tied to institutional performance metrics, such as student enrolment, graduation rates, research output, and employability outcomes. Successful implementation of this model in various European countries, including Denmark and the Netherlands, has led to improved efficiency and effectiveness in HE funding (Lambrechts and Lepori, 2023).

A PBF model would incentivise public Ghanaian tertiary institutions to optimise their performance by aligning funding with strategic goals. Those demonstrating high levels of student success and research excellence would receive greater financial support, encouraging other institutions to adopt best practices and strive for similar achievements. This competitive funding environment would drive continuous improvement across the sector, fostering a culture of accountability and excellence. Furthermore, the PBF model can be tailored to account for the diverse missions of Ghanaian PHEIs. Teaching-intensive institutions could be evaluated based on metrics reflecting their primary focus on undergraduate education, while research-intensive institutions could be assessed based on research output and impact. This dynamic approach ensures fair evaluation and appropriate funding allocation, reflecting each institution's unique contributions to the HE landscape.

Ghana typically releases subventions to PHEIs based on more traditional, less performance-oriented criteria (Oyewole, 2022). These may include factors like student enrolment numbers, staff salaries, infrastructure needs, and historical funding levels (Newman and Duwiejua, 2015). While some elements of performance might be considered, they are generally not as explicitly tied to budget allocations as in a performance-based model.

Table 3 illustrates the PBF model.

Table 3: Performance-Based Funding (PBF) Model

Source: Author's Construct

Performance Metric	Cost Item	Description	Allocation Basis	Allocation Rate Formula	Weight (%)	Source
Student Success	Graduation Rates	Rewards based on the number of students graduating	Allocated as a percentage of the overall budget	(Graduates/Total Students) × Total Budget	20	
	Student Retention	Funding tied to year-on-year student retention rates	Allocated based on retention improvement	(Retention Rate Increase) × Retention Budget	15	
	Employment Outcomes	Funding linked to graduate employability	Allocated based on graduate employment statistics	(Employment Rate) × Employment Outcome Budget	15	Sarrico, C. S. (2020).
Research Output	Research Publications	Number and quality of research publications	Allocated based on impact factor or citation index	(Impact Factor/ Citation Index) × Research Budget	10	
	Research Grants	Success in obtaining external research funding	Allocated based on grant value/ number	(Grant Value or Count) × Research Grant Budget	10	
	Patents and Innovations	Patents and innovative projects developed by the university	Allocated based on patent count	(Patent Count) × Innovation Budget	5	
Teaching Quality	Student Satisfaction	Survey results on student satisfaction with teaching	Allocated based on satisfaction scores	(Satisfaction Score) × Teaching Quality Budget	10	
	Course Completion Rates	Percentage of students completing courses on time	Allocated based on course completion rates	(Completion Rate) × Course Completion Budget	5	
Institutional Efficiency	Administrative Efficiency	Reduction in overhead costs	Allocated based on cost-saving measures	(Overhead Cost Reduction) × Efficiency Budget	5	
	Resource Utilisation	Effective use of allocated resources	Allocated based on resource efficiency ratios	(Resource Efficiency Ratio) × Utilisation Budget	5	

Balancing Equity and Efficiency in Resource Allocation

Balancing equity and efficiency in resource allocation is a fundamental challenge in HE financing, particularly in the context of diverse institutional needs. Integration of the FEC and PBF models into a unified cost management system offers a robust framework to address this challenge.

By standardising the measurement and allocation of both direct and indirect costs, the FEC model ensures that all institutions, regardless of size or mission, have equitable access to the resources required for effective operation. This is particularly relevant for smaller institutions or those primarily focused on teaching, where operational costs may be lower, but the need for sufficient funding to maintain educational quality remains critical. As noted by Irawan, Supriyatna, Widjaja and Lin (2021), accurate cost accounting through FEC can significantly enhance resource efficiency, leading to more informed budgetary decisions and better alignment of resources with institutional priorities.

For larger, research-intensive institutions, the PBF model offers a complementary approach, ensuring that funding reflects not only the higher operational demands but also the substantial research contributions of these institutions. Successful application of these models in the UK has demonstrated their effectiveness in improving financial management and ensuring that universities receive funding commensurate with their cost structure (McMillan, 2014). The UK's Research Excellence Framework (REF) exemplifies how performance-based metrics can be integrated with cost management to enhance research quality and impact (HEFCE, 2015).

Similarly, strategic implementation of PBF models in Denmark and the Netherlands has led to more strategic and outcomes-focused funding, driving improvements in teaching and research and fostering a culture of transparency and accountability, which are key objectives for any unified financial system in Ghana (Jongbloed and Vossensteyn, 2016).

The experiences of these European countries provide compelling evidence of the potential applicability and effectiveness of the FEC and PBF models in the Ghanaian context. Integrating these models can drive improvements in both equity and efficiency, ensuring that all institutions are adequately resourced to fulfil their educational mission while promoting excellence in research and teaching.

Contextual Analysis

In developing regions, HE's classification as either a public or private good profoundly shapes funding strategies and institutional dynamics (Kezar and Bernstein-Sierra, 2024). Public higher education institutions often face fluctuating and insufficient public funding, forcing them to adopt varied financial strategies to ensure their survival (Ruiz-Morris, 2023). This fiscal uncertainty frequently catalyses a shift toward corporate models, a transformation driven by both adaptive necessity and external pressures (Crew and Crew, 2020). Within this context, the integration of market-oriented practices and the pursuit of alternative revenue streams emerge as fundamental strategies (Alajoutsijärvi, Alon and Pinheiro, 2021).

The New Public Administration (NPA) paradigm, which rose to prominence in the latter half of the 20th century, responded to perceived inefficiencies in traditional public administration. Emphasising efficiency, accountability, and strategic resource allocation, NPA strives to achieve value for money (VFM) in public service delivery (Torneo, 2020). A cornerstone of NPA, VFM focuses on maximising outcomes from limited public resources, ensuring that all expenditure yields the highest possible benefit (Ewang, 2019).

In Ghanaian HE, the VFM paradigm is evident in governmental efforts to enhance financial accountability and resource allocation within public universities. The adoption of performance-based funding models, stringent financial oversight, and reforms aimed at increasing institutional efficiency underscore a commitment to measurable public investment outcomes (Sześciło, 2020). These initiatives align with the broader objectives of the Ghana Tertiary Education Commission (GTEC) and the National Accreditation Board (NAB) to enhance institutional effectiveness and accountability (Alomenu, 2023).

Market-driven activities in HE, characterised by the application of market principles such as competition, consumer choice, and revenue generation, have roots in neoliberal ideology. This approach commoditises education, subjecting it to market forces. Institutions that adopt this model are encouraged to compete for students, research funding, and partnerships, thus generating revenue streams independent of government support (Pucciarelli and Kaplan, 2016).

Despite reliance on government funding, Ghanaian public universities increasingly incorporate market-driven practices. Strategies such as fee-paying programmes, partnerships with private entities, and international student recruitment reflect a gradual shift towards market orientation within a predominantly public system (Davis and Farrell, 2016). This dual focus on VFM and market-oriented activities represents a hybrid model, where universities must balance public accountability with market responsiveness.

In the sub-Saharan African (SSA) context, the volatility of the HE market, compounded by underfunding, inconsistent government support, and rapid enrolment growth, demands a nuanced analysis that extends beyond conventional frameworks. Addressing these complexities is essential to develop strategies that effectively support PHEIs in SSA (Oketch, 2023).

Methodology

The study employed a comprehensive methodology combining a systematic literature review and in-depth document analysis of strategic cost management practices within PHEIs in Ghana. This approach integrated data from the academic literature, policy reports, and financial datasets for robust analysis.

Data Collection

Systematic Literature Review: The literature review involved systematic searches of academic databases such as JSTOR, ProQuest, and Google Scholar, along with relevant websites of Ghanaian PHEIs and government agencies. Specific keywords and criteria were used to identify high-quality, relevant and recent sources. The articles were screened based on their relevance to the research objectives, quality, and date of publication.

Financial Datasets: Financial datasets were obtained from the GMoE and Ghana Education Sector performance reports, providing essential quantitative data on PHEIs' financial health and strategic cost management practices.

Table 4 sets out details of the key documents consulted and their sources.

Table 4: Key Documents and Data Sources

Document Title	Source of Data	Nature of Data	Link/Access Information
Annual Financial Reports of Ghanaian Public Universities (2019-2023)	University Archives	Financial data and cost management reports	Available via institutional access or on request
Public Finance Management Act (PFMA), 2016	Government of Ghana	Legal and regulatory framework	Ghana Ministry of Finance, https://mofep.gov.gh/sites/default/files/acts/PUBLIC-FINANCIAL-MANAGEMENT-ACT-2016.pdf
Ghana Tertiary Education Commission (GTEC) Reports (2019-2023)	GTEC	Policy documents and strategic reports	GTEC Publications
Strategic Plans of Ghanaian Public Universities (2019-2023)	University Websites	Institutional strategy documents	Available via institutional access or on request
Ghana Tertiary Education Policy (2019)	Ministry of Education	National policy documents	Available via Ministry of Education, Ghana
Teixeira, P., Biscaia, R., and Rocha, V. (2021).	Google Scholar	Comparative international analysis	https://doi.org/10.1080/01900692.2021.2003812
Suhail, G. (2017).	ProQuest	Financial management strategies	https://search.proquest.com/openview/70e55198ca94d79761e9752d324c1eb3/1?pq-origsite=gscholarandcbl=18750
Ghana Education Sector Performance Reports (2015-2023)	Ghana Ministry of Education (GMoE)	Educational performance metrics and financial datasets	Available via Ministry of Education, Ghana
Higher Education Reforms in Africa (2000-2023)	African Union and Association of African Universities (AAU)	Comparative analysis of higher education reforms across Africa	Available through AAU and AU websites
World Bank Reports on Higher Education in Africa (2010-2023)	World Bank	International comparative analysis of higher education financing	World Bank Education
Estermann, T., and Claeys-Kulik, A. L. (2013)	European University Association	Full costing practices and progress in Europe	Link to EUA Document
TRAC Development Group (2023).	TRAC Development Group	Guidance on full economic costing in UK higher education	Link to TRAC Guidance
UNESCO Institute for Statistics: Global Education Monitoring Reports 2023	UNESCO Institute for Statistics	Comprehensive global data on education, including financial and performance metrics for higher education	UNESCO GEM Report
UNESCO Institute for Statistics: Data for Sustainable Development Goals (SDGs) (2015-2023)	UNESCO Institute for Statistics	Data on education financing and management in alignment with SDGs, with relevance to higher education institutions	UNESCO Institute for Statistics Website

Newman, E. (2013). a	Google Scholar	Financial management strategies	https://ojs.amhinternational.com/index.php/jevr/article/view/131
Tsyhaniuk, D. L., and Akenten, W. N. (2021).	Google Scholar	Financial management strategies	https://essuir.sumdu.edu.ua/handle/123456789/87474
Appiah, K. O. (2010, June).	Google Scholar	Financial management strategies	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2405927

Source: Author's Construct

Thematic Analysis Using NVivo

Thematic analysis, executed through NVivo 11, elucidated complex patterns within the literature on strategic cost management practices in Ghanaian PHEIs. A preeminent tool in qualitative research, NVivo proved indispensable in distilling salient themes (Hong, Gonzalez-Reyes, and Pluye, 2018). The word frequency tools embedded within NVivo were instrumental in revealing recurrent phrases and concepts, forming a bedrock for meticulous qualitative thematic analysis. The analytical journey commenced with an exhaustive familiarisation process, characterised by iterative readings that ensured intimate understanding of the data's nuances.

Following this foundational step, codes were methodically generated, encapsulating the data's significant features. These codes merged into primary themes, which were precisely aligned with the study's objectives. The thematic areas provide a comprehensive lens through which the cost management landscape in Ghanaian PHEIs was critically examined:

1. Existing Cost Management Practices: A critical exploration of current frameworks illuminated the operational strategies employed by PHEIs to effectively manage costs.

2. Challenges and Opportunities in Cost Management: This theme scrutinised the multifaceted challenges and opportunities, revealing the intricate factors influencing financial efficiency and institutional growth.

3. Best Practices and Innovative Approaches in Cost Management: A rigorous assessment of best practices unveiled innovative strategies that could enhance financial sustainability across PHEIs.

4. Implications for Institutional Performance: This theme established a direct correlation between strategic cost management and institutional outcomes, offering insights into the long-term sustainability of PHEIs.

Through this NVivo-assisted thematic analysis, deeper understanding of strategic cost management emerged, transcending superficial frequency counts to yield genuinely contextualised insights (Braun and Clarke, 2006).

Validity and Reliability

Triangulation serves as an effective approach to validate research findings, ensuring that the inferences drawn are robust and credible (Renz, Carrington and Badger, 2018). Incorporation of supplementary data from diverse sources further augmented the reliability of the study, converging on similar conclusions and thereby reinforcing the integrity of the research outcomes.

Analysis and Discussion

Analysis

Existing Cost Management Practices

PHEIs in Ghana face numerous challenges in managing costs while maintaining the quality of the education they provide. This section presents the analysis of the current strategic cost management practices used by these institutions based on qualitative reports, documents and the academic literature.

PHEIs' Budgeting Approach

The study highlighted budgeting as a fundamental strategic practice among Ghanaian PHEIs for efficient resource allocation. However, challenges like limited financial resources, deficient financial management systems and transparency issues hinder effective implementation. Public universities in Ghana face similar obstacles, including inadequate financial data and restricted information availability, leading to suboptimal outcomes. Addressing these challenges requires significant investment in robust financial management systems and comprehensive staff training. Effective budgeting not only supports strategic objectives, but also improves operational cost efficiency. Transparent financial systems, skilled personnel and accurate data are essential for successful budget formulation and forecasting, ensuring financial sustainability and long-term success in PHEIs.

Table 5 reveals a continuous increase in education expenditure at PHEIs in Ghana from 2017 to 2021. The standard unit cost per student rose from GH₵ 4,791 to GH₵ 6,037 during this period. However, the actual unit cost consistently exceeded the standard unit cost, with variances ranging from GH₵ 2,272 to GH₵ 4,155. The percentage variance between the standard and actual unit costs also grew each year, reaching 69% in 2021. These findings indicate potential shortcomings in budgetary and planning systems that could impact the quality of education. To address this, PHEIs should undertake a comprehensive analysis of their cost structures, diversify funding sources, leverage technology for operational optimisation and proactively ensure the continued delivery of quality education.

Table 5: PHEIs Unit Cost Analysis

Year	PHEIs Students Enrolment	PHEIs Standard Unit Cost (Gh₵)	PHEIs Actual Unit Cost (Gh₵)	Variance (Gh₵)	% Variance
2017	448,756	4,791	7,063	(2,272)	(47)
2018	483,929	5,200	7,726	(2,526)	(49)
2019	517,569	5,447	8,614	(3,167)	(58)
2020	543,525	5,655	8,870	(3,215)	(57)
2021	565,877	6,037	10,192	(4,155)	(69)

Source: Author's Analysis of Data from the GMoE

PHEIs' Financial Reporting

The study underscored the critical role of financial reporting in Ghanaian PHEIs for cost management, regulatory compliance and financial oversight. Despite acknowledged concerns regarding accuracy, robust financial reporting facilitates informed decision-making in resource allocation and investment, thereby bolstering transparency in reporting to stakeholders such as governmental bodies and donors. Key financial statements like the balance sheet and cash flow statement offer essential insights, albeit potentially incomplete in capturing all revenue streams. Integrating financial reporting with strategic cost management strategies is essential to optimise resource allocation and achieve cost efficiencies while upholding educational excellence.

Table 6 provides an overview of Ghanaian PHEIs' financial performance from 2017 to 2021. These institutions consistently operated at a deficit, with a cumulative operating deficit of GH¢ 6 761 722 681. The deficit increased progressively, reaching a peak of GH¢ 1 923 896 933 in 2021. This indicates an unsustainable situation where expenditure exceeds earnings. The annual financial operating gap percentage, which measures the extent of the deficit, ranged from 34% to 53% over the five-year period, averaging 45%. On average, PHEIs spent 45% more than they generated in revenue. To address this financial challenge, they should focus on increasing revenue streams and reducing operating costs. Exploring alternative funding sources such as partnerships with private sector organisations or international entities could be a viable strategy. It is also essential to evaluate spending patterns and identify opportunities for cost reduction without compromising educational quality.

Table 6: Summary PHEIs' Financial Performance

Year	PHEIs Total Operating Income	PHEIs Total Operating Expenditure	Surplus/(Deficit)	% PHEIs Annual Financial Operating Gap
	GH¢	GH¢	GH¢	
2017	2 048 080 422	3 135 615 966	(1 087 535 544)	(53)
2018	2 761 343 353	3 686 439 158	(925 095 805)	(34)
2019	3 030 741 114	4 397 211 984	(1 366 470 870)	(45)
2020	3 319 759 621	4 778 483 150	(1 458 723 529)	(44)
2021	3 789 513 384	5 713 410 317	(1 923 896 933)	(51)
Total	**14 949 437 894**	**21 711 160 575**	**(6 761 722 681)**	**(45)**

Source: Author's Analysis of Data from the GMoE

Key Economic Indicators in Ghana (2017-2023)[1]

PHEIs' Resource Allocation Approach

The study emphasised the critical role of resource allocation in Ghanaian PHEIs' strategic processes, involving the distribution of funding, time, and personnel to achieve institutional goals. Effective allocation requires that resources be prioritised based on strategic importance and stakeholder needs, including students, faculty, and staff. However, some institutions struggle with resource allocation due to limited funding and conflicting priorities. Stakeholder engagement is vital to ensure that allocation decisions align with institutional objectives and meet diverse needs. In Ghanaian PHEIs, Full-time Equivalent (FTE) is commonly used to allocate educational costs, but it has limitations, assuming uniform resource needs across courses and neglecting non-academic services. Activity-based costing offers a more nuanced approach by accounting for specific activity requirements and could enhance resource allocation accuracy, particularly for specialised courses. Adopting ABC and adjusting allocation methods based on student characteristics are suggested strategies to improve resource allocation in PHEIs.

1

Year	2017	2018	2019	2020	2021	2022	2023
Inflation Rate (%)	12.37	9.84	7.14	9.89	9.98	54.10	23.20
USD/GHS	4.42	4.82	5.25	5.61	5.82	8.45	11.16
EURO/GHS	5.30	5.50	5.87	6.44	6.87	8.82	12.08
GBP/GHS	5.97	6.11	6.72	7.25	8.00	10.30	13.92

Source: Bank of Ghana, Ghana Statistical Service

PHEIs' Procurement Practices

The study found that procurement is a critical cost management practice for Ghanaian PHEIs, essential for obtaining goods and services at optimal prices while maintaining quality standards. However, issues in relation to the transparency and impartiality of procurement processes have led to unproductive expenditure and inefficiencies. A lack of transparency, inadequate controls and limited competition are significant challenges. Effective procurement practices should enhance transparency, competition and efficiency, and promote savings. Key strategies include competitive bidding, standardisation, and supplier relationship management. Despite the benefits, obstacles like resource constraints, skills limitations, and regulatory compliance challenges can hinder successful implementation.

PHEIs' Cost Control Practices

The study found that Ghanaian PHEIs commonly adopt cost control as a crucial approach to manage expenses and enhance financial sustainability. This involves identifying and eliminating unnecessary costs while maintaining service quality. However, implementing effective cost control measures faces several challenges, including inadequate financial management systems and a lack of a cost-conscious culture. Insufficient cost management policies and procedures further complicate these efforts.

To improve cost control, PHEIs should develop comprehensive cost management policies, promote a culture of cost consciousness, invest in staff training, enhance monitoring systems and implement accountability measures. These steps can help to ensure consistent and effective cost control, ultimately supporting financial sustainability and performance.

Challenges and Opportunities in Cost Management

The study's findings revealed that Ghanaian PHEIs face significant obstacles in strategic cost management. Financial constraints limit their capacity to invest in resources and infrastructure. Inadequate resources such as staffing and equipment further hinder effective cost management. The institutional culture, including resistance to change and a lack of awareness of the importance of cost management, poses additional challenges.

Effective strategic cost management presents numerous opportunities and benefits. It enhances financial sustainability by improving financial management and resource allocation and optimises the use of resources, leading to improved operational efficiency. It also enhances accountability by enhancing tracking and reporting of expenses, which can improve the institution's public image and reputation.

Best Practices and Innovative Approaches in Cost Management

Ghanaian PHEIs currently encounter considerable financial hurdles, calling for the implementation of effective cost management approaches. This section outlines several best practices and innovations that these institutions can adopt to tackle their financial challenges and uphold the quality of education they offer.

Utilising Technology

The research showed that Ghanaian PHEIs are increasingly turning to technology to address financial challenges. They leverage virtual learning environments, digital libraries and online platforms to minimise physical classroom requirements, and reduce building maintenance costs and expenses related to textbooks. This enhances the efficiency of course delivery and improves students' access to learning material, regardless of time or location.

The University of Cape Town (UCT) in South Africa provides a notable example of effective technology integration. Through its "ICTS for Teaching and Learning" initiative, it offers faculty and students virtual environments, e-books, and online resources. This approach reduces

dependence on physical textbooks and classroom space. Moreover, UCT's adoption of an enterprise resource planning (ERP) system enhances administrative efficiency, leading to cost savings. Collaboration with technology companies and other universities further drives innovations such as open educational resources, underscoring UCT's leadership in enhancing cost management and education quality across African HEIs.

Collaboration

The study's results stressed that collaboration among HEIs is essential to achieve cost savings and operational efficiency. By pooling resources such as facilities, equipment and personnel, institutions can avoid duplication of efforts and capitalise on economies of scale. This collaborative approach not only reduces costs, but also stimulates the development of new academic programmes and research initiatives, thereby enhancing overall academic quality. For instance, partnerships like shared research facilities in fields such as biotechnology or environmental science can lead to significant savings and improved research capabilities. Initiatives similar to Australia's Victorian Life Sciences Computation Initiative (VLSCI), where universities share high-performance computing resources, illustrate how such partnerships generate financial savings and expand research capacities. Therefore, promoting collaboration among HEIs is a promising strategy for effective cost management and academic excellence.

Efficient Budgeting

The results emphasised that efficient budgeting is essential for HEIs to manage costs and allocate resources to priority core activities. This ensures that resources are directed towards critical initiatives while minimising expenditure on less essential ones. By adopting a performance-based budgeting model, institutions link budget allocations directly to measurable performance outcomes. This promotes accountability and transparency in resource allocation decisions, requiring institutions to justify how funds support strategic objectives. For example, the University of Dar es Salaam in Tanzania has successfully implemented performance-based budgeting, enhancing its ability to allocate resources strategically and reduce costs. This approach not only demonstrates institutional accountability to stakeholders, but also improves academic standards by aligning financial decisions with performance metrics. Efficient budgeting practices, including prioritisation and performance linkage, are essential for HEIs seeking to optimise resource utilisation and enhance operational efficiency while maintaining fiscal responsibility.

Streamlining Administrative Processes

The study highlighted the critical importance of efficient budgeting in HEIs to manage costs effectively and prioritise core activities. A performance-based budgeting model aligns allocations with measurable outcomes, enhancing accountability and transparency in resource allocation. This requires institutions to justify fund usage for strategic objectives while optimising resource allocation. Efficient administrative processes are crucial for cost management in HEIs, improving efficiency and reducing expenses by automating tasks such as record-keeping, payroll, and procurement. Digital workflows enhance accuracy and timeliness, exemplified by our success at the Catholic University of Ghana with an electronic billing system that reduced processing times from 30 to two days, cutting labour costs and enhancing operational efficiency. This demonstrates technological advancements' potential to achieve significant savings and operational improvements while promoting transparency and accountability in administrative tasks.

Increasing Revenue Streams

The findings stressed that HEIs must diversify their revenue sources to reduce budget constraints and decrease dependence on government financing. Strategies such as securing research funding, forming partnerships with the private sector, soliciting donations and offering tailored short courses and non-degree programmes can generate additional revenue. These approaches not only bolster financial stability, but also create opportunities for faculty, students, and industry engagement.

Managing Staffing Costs

The study concluded that HEIs must manage staffing costs effectively for financial sustainability. Strategies like hiring part-time or contract workers and automating administrative tasks with technology can help

achieve this goal. Hiring part-time or contract workers offers flexibility and cost savings while ensuring fair compensation and compliance with labour regulations. Automating administrative processes boosts productivity and reduces staffing needs, but it is crucial to maintain instructional and service quality. Cost-cutting measures should be fair to prevent disproportionate impacts on marginalised employees.

Georgia State University (GSU) and the University of Central Florida (UCF) have successfully controlled staffing costs through strategic initiatives. Georgia State University's "Student Success" programme reduced the number of administrative staff while improving academic advising and student support with technological advancements, leading to higher graduation rates and fewer student dropouts. Similarly, the UCF implemented a hiring freeze, increased use of part-time faculty, and a voluntary retirement programme to maintain budget stability without compromising educational quality and student services.

Prioritising Asset Management

The analysis stressed the importance of effective asset management for financial sustainability in HE. Regular audits identify underutilised or unnecessary assets, allowing institutions to optimise resource allocation. Asset tracking systems and holding staff accountable ensure efficient utilisation. Responsible disposal of assets can free up resources for critical needs, while leasing or renting equipment offers cost savings and access to the latest technology without long-term commitments.

The University of California, San Diego (UCSD), and the University of Wisconsin-Madison exemplify successful asset management programmes. The UCSD's initiative focused on equipment and facilities optimisation, resulting in annual savings of $5 million. The University of Wisconsin-Madison achieved $4 million in savings within a year through comprehensive asset audits and tracking systems. Both institutions effectively reduced unnecessary spending and redirected resources to support their core educational missions. Prioritising asset management enables institutions to enhance financial efficiency and maintain high-quality education and services.

Table 7 below summarises the various strategies arising from the analysis.

Table 7: Revenue and Cost Management Measures

Cost Area	Cost Management Strategies
Utilising Technology	Leveraging virtual environments to reduce physical infrastructure and textbook costs.
Encouraging Collaboration	Pooling resources to avoid duplication and achieve economies of scale.
Adopting Efficient Budgeting	Implementing performance-based budgeting to link allocations with outcomes.
Streamlining Administrative Processes	Automating tasks to enhance efficiency and reduce labour costs.
Managing Staffing Costs	Hiring part-time or contract workers to reduce staffing expenses.
	Automating administrative tasks.
Prioritising Asset Management	Conducting audits and optimising the use of existing assets.
Monitoring and Evaluating Cost Management Approaches	Systematic tracking and evaluation of financial performance.
Engaging Stakeholders	Involving stakeholders in decision-making to foster a cost-conscious culture.
Developing a Cost Management Plan	Creating a comprehensive plan that includes efficiency measures and resource optimisation.
Revenue	**Revenue Optimisation Strategies**
Increasing Revenue Streams	Securing research funding.
	Forming private sector partnerships.
	Offering tailored short courses and non-degree programmes.

Source: Research Analysis

Monitoring and Evaluating Cost Management Approaches

The study's results revealed that it is essential for HEIs to monitor and evaluate cost management approaches. Implementing robust systems allows institutions to systematically track and assess their financial performance, evaluate the efficiency of cost management practices, and pinpoint areas for improvement. This comprehensive approach

ensures that resources are optimally allocated and enables evaluation of the effectiveness of cost-saving measures. Various methodologies are employed by HEIs, including regular financial reporting, audits, analysis of budget variances, and assessment of cost-saving impacts. These practices help institutions to proactively identify potential cost overruns, uncover operational inefficiencies and make informed decisions to enhance resource allocation and improve cost management strategies.

Engaging Stakeholders

The study indicated that effective cost management requires HEIs to engage stakeholders. Actively involving stakeholders in decision-making fosters transparency, accountability and a sense of ownership within the institution. Establishing clear communication channels and facilitating interactions such as meetings and consultations are crucial for effective engagement. These platforms enable stakeholders to contribute their opinions, identify cost-saving opportunities, and align cost management with institutional goals. Stakeholder engagement also raises awareness of financial challenges, promoting a culture of cost-consciousness and dedication to effective cost management. Moreover, stakeholders' insights and suggestions can optimise resource allocation and improve operational efficiency within HEIs.

Developing a Cost Management Plan

The study's results emphasised the need for African HEIs to develop a comprehensive cost management plan to achieve their objectives. This strategic framework enables institutions to efficiently manage financial resources and address unique challenges in a cost-effective manner. It includes strategies such as efficiency measures, streamlined processes, technology adoption and exploring alternative revenue streams. By implementing these strategies, HEIs can enhance financial viability and resource management. The plan also defines the roles and responsibilities of stakeholders, including administrators, faculty, finance personnel, and governing bodies. Their expertise and efforts make a significant contribution to achieving cost management goals. Beyond financial benefits, the plan promotes transparency, accountability, informed decision-making and alignment with strategic objectives. Through systematic implementation, institutions can strike a balance between cost reduction and maintaining or improving education and services for students and stakeholders.

Implications for Institutional Performance

The study showed that cost management practices wield a profound influence on the institutional performance of Ghanaian PHEIs. Institutions that adeptly manage their costs through rigorous strategic planning and judicious resource allocation are more likely to attain enhanced financial sustainability and superior operational outcomes. Conversely, those with suboptimal cost management practices face heightened risks of financial instability, which can severely impede their growth and developmental trajectories. The study thus accentuates the indispensable role of effective cost management in fostering robust institutional performance, thereby establishing a clear and critical linkage between these domains.

Discussion

The analysis of strategic cost management practices within Ghanaian PHEIs offers significant insights into the current landscape and its implications for financial sustainability and institutional performance. These institutions employ various strategic cost management practices, including budgeting, financial reporting, resource allocation, procurement and cost control (Benner, Grant and O'Kane, 2022). However, these practices are often hampered by challenges such as limited financial resources, inadequate financial management systems, and transparency issues (Sheikh, Chandler, Hussain and Timmons, 2022).

Budgeting is critical for PHEIs in Ghana, yet its effectiveness is hindered by resource constraints and transparency issues (Tsyhaniuk and Akenten, 2021). Insufficient financial data leads to suboptimal outcomes, necessitating investment in robust financial systems and staff training for better planning and forecasting (Al-Filali, Abdulaal, Alawi and Makki, 2024). Financial reporting remains fundamental despite concerns about accuracy, impacting resource allocation and accountability (Jongbloed and Vossensteyn, 2016) and thus serves as a cornerstone for informed decision-making and cost reduction strategies.

Resource allocation in Ghanaian PHEIs involves balancing strategic priorities amidst limited funding and conflicting needs (Newman and Duwiejua, 2015). Although FTE methods are transparent, they overlook resource disparities; hence, ABC is suggested for accurate resource allocation (Olariu and Brad, 2022). Procurement practices are crucial to obtain goods efficiently, yet challenges like transparency and competition persist (Hasanah, 2024). Enhancing procurement efficiency through competitive bidding and supplier management is essential amidst resource constraints (Porter, 2008).

Cost control strategies are vital for financial sustainability, but their effectiveness is hampered by inadequate financial systems and the organisational culture (Finne, Haga and Sundvik, 2023). Establishing comprehensive policies and promoting a cost-conscious culture are vital for effective implementation (Ameen, Ahmed and Abd Hafez, 2018). Ghanaian PHEIs face significant challenges in strategic cost management, including financial constraints and cultural barriers (Hayward, 2020). However, effective practices offer opportunities for improved efficiency and accountability (Torneo, 2020).

The study's findings provide actionable insights for Ghanaian HEIs to enhance financial sustainability. Key strategies include investing in robust financial systems and staff training to improve budgeting accuracy and financial reporting. Implementing ABC for efficient cost allocation and transparent procurement practices could achieve cost savings and operational efficiency. Cultivating a cost-conscious environment through ongoing staff training is crucial for effective cost control, providing a comprehensive framework to maintain high educational standards amidst financial challenges.

Conclusion

The study underscores the critical importance of robust cost management practices for Ghanaian PHEIs, emphasising effective budgeting and financial reporting. Despite limited resources, inadequate systems and transparency issues leading to a 45% overspending rate, there are clear pathways for improvement. Key recommendations include investing in advanced financial management systems, staff training, exploring diverse funding sources, optimising operations with technology and ensuring continuous education delivery. Drawing on best practices from institutions in Nigeria, Ghana, Scotland and Belgium, the study highlights the efficacy of efficient budgeting, streamlined processes, collaboration and technology adoption. Monitoring, evaluation and comprehensive planning are essential for success. Future research should focus on identifying effective approaches and the factors influencing their adoption. Policymakers, administrators and stakeholders must be actively involved and capacity-building programmes are crucial to enhance skills and knowledge. These strategies would collectively advance cost management in Ghanaian PHEIs and similar contexts in developing countries.

Contribution to Theory and Practice

The study's key contributions include:
Current Cost Management Practices (RQ1): Ghanaian PHEIs employ diverse strategies to enhance operational efficiency and ensure financial sustainability. These include detailed annual budgets and financial plans for judicious resource allocation, cost monitoring and control across various domains, optimal utilisation of faculty, facilities, and administrative staff and competitive tuition structures. Transparent financial reporting systems track expenditure and revenue, ensuring accountability.

Challenges and Opportunities (RQ2): Significant challenges include limited access to funding and loans, regulatory and accreditation cost pressures, substantial infrastructure maintenance costs and the need for competitive faculty and staff compensation within tight budgets. Opportunities for improvement include leveraging technology for administrative efficiency, forging strategic industry and government partnerships, diversifying revenue streams through innovative programmes and refining student recruitment and retention strategies.

Best Practices and Innovative Approaches (RQ3): Recognised best practices include embracing lean management principles to streamline operations, outsourcing non-core activities and adopting sustainable practices. These approaches reduce costs and improve operational efficiency. Offering robust financial aid and scholarships attracts and retains talented students, enhancing institutional stability and academic excellence.

Impact on PHEI Performance (RQ4): Effective cost management significantly enhances the performance of Ghanaian PHEIs by ensuring sustainable revenue generation and controlled expenditure, supporting faculty development, research and student services. Strategic resource allocation improves academic quality and competitiveness. Transparency and accountability in fulfilling stakeholder expectations bolster institutional credibility and trust.

Suggestions for Future Research

It is essential to study the impact of cost structures on education quality in Ghana's PHEIs. Researchers could evaluate cost components, propose strategies for cost reduction while maintaining quality and consider external factors like government policies and funding. Future research could also assess the effects of innovative cost management approaches such as technology integration, streamlined processes, collaboration and diversified revenue streams on the financial sustainability and effectiveness of Ghana's PHEIs. This evaluation, considering benefits, challenges and impact on education quality, would guide the implementation of effective cost management strategies to optimise resources and enhance financial sustainability. Lastly, future inquiries could assess the effectiveness of alternative funding sources like grants, partnerships and fundraising in improving financial sustainability among Ghana's PHEIs. Analysing their benefits, challenges and impact on education quality would inform decisions regarding diversifying funding streams and ensuring long-term financial stability in the sector.

References

Al Faruq, M. S. S., Rozi, M. A. F., and Sunoko, A. (2023). Implementation of the Juran Trilogy in Improving the Quality of Islamic Higher Education. *Al-Hayat: Journal of Islamic Education* 7(2), 668-680.

Alajoutsijärvi, K., Alon, I., and Pinheiro, R. (2021). The marketisation of higher education: Antecedents, processes, and outcomes. In *The marketisation of higher education: Concepts, cases, and criticisms* (pp. 17-45). Cham: Springer International Publishing.

Al-Filali, I. Y., Abdulaal, R. M., Alawi, S. M., and Makki, A. A. (2024). Modification of strategic planning tools for planning financial sustainability in higher education institutions. *Journal of Engineering Research 12*(1), 192-203.

Alomenu, C. (2023). *Quality service delivery in tertiary institutions in Ghana: a comparative study of public and private universities*. Doctoral dissertation, London Metropolitan University.

Ameen, A. M., Ahmed, M. F., and Abd Hafez, A. A. (2018). Strategic cost management in PHEIs: Concepts, principles, and techniques. *International Journal of Economics and Financial Issues 8*(4), 45-53.

Appiah, K. O. (2010, June). An Application of Activity Based Costing in Public Higher Learning Institutions in Ghana: A Pilot Study. *Conference Proceedings World Academy of Science, Engineering and Technology*.

Benner, M., Grant, J., and O'Kane, C. (2022). Full Economic Costing (FEC) in UK universities: Best practices and challenges. *Higher Education 83*(3), 371-388. https://doi.org/10.1007/s10734-021-00704-2.

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology 3*(2), 77-101.

Carrington, R., O'Donnell, C., and Prasada Rao, D. S. (2018). Australian university productivity growth and public funding revisited. *Studies in Higher Education 43*(8), 1417-1438.

Chumba, P. (2023). Resource Dependency Theory in higher education institutions: Managing external dependencies. *Journal of Management and Governance 27*(2), 253-275.

Cooper, R., and R. Slagmulder. (1997). *Target Costing and Value Engineering*. Portland, OR: Productivity Press.

Crew, S., and Crew, V. (2020). Models of change in higher education. In *The international encyclopedia of higher education systems and institutions* (pp. 2062-2073). Dordrecht: Springer Netherlands.

Davis, J. A., and Farrell, M. A. (2016). *The market oriented university: Transforming higher education*. Edward Elgar Publishing.

De Jesus, D., and Alves, H. (2023). Strategic cost management in private higher education institutions: The application of the Balanced Scorecard. *Management Accounting Research 53*, 100818. https://doi.org/10.1016/j.mar.2022.100818

Estermann, T., and Claeys-Kulik, A. L. (2013). *Financially sustainable universities: Full costing progress and practice*. European University Association.

Ewang, A. T. (2019). *Reforming Public Finance Management in Kenya: Implementational Challenges on the Principle of Openness and Accountability in Public Finance Management*. Doctoral dissertation, University of Nairobi.

Finne, G., Haga, J., and Sundvik, D. (2023). Cost behaviour and reporting frequency during the COVID-19 outbreak. Available at SSRN 4422731, 1-54.

Fullerton, R.R., and McWatters, C.S. (2004). An Empirical Examination of Cost Accounting Practices used in Advanced Manufacturing Environments. *Advances in Management Accounting Vol. 12* (pp. 85-113). Leeds: Emerald Group Publishing Limited. https://doi.org/10.1016/S1474-7871(04)12004-2

Ghana Ministry of Education. (2018). *Education Sector Performance Report 2018*. Retrieved from: https://sapghana.com/data/documents/Ghana-Education-Sector-Analysis-2018.pdf. Accessed on: 04/07/2024.

Ghana Ministry of Education. (2019). *Education Sector Performance Report (ESPR) 2019*. Retrieved from: https://ndpc.gov.gh/media/Ministry_of_Education_APR_2019.pdf. Accessed on: 04/07/2024.

Hasanah, N. (2024). Governance structures and transaction cost mitigation in higher education: Theoretical perspectives. *Journal of Institutional Economics 20*(1), 1-21.

HEFCE. (2015). *Research Excellence Framework (REF)*. Higher Education Funding Council for England.

Hong, Q. N., Gonzalez- Reyes, A., and Pluye, P. (2018). Improving the usefulness of a tool for appraising the quality of qualitative, quantitative and mixed methods studies, the Mixed Methods Appraisal Tool (MMAT). *Journal of Evaluation in Clinical Practice 24*(3), 459-467.

Horngren, C. T., Datar, S. M., and Rajan, M. V. (2020). *Cost Accounting: A Managerial Emphasis*. Pearson.

Hosono, A. (2009). Kaizen: Quality, productivity and beyond. *Introducing KAIZEN in Africa 23*.

Irawan, A. P., Supriyatna, E., Widjaja, I., and Lin, L. L. C. (2021, August). The Implementation of Basic Principles of Financial Management to Improve Higher Education Reputation. In *International Conference on Economics, Business, Social, and Humanities (ICEBSH*

2021) (pp. 1510-1514). Atlantis Press.
Jongbloed, B., and Vossensteyn, H. (2016). University funding and student funding: International comparisons. *Oxford Review of Economic Policy 32*(4), 576-595.
Kaplan, R. S., and Anderson, S. R. (2007). *Time-driven activity-based costing: a simpler and more powerful path to higher profits*. Harvard Business Press.
Kaplan, R. S., and Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Harvard Business Press.
Kaplan, R. S., and Norton, D. P. (2001). *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*. Harvard Business Review Press.
Kezar, A., and Bernstein-Sierra, S. (2024). Commercialization of higher education. In *Second handbook of academic integrity* (pp. 1867-1887). Cham: Springer Nature Switzerland.
Kim, J., and Chung, H. (2023). Accrual-Based Accounting and Fiscal Performance: Empirical Evidence from Higher Education Institutions. *Public Performance and Management Review*, 1-22. https://doi.org/10.1080/15309576.2023.2178468.
Kimball, B. A., and Iler, S. M. (2023). *Wealth, Cost, and Price in American Higher Education: A Brief History*. JHU Press.
Kiriri, P. (2022). Strategic frameworks for cost management in private higher education institutions. *Journal of Strategic Management 10*(2), 143-156. https://doi.org/10.1108/JSMA-03-2021-0012
Lambrechts, J., and Lepori, B. (2023). Performance-based funding in higher education: Lessons from European experiences. *Higher Education Quarterly* 77(1), 1-16. https://doi.org/10.1111/hequ.12354
Langfield-Smith, K., Thorne, H., and Hilton, R. W. (2018). *Management accounting: Information for creating and managing value* 7th ed. Australia: McGraw-Hill Education.
McMillan, J. (2014). The impact of Full Economic Costing (FEC) on financial management in UK universities. *Journal of Higher Education Policy and Management 36*(1), 74-87. https://doi.org/10.1080/1360080X.2013.849832.
Nartey, E., Aboagye-Otchere, F. K., and Simpson, S. N. Y. (2022). Management control and supply chain operational performance of public health emergency to pandemic control. *Management Research Review 45*(3), 398-435.

Ndoloka, V. M. (2019). *Overhead allocation model for universities - a case for Strathmore University in Kenya*. Doctoral dissertation, Strathmore University, UK.
Newman, E., and Duwiejua, M. (2015). Higher education funding in Ghana: Challenges and strategies for improvement. *African Education Review 12*(2), 211-228. https://doi.org/10.1080/18146627.2015.1036578
Nicol, D., and Coen, A. (2023). Research-intensive universities and the Full Economic Costing model: Experiences from the UK. *Journal of Higher Education Policy and Management* 45(2), 145-161. https://doi.org/10.1080/1360080X.2022.2067078
Oketch, M. (2023). What is the appropriate higher education finance model for Africa? Some reflections. *South African Journal of Higher Education 37*(6), 131-152.
Olariu, G. V., and Brad, S. (2022). Preventive Risk Management of Resource Allocation in Romanian Higher Education by Assessing Relative Performance of Study Programs with DEA Method. *Sustainability 14*(19), 12527.
Oyewole, O. (2022). The allocation of subventions to private higher education institutions in Ghana: A critical review. *Journal of Finance and Accounting 8*(1), 30-46.
Pavlatos, O. (2018). Strategic cost management, contingent factors and performance in services. *Journal of Accounting and Management Information Systems 17*(2), 215-233.
Porter, M. E. (1980). *Competitive Strategy: Techniques for Analysing Industries and Competitors*. Free Press.
Porter, M. E. (2008). *Competitive advantage: Creating and sustaining superior performance*. Simon and Schuster.
Pucciarelli, F., and Kaplan, A. (2016). Competition and strategy in higher education: Managing complexity and uncertainty. *Business Horizons 59*(3), 311-320.
Renz, S. M., Carrington, J. M., and Badger, T. A. (2018). Two strategies for qualitative content analysis: An intramethod approach to triangulation. *Qualitative Health Research 28*(5), 824-831.
Ruiz-Morris, M. A. (2023). *A Phenomenological Inquiry of Senior Executive Leaders' Experience About Public Higher Education Funding*. Doctoral dissertation, Delaware State University.

Sánchez-Rebull, M. V., Niñerola, A., and Hernández-Lara, A. B. (2023). After 30 Years, What Has Happened to Activity-Based Costing? A Systematic Literature Review. *SAGE Open 13*(2), 21582440231178785.

Sarrico, C. S. (2020). Performance indicators in higher education. In *The International Encyclopedia of Higher Education Systems and Institutions* (pp. 2219-2222). Dordrecht: Springer Netherlands.

Shand, D., and Bowden, J. (2022). Economic cost theory and resource allocation in higher education: A case study. *Journal of Education and Work 35*(1), 16-33. https://doi.org/10.1080/13639080.2022.2025401

Sheikh, Z., Chandler, T., Hussain, A., and Timmons, S. (2022). The role of Full Economic Costing in the strategic management of UK universities. *Journal of Higher Education Policy and Management 44*(4), 378-392. https://doi.org/10.1080/1360080X.2021.1985846

Simons, H. (2019). Transaction cost theory in higher education: Implications for governance and strategy. *Journal of Institutional and Theoretical Economics 175*(1), 12-29. https://doi.org/10.1628/jite-2019-001

Suhail, G. (2017). *Analysis of public university facilities cost.* Master›s thesis, Colorado State University.

Sześciło, D. (2020). Public financial management. In *Public Administration in Central Europe* (pp. 196-209). Routledge.

Tamrat, W. (2022). *Higher Education in Ethiopia: Themes and Issues from an African Perspective*. The Netherlands: Brill.

Teixeira, P., Biscaia, R., and Rocha, V. (2021). Competition for Funding or Funding for Competition? Analysing the Dissemination of Performance-based Funding in European Higher Education and its Institutional Effects. *International Journal of Public Administration 45*(2), 94-106.

Tetteh, L. A., Agyenim-Boateng, C., Simpson, S. N. Y., and Susuawu, D. (2021). Public sector financial management reforms in Ghana: insights from institutional theory. *Journal of Accounting in Emerging Economies 11*(5), 691-713.

Torneo, A. R. (2020). Public administration education in the Philippines 1951-2020: History, challenges, and prospects. *Journal of Public Affairs Education 26*(2), 127-149.

TRAC Development Group. (2023). *TRAC Guidance: The Transparent Approach to Costing for UK Higher Education Institutions (Vol. 2023)*.

Tsyhaniuk, D. L., and Akenten, W. N. (2021). Examining budgeting and fund allocation in higher education. *Financial Markets, Institutions and Risks* 5(4), 128-138.

Tze Yin, K., Ai Ping, T., Siti Nabiha, A. K., and Sukumar, L. (2023). Does Enterprise Risk Management Influence Performance? Evidence from Malaysian Private Higher Education Institutions. *International Journal of Advanced Research in Economics and Finance* 5(1), 131-146.

Usman, M., and Ab Rahman, A. (2023). Funding higher education through waqf: a lesson from Malaysia. *International Journal of Ethics and Systems 39*(1), 107-125.

Yorks, L., Abel, A. L., and Rotatori, D. (2022). *Strategic human resource development in practice: Leveraging talent for sustained performance in the digital age of AI*. Management for Professionals series. Springer.