



Financial Management in Public Secondary Schools, Arumeru District, Tanzania: An Econometric Case Study

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The main purpose of this study was to investigate the skills of heads of schools in managing unit costs for financing students in public secondary schools in the Arumeru District Council. Effective financial management is critical for optimizing the limited resources available to public schools, and the competence of school heads in handling unit costs plays a pivotal role in this regard. The research employs a mixed-methods approach, combining quantitative surveys and qualitative interviews with school heads, teachers, and district education officers. A sample size of 30 heads of secondary schools, 60 secondary school teachers, and 1 district education officers were used in this research. The findings reveal that while some heads of schools demonstrate proficient financial management skills, others lack the necessary expertise, leading to inefficiencies in resource allocation and utilization. Also the study revealed that the head of schools are involved in the process of making budget. However the key factors influencing their financial management skills include professional training, experience, and support from district education authorities. The study underscores the need for targeted professional development programs to enhance the financial

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management capabilities of school heads. Recommendations include the implementation of continuous training workshops, peer learning opportunities, and stronger support mechanisms from the district education offices. By improving the financial management skills of school heads, public secondary schools in the Tanzania can better allocate resources, thereby enhancing educational outcomes and ensuring sustainable funding mechanisms.

Keywords: Unit cost; financial management; public secondary schools; Arumeru District Council; educational finance; school administration; professional development.

1. INTRODUCTION

In the landscape of education, efficient financial management is paramount to the success and sustainability of schools, particularly in resource-constrained settings such as public secondary schools in Tanzania. The objectives of this paper are; to identify the key skills required by heads of schools for effective management of unit costs. To assess the current skill levels of heads of schools in managing unit costs and to propose strategies for enhancing the financial management skills of heads of schools. The concept of unit cost refers to the average expenditure required to educate one student, is a critical component of financial management. It encompasses various elements including teacher salaries, classroom maintenance, learning materials, and administrative expenses. The role of school heads in managing these costs is pivotal; their skills in financial oversight directly impact the allocation and utilization of resources.

The Arumeru District in Tanzania presents a unique case for examining these dynamics. As in many developing regions, school heads in Arumeru are often tasked with navigating complex financial landscapes without sufficient training in financial management. This study aims to investigate the skills of these school heads in managing unit costs and to identify the gaps and challenges they face. Understanding these aspects is essential for developing targeted interventions that can enhance the financial efficiency and educational outcomes of public secondary schools in the district.

The financial management of public secondary schools is a complex task that requires a deep understanding of various cost factors and effective strategies for resource allocation. The concept of unit cost in education refers to the average cost per student or per unit of educational service provided [1]. The real student unit cost is calculated by considering all the school costs for one year (salaries, examinations and other expenditures) divided by the number of

students (Nkonya, 2011). The concept of unit cost in education involves various direct and indirect expenses associated with educating a student. Previous studies have highlighted the importance of financial literacy, budget planning, and resource management as essential skills for school administrators [2]. Additionally, the ability to analyze financial data and make informed decisions is critical for maintaining the financial health of educational institutions [3].

In some cases especially in private schools unit cost is considered as the average fee of student per year. That why the government has been urged to commission an independent specialist to analyse and suggest the cost of education in Tanzania before adopting the students' unit costs. In the context of public secondary education in Tanzania, effective financial management is critical for ensuring the sustainability and quality of educational services. The concept of unit cost, which refers to the cost incurred to educate a single student, is central to this management process. Proper understanding and management of unit costs enable school heads to allocate resources efficiently, plan budgets accurately, and make informed decisions that align with the institution's educational goals. However, the skills of heads of schools in managing unit costs remain a significant area of concern.

Public secondary schools in Tanzania face numerous financial challenges, including limited funding, increasing student populations, and financial resource control functions displayed by secondary school heads of public schools was notably low. Lack of proper financial management abilities, a lack of financial guidelines, political influence, and corruption among committee members were issues related to this reality. These challenges necessitate a proficient approach to financial management, particularly in calculating and managing unit costs [4]. The heads of schools play a pivotal role in this process, as they are directly involved in budget preparation, resource allocation, and expenditure monitoring.

2. LITERATURE REVIEW

Understanding and managing unit costs is a critical skill for heads of schools, ensuring the efficient allocation of resources and the sustainability of educational institutions. This literature review explores various studies related to the financial management skills of school heads, particularly focusing on unit cost management in public secondary schools. It highlights findings from different regions and the specific context of Arumeru District, Tanzania. Studies have shown that many school administrators in developing countries lack adequate training and skills in financial management [5]. This gap in skills can lead to inefficiencies in resource use, misallocation of funds, and ultimately, poor educational outcomes. For instance, Omari [6] highlights that insufficient training in financial management among Tanzanian school heads results in ineffective budgeting and resource allocation, which adversely impacts the quality of education.

Moreover, the Tanzanian education system has undergone various reforms aimed at improving financial management in schools. The 2014 Education and Training Policy emphasizes the need for enhanced financial management training for school administrators [7]. Despite these efforts, the practical implementation of such training programs and their effectiveness remain uncertain, particularly in the Arumeru District.

the study conducted by Nelius [8] on Challenges Facing School Heads in Controlling Finances among Bukombe District Public Secondary Schools, Tanzania, revealed different challenges facing heads of schools in implementing financial control measures including lack of training and transparency, inadequate finances and poor cooperation with stakeholders. This implies that, without proper training, school heads may lack the necessary skills and knowledge to implement effective financial control measures. This deficiency can lead to poor financial management, resulting in inefficient use of resources and potential financial mismanagement. According to Leithwood et al. [9], effective school leadership, including financial management, is crucial for school improvement and student achievement. Training programs tailored to enhance financial literacy among school heads can address this gap.

In Kenya, Mobegi et al. [10] observed in their research that most school heads lacked financial management or accounting skills, leading many to take their accounting records to unqualified accountants to adjust them to their preferences. Additionally, it was found that most school heads were unable to detect errors and irregularities in financial records made by the bursars. Mito & Simatwa (2022) indicated that the head of school training workshops organized by the Kenya Education Management Institute (KEMI) were brief and the trainers lacked expertise in financial management. The lack of expertise among trainers implies that heads of schools are not receiving high-quality training in financial management, which is essential for ensuring proper budgeting, accounting, and financial planning within schools. This gap can lead to mismanagement of funds and inefficiencies in resource allocation. According to Levin and McEwan [11], financial management skills are critical for school leaders to make informed decisions and optimize the use of limited resources to enhance educational quality.

According to Leu and Bryen [12], a study performed in six sub-Saharan countries, namely, Ghana, Guinea, Ethiopia, Tanzania, Uganda, and Madagascar, indicated that heads of schools face serious problems with students who cannot pay fees, teacher shortages, and inadequate teaching and learning resources. The inability of students to pay fees highlights significant economic barriers to accessing education in sub-Saharan Africa. This can lead to high dropout rates, especially among students from low-income families, and perpetuates the cycle of poverty and educational inequality. According to the World Bank, school fees and related costs are a major barrier to enrollment and retention in sub-Saharan Africa (World Bank, 2018).

Naidoo (2019) in the study Professional Development of School Principals: A South African Perspective revealed that ongoing professional development, including mentorship and peer learning, significantly enhances the financial management skills of school leaders. This implies that implementing similar programs in Arumeru District can yield positive results especially on management of students' unit cost. Similarly, Bush and Oduro (2006) in his study on New Principals in Africa: Preparation, Induction and Practice found that there is significant gap in leadership training, particularly in financial management. School leaders often lack the necessary skills to manage resources effectively.

Implication, Investment in leadership training programs is essential for improving financial management in schools.

Given the critical role that heads of schools play in managing finances and the significant challenges they face, it is imperative to assess their skills in handling unit costs. This assessment will provide insights into the current state of financial management in public secondary schools and identify areas where further training and support are needed. Understanding the skills of heads of schools in this domain will also help policymakers design more effective training programs and interventions to enhance financial management practices, ultimately leading to better educational outcomes.

3. MATERIALS AND METHODS

The study employs a mixed-methods approach, where by qualitative and quantitative data were collected simultaneously and analyzed differently and the results will be merged or integrated [13]. Data were collected from heads of public secondary schools in Arumeru, using structured questionnaires and in-depth interviews to gather insights into their financial management practices and skills. The quantitative data were analyzed using statistical tools, while thematic analysis is applied to the qualitative data.

The target population for this study includes all heads of public secondary schools in the Arumeru District Council. Additionally, teachers, district education officers, and financial management staff are included to provide supplementary insights. A stratified random sampling technique is employed to ensure representation across different school types and sizes. A sample size of 30 heads of schools, 60 teachers, and 1 district education officers is determined based on statistical power calculations and practical considerations.

4. RESULTS AND DISCUSSION

Understanding of Unit Cost: The respondents were asked if they are aware of the concept of unit cost in the context of secondary education. Their responses are as follows: Clear understanding (20%), somewhat clear understanding (40%), Limited understanding (30%), No understanding (10%). The majority (40%) of respondents have a somewhat clear understanding of the term "unit cost". This indicates that there might be a need for more

targeted training or resources to improve the understanding of unit cost concepts among the heads of schools.

Companies may need to invest in training programs or develop clearer communication materials to ensure that all stakeholders have a consistent understanding of terms like unit cost. This aligns with research by Musheke & Phiri [14] which highlighted the importance of effective communication in improving organizational performance. By addressing the comprehension level of terms like "unit cost," companies can enhance internal processes and decision-making.

Factors Affecting Unit Cost: Respondents were asked to identify the primary factors influencing the unit cost in a secondary school. The following are their responses in percent: Teacher salaries (50%), Classroom maintenance (20%), Administrative costs (10%), and Student-teacher ratio (10%), Infrastructure upgrades (5%), others (5%) Teacher salaries are identified as the primary factor affecting unit cost by half of the respondents. This suggests that salary management is crucial in controlling unit costs. Other factors like classroom maintenance and administrative costs also play significant roles, indicating a need for balanced budget allocation.

Involvement in the budget allocation process: The following are responses from participants on the question if they are involved in budget allocation process. The following are percent of responses highly involved: 60%, moderately involved: 25%, minimally involved: 10% and not involved: 5%. A significant majority of school (60%) heads are highly involved in the budget allocation process, indicating they play a key role in financial decision-making. School heads have a deep understanding of their school's needs and priorities. Their involvement in budget allocation ensures that financial decisions are based on on-the-ground realities and immediate educational needs. This can lead to more effective and targeted use of resources, enhancing the overall quality of education provided [9].

According to Brighthouse & Woods [15] when school heads are actively involved in the budget allocation process, there is likely an increase in accountability and transparency in financial management. School heads can ensure that funds are allocated appropriately and spent efficiently, reducing the risk of financial mismanagement. This enhanced accountability is

crucial for building trust among stakeholders, including teachers, parents, and the wider community.

Improving Efficiency: Measures currently implemented to improve efficiency and reduce unit cost: the following were responses from participants: Staff training programs: 30%, Resource sharing between departments: 25%, Energy-saving initiatives: 20%, Procurement optimization: 15%, others 10%. From the above finding, the responses show that a variety of measures are being implemented, with staff training programs being the most common. This indicates a focus on enhancing staff capabilities as a means to improve efficiency and reduce costs. Additional strategies to explore for enhancing efficiency and reducing unit cost: Respondents suggested various strategies such as:

- Developing and implement comprehensive training programs focused on advanced financial management and unit cost analysis to address gaps in proficiency.
- Technology Integration: Utilize financial management software and tools to streamline budgeting processes, track expenses, and improve overall financial efficiency.
- Collaborative Resource Sharing: Foster partnerships and collaboration between schools to share resources, reduce costs, and enhance operational efficiency.
- Regular Financial Audits: Conduct regular financial audits to identify areas of waste, improve transparency, and ensure accountability in financial management.
- Incentive Programs: Introduce incentive programs for staff who contribute to cost-saving initiatives and efficient resource management.
- Community Engagement: Engage with the local community to garner support, raise additional funds, and involve stakeholders in financial decision-making processes.

Measures currently implemented to improve efficiency: Responses were asked the measures currently implemented to improve efficiency and reduce unit cost in secondary school. The responses were as follows: Staff training programs (15%), Resource sharing

between departments (25%), Energy-saving initiatives (20%), Procurement optimization (30%) and others (10%). From these findings; the responses show that a variety of measures are being implemented, with Procurement optimization being the most common. This indicates a focus on enhancing staff capabilities as a means to improve efficiency and reduce costs. According to Lysons & Farrington [16] schools that prioritize procurement optimization are likely to see improved financial performance due to reduced costs and better management of financial resources. This can free up funds for other critical areas such as educational programs, infrastructure development, and student support services [17-20].

Training and Support: Respondents were asked if they have received formal training or professional development related to financial management and unit cost analysis: The finding shows that 40% of respondents have received formal training in management of unit cost while 60% of respondents said they didn't receive any training on unit cost management this means that the majority of respondents have not received formal training, suggesting a gap in professional development opportunities that could be addressed to improve financial management skills. Furthermore 70% of respondents showed Interest in participating in training sessions or workshops focused on unit cost management while 30 were not interested in that kind of training. This shows that there is a strong interest in training sessions or workshops, indicating a demand for professional development in unit cost management among school heads [21-23].

5. CONCLUSION AND RECOMMENDATIONS

The analysis indicates that while heads of schools in Arumeru District Council generally have a good understanding of unit cost concepts and are actively involved in budget allocation, variety of measures are being implemented, with staff training programs being the most common. Also there is a need for further training to enhance their proficiency and confidence in financial management, particularly in calculating and managing unit costs.

Based on the findings and analysis of the skills of heads of schools in managing unit costs for financing students, the following recommendations are proposed to enhance

financial management and efficiency in public secondary schools in Arumeru District Council as follows. The government has to provide comprehensive training for heads of schools on financial management and unit cost analysis. This can be done by establishing continuous professional development opportunities through workshops, seminars, and online courses to keep school leaders updated on best practices. Administrators have to provide advanced financial management tools to aid in accurate budgeting, forecasting, and monitoring of unit costs. Promote procurement optimization strategies, such as bulk purchasing, competitive bidding, and long-term supplier agreements. Also by implementing energy-saving initiatives and resource-sharing practices to reduce operational costs. This will help improve the efficiency and effectiveness of financial management in public secondary schools.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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