Flexible budgetary process and institutional performance of University of Environment and Sustainable Development

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Research Article

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Abstract

This research paper examines the correlation between the University of Environment and Sustainable Development's Budgetary Process and Performance. Utilizing a descriptive research design, the study collected primary data from a targeted sample of 167 functional leaders involved in the budgeting process at the university, out of 289 staff members. The study found that decentralizing financial management to university departments resulted in inefficiencies related to technology adoption, control measures, and the timeliness of supplemental budgeting, alongside notable weaknesses in internal controls due to inconsistent budget consultations. In contrast, the budget evaluation process was deemed efficient, evidenced by the budget committee's receipt of accurate and timely financial data on a quarterly basis.

1. Introduction

The budgetary process holds considerable significance in shaping the activities of public institutions, having influence on their ability to achieve institutional objectives and effectively deliver services. Multiple components, including financial stability, resource allocation, accountability, and overall efficacy, are intricately affected by the budgeting procedure as it relates to the operation of public institutions. A well-formulated and properly implemented budget has capacity to promote socio-economic well- being of the people, finance development projects and support public service administration. This cannot be achieved without a good budgeting process (Adongo, 2013). The ability in predicting, formulating, and overseeing a financial plan is an essential competency for every individual in a managerial role within an organization. Hence, it can be argued that every managerial function inside an organisation has a certain level of accountability for the budgetary process.

Within the framework of an educational institution, individuals engaged in the budgetary process are required to possess a comprehensive understanding of budgets and the requisite competencies essential for the formulation, execution, and supervision of budget-related complexities and concerns. This ensures the presence of the essential skills and abilities required for achieving success in administrative roles. Private and public institutions of higher education undergo simultaneous development with scientific progress and get the required resources to support educational endeavors (Breneman, 2012). The broader fiscal dimension encompasses matters that were impacted by the recession of 2008–2009, hence influencing the financial aspects of higher education establishments (Breneman, 2012). Consequently, there was a notable escalation in competition within the public and private economic sectors, accompanied by a rise in regulatory measures. Additionally, there was an intensification of competition among staff and faculty members, as well as among students. Moreover, there was a distinct emphasis on the persistent upward trajectory of higher education costs for students and their families, alongside an increase in the cost of purchasing goods within the nation.

Additionally, this will empower management to establish performance objectives that are more practical in nature, thereby facilitating the efficient coordination within various objectives (Little et al., 2002).

Usually, budget serves as a tool for the assessment of managerial performance inside the organisational administration (Searforce & Monczka, 2015). Consequently, the budget's accuracy may be compromised upon approval, owing to the ever-changing nature of the corporate environment. Budgets often need a significant amount of estimation and speculation, leading to considerable friction between management and subordinates. This conflict arises from the divergent objectives of management, who aim to maximise staff productivity, and subordinates, who aim to include flexibility in the budget to ensure realistic targets (Prendergast, 2000). According to Ahmad et al. (2003), budget is an indispensable instrument within the corporate domain, despite the challenges they present. Budgeting is an integral component of organisational management and strategic planning.

According to Lucey (2002), the successful implementation of the organisational plan requires the active involvement and support of senior management, who must work together with middle managers and their subordinates. Additionally, it is important to have a robust reporting system to ensure effective communication and coordination within the institution. Hence, the budgeting process inside institutions encompasses a range of actions that facilitate the initiation, implementation, and assessment of strategies aimed at allocating resources and delivering goods and services (Drury, 2000). An efficient budgetary process often involves adopting a strategic perspective that aligns with an organization's goal and vision. Additionally, budgetary determinations should be informed by input from stakeholders and enhanced communication with them. According to Mawathe (2008), the budget should adopt a strategic approach rather than just prioritising the balance of yearly expenditures and income.

According to Drury (2000), the assessment of the budget serves to reconfigure the framework of staff involvement in its execution, therefore encompassing all employees within the business. Budgeting may be defined as the systematic process of formulating a comprehensive plan that quantifies the projected inflows and outflows of funds over a certain timeframe, often spanning one year (Horngren et al., 2020). This plan serves as a fundamental framework for overseeing and controlling organisational activities. The administrative framework employed by non-profit organisations has resemblance to the financial management model utilised by for-profit companies. According to Kavoi (2011), it may be seen that profit-making organisations prioritise maximising shareholder wealth rather than ensuring the consistent provision of desired social necessities to society. On the other hand, nonprofit organisations are characterised by a relative absence of the resources and capabilities that are often found in commercially oriented businesses. The reason behind that non-profit organisations depend on resource donors who are not driven by financial gain. As a result, these institutions must ensure efficient management of donor money allocated for certain initiatives. The intended objectives of the financing are often stated by the sponsoring organisation or, alternatively, in the mission statement of the institution. The majority of businesses employ the budgetary process and performance as a strategic tool to efficiently manage their resources and operations.

The budgetary process entails comparing actual results with planned budget predictions. The execution of this strategy is essential to alleviate inefficiencies and unproductive budgetary practices, hence enabling the optimal allocation of scarce resources (Kanyinga, 2014). Hansen et al. (2003) assert that successful financial management control must take into account many elements. The specified components include the development of systematic protocols to achieve performance standards aligned with set objectives, the implementation of a feedback system for information, the evaluation of actual performance against expected goals, and the application of appropriate strategies to optimize resource utilization within each entity. The main aim of this research is to examine the impact of the budgetary procedure on the overall efficiency of institutional operations. This research employs a case study of the University of Environment and Sustainable Development (UESD) situated in Somanya, Eastern Region, Ghana.

Despite the prevalent acknowledgment of budgeting's significance, many firms continue to encounter difficulties in achieving their goals. Ineffective budgeting methods, including inadequate goal formulation, insufficient communication, and restricted stakeholder engagement, may hinder the success of the budgeting process (Bogsnes, 2016; Hope & Fraser, 2003). Moreover, organizations must contend with additional complexities arising from external factors such as market volatility, technological advancements, and regulatory modifications to achieve their objectives via the budgeting process (Chong & Eggleton, 2015). Additional investigation on the efficacy of the budgeting process in achieving organizational objectives is essential, considering its significance and the potential obstacles that organizations may face. This study will be conducted at UESD, a newly established institution, to verify the accuracy of this background in light of the institution's role in fostering local economic development, which includes the initiation of various programs aligned with the academic calendar aimed at the country's growth and development. This study seeks to analyze the impact of financial procedures on the overall performance of the institution, namely UESD. For this research, we gathered primary data from a specific sample of 167 functional leaders engaged in the university's budgeting process, selected from a total of 289 staff members.

Our findings indicate that the decentralization of financial management to university departments resulted in significant deficiencies in internal controls due to inconsistent budget consultations, as well as inefficiencies in technology adoption, control measures, and the promptness of supplemental budgeting. In contrast, the budget committee obtained timely and accurate financial data quarterly, suggesting that the evaluation process was deemed efficient.

This research paper contributes to the existing literature in several ways: (1) it demonstrates that the decentralization of financial management to university departments enhances control over the university budgeting system; (2) it is the first study in this domain to utilize data from African universities; and (3) it employs survey data and quantitative methods, in contrast to other studies in this field that have utilized qualitative methods.

This document is structured as follows. In the subsequent part, we formulated our hypothesis grounded in prior literature. Section 3 addressed our study methodology and model specification. Our data and analysis were provided in section 4. Section 5 concludes the paper.

2. Literature review and hypothesis development

2.1 The Theory of Budgeting

From last few decades budget theory garnering considerable interest not only in municipal offices but also in academic and quasi-academic institutions, including the nascent Brookings Institution. Budgets are regarded as the foundational element of an effective control system and, consequently, are a crucial element of the concept of effective budgetary control. Budgets serve as predictive tools for future organisational outcomes, enabling the evaluation of a specific approach's sustainability within the organisation. In most organisations, this strategy is formalised through the creation of annual budgets and performance monitoring. Consequently, budgets can be reduced to a mere assemblage of strategies and forecasts (Silva & Jayamaha, 2022). Budgets specify the required quantity, type, and punctuality of resources; they also mirror the organisational ramifications of business plans (Shields & Young, 1993). The procedure by which the budget is executed. Short and medium-term objectives are set with the purpose of providing a coordinated management policy with both short-term and long-term goals. The purpose of these objectives is to generate projections of forthcoming sales revenues and expenses.

Before being implemented, a budget outlining anticipated income, expenses, and capital utilisation is formulated, approved, and sanctioned (Lucey, 1996). Budgets facilitate the allocation of resources, the coordination of operations, and the monitoring of performance (Blocher, E. J., Stout, D. E., & Cokins, G. (2002). Budget planning also entails ascertaining the amount of money that an organisation intends to allocate towards diverse activities that generate both costs and revenue. As the proverb goes, "*Failing to plan is planning to fail*," the importance of budgeting is underscored. Budgeting can be defined as strategic preparation for financial matters, including performance.

Three primary concepts or elements are emphasised in the definitions of budget: (1) *planning*, which is occasionally referred to as the organization's goals statement or objectives. (2) *measurability*, which enables the assessment of both the intended outcomes and the extent to which they can be achieved. (3) *temporal aspect*, which provides the means to assess the effectiveness of a strategy over a designated period. A budget provides a concise overview of an organization's objectives for the upcoming month, quarter, or year. It serves as a declaration that delineates the quantitative and organisational components of those plans. When actual results are compared to stated objectives, budgetary control is the examination of what transpired. Benchmarks for task controls and management are established through the comparison of actual results to scheduled budgets; corrective measures are implemented as necessary (Sharma, 2021).

It has been acknowledged that budgets serve numerous purposes, such as facilitating control, facilitating learning through coding, and engaging into contracts with third parties (Selznick, 2018). Fisher's approach of "linking compensation to performance measures against the budget" exemplified how to establish clear objectives, facilitate goal communication, code learning, and establish performance indicators for individual personnel within an organisation (Goldstein, 2005).

2.2 Institutional Theory

Institutional theory can be historically linked to the scholarly contributions of Max Weber, a social theorist and economist, who investigated the escalating prevalence of bureaucracy and institutional control within society. Weber's notion of excessive establishment elucidates this phenomena, which has origins spanning millennia. The integrated method emerged from Scott's (2005) research, which asserted that "the institution serves as a source of stability and significance for a company's social conduct." The inception of Modern institutional theory as a unique theoretical framework can be attributed to a pivotal publication by political scientists March and Olsen in 1984. The government's principal role is to actively shape its environment rather than merely adapt to it. The domain of public administration is driven by societal aspirations and political objectives. The various components of institutional theory elucidate the mechanisms via which these elements are produced, propagated, adopted, and altered across diverse geographical regions and temporal contexts. Furthermore, they elucidate the elements leading to its final deterioration and forsaking. Budgeting symbolises various accounting functions, including resource negotiation, bargaining, power dynamics, environmental adaptability, and organisational transformation (Covaleski et al., 2003). Institutional Theory has been applied in various academic fields, including budgeting processes. Nonetheless, Institutional theory has encountered criticism on multiple fronts. Scott (1995) identifies a substantial issue inherent in Institutional Theory about the evaluation of institutions. The presence of the subject is recognised; nevertheless, the degree of its variation requires further investigation. Additionally, Bogt, H. J. (2008) critiques Institutional Theory for its propensity to perceive institutions as predominantly static entities, neglecting their dynamic characteristics.

Institutional theory elucidates the developmental, diffusion, endorsement, and adaptation processes of diverse elements throughout time and territory. Additionally, it examines the elements leading to their eventual deterioration and cessation. Furthermore, it is essential in enabling organisational and environmental transformations (Warren Krafchik, 2003). Notwithstanding the previously described issues, institutional theory has been utilised in the context of budgeting process discipline to clarify the modifications implemented within the public sector budgeting framework (Frumkin & Galaskiewicz, 2004). The impact of institutional constraints on the use of budgeting process information for organisational survival is contingent upon its efficacy. Optimising efficiency and addressing the requirements of technical tasks while adhering to the formalities of the institutional environment (Collier, 2001). This study employed Institutional Theory as a framework to analyse budgeting variables. The objective was to discover supplementary factors that affect the use of budget process information in budgeting decision-making, emphasising the improvement of efficiency and organisational legitimacy. In the realm of school budgeting, educational institutions are acknowledged as entities requiring resource allocation, hence mandating effective organisational administration and responsibility. The acquisition and use of these revenues were conducted in compliance with established legislation and authoritative norms by several stakeholders, including administrative boards and the ministry of education.

2.3 Institutional performance

The current literature defines performance as the outcome of an organization's actions or investment over a specified period (Gamlath, 2021). There are two sorts of performance measures: organisational and non-organizational. Organisational performance is commonly characterised as the use of outcome-based organisational measures that are supposed to reflect the firm's achievement of its economic goals (Olamide & Adeyemi, 2016). McKiernan and Morris (1994) argued that organisational performance measures cannot correctly evaluate organisational effectiveness or total performance. As a result, in this study, organisational efficiency is employed to indicate the overall performance of public institutions.

In the context of this study, performance refers to how universities measure their efficiency in terms of quality and timely delivery, cost savings, and enhanced decision making. The accounting system is one of the elements that influence organisational performance (Olatunji & Olusegun, 2021). Carton (2004) defines institutional performance as the use of people, physical, and capital resources to achieve a common goal. The actual output or results of an organisation as assessed against its expected outputs (or goals and objectives) define organisational performance.

According to Ibrahim's (2019) research, performance results in a state of competitiveness attained by a high degree of efficiency and productivity. Organisational performance is primarily concerned with the organization's competence and capability to effectively employ the available means to achieve successes compatible with the specified objectives, while also taking into account their importance to its users. Effective institutions with high performance standards meet the demands of their stakeholders (shareholders, board of management, and the environment). Organisational performance, according to Richard et al. (2009), covers three specific areas of firm outcomes: (1) organisational performance (profits, return on assets, return on investment, and so on), (2) product market performance (sales, market share, and so on), and (3) shareholder return (total shareholder return, economic value added). They also discovered that subjective indices such as customer satisfaction, employee satisfaction, and social and environmental performance can be used to assess business performance.

According to Ndungu (2013), the University Treasury is mandated to prepare organisational statements for each university institution, revenue receiver, and aggregated organisational statements for all University Government entities at the end of each fiscal year. These organisational statements must correspond to the Public Sector Accounting Rules Board's rules and forms. Auditor-General is entrusted with the responsibility, as stipulated in Article 229 of the Constitution, to conduct audits and provide reports on the Organisational records of both the National and University Governments (ROK, 2013).

2.4 Budgetary Planning and Institutional Performance

Ahmad, M. M., & Ahmad, H. (2014) did a study to investigate the difficulties related to the formulation and implementation of budgets in Jordan. The research findings indicate that a significant barrier exists due to a limited comprehension of the relevance of budgeting. Furthermore, there was a propensity for producing inflated estimates, which, upon implementation, led to difficulties in budget execution. Pimpong & Laryea (2016) utilise data from non-bank institutions in Ghana to demonstrate that budget planning and coordination exert a beneficial and statistically significant positive effect on institutional performance. Ngumi and Njogo (2017) identify a negative link between fluctuations in capital spending and performance, based on data from 45 Kenyan insurance firms. They also indicate a negative correlation between human resources and corporate performance. Ngumi & Njogo (2017) indicate that discrepancies in budgeting methodologies adversely affect overall business performance. The aforementioned study articles demonstrate that budgets are essential in the contemporary intricate and challenging corporate environment, including non-profit entities such as universities. The assessments performed in the institutional context highlighted the necessity of integrating suitable frameworks and procedures for budget planning. Furthermore, it was advised that stakeholder engagement, particularly with both teaching and non-teaching personnel, be enhanced inside the University. A positive correlation exists between budget planning and institutional performance. From these grounds, we formulated our initial hypothesis:

H_1

There is a positive relationship between budgetary planning and Institutional performance.

2.5 Budgetary Implementation and Institutional Performance

To keep budget implementation under control, a thorough midyear evaluation of the budget's implementation is necessary to establish the efficiency of programme implementation and detect any potential policy issues. This budget implementation review should include physical, organisational, and additional performance indicators. Using World Vision International case study Mukami (2022) investigated the impact of budget preparation challenges on budget variance in non-governmental organisations, and their results shows that World Vision International implemented performance-based budgeting and a twelve-month budget period.

Ohemeng (2019) suggests that in order to streamline the execution of budgets, spending divisions should be allocated funds immediately following budget approval. Nevertheless, the apportionment process may span multiple weeks in certain nations. Particularly in several francophone (French-speaking) nations, the availability of funds designated for remote spending units is restricted to the latter portion of the fiscal year. This practice is, in general, a significant contributor to inefficiencies that require attention.

Previous literature indicates that expenditure units are allocated substantial liabilities upon allocation (Mkasiwa, 2011). These responsibilities encompass allocating funds to subordinate units, entering commitments, procuring goods and services, assessing the quality of acquired goods and services, generating payment requests (and executing payments if the payment system is decentralised), preparing progress reports, monitoring performance metrics, and maintaining accounts and organisational records. There exists a positive correlation between budgetary implementation and institutional performance. Consequently, we formulated our second hypothesis:

H_2

There is a significant relationship between budgetary implementation and Institutional performance.

2.6 Budgetary Monitoring and Evaluation, and Institutional Performance

Budgetary monitoring and control are procedural and regulatory mechanisms aimed at preventing the theft of money by establishing parameters for organisational conduct. This process is a methodical and ongoing procedure that may be identified by the following stages: (1) the implementation of specific performance objectives for each department within the company contributes to the improvement of performance monitoring and (2) effective communication of the intricacies of the budgetary strategy to all relevant stakeholders facilitates their understanding and appreciation of the established aims and objectives, hence fostering a sense of ownership over the eventual outcomes.

Evaluation plays a crucial part in the budgeting process as it facilitates the achievement of anticipated quality and standards in several aspects such as personnel, leadership, control, and preparation. The measurement assesses the degree to which budgetary objectives are met and highlights any deviations from such attainment. Periodic reports should be generated to assess the current state of university finances. This assertion is substantiated by Serem (2013), who elucidates that there exists a modestly favourable relationship between budgetary control and performance of Non-Governmental Organizations. This correlation is quantified by an R-square value of 14.3%.

Using 50 Public Benefit Organisations data Marwa and Wanjare (2018) investigated the relationship between organisational monitoring and programme success within Kisumu University's Public Benefit Organisations (PBOs). Their results suggest that the various organisational monitoring mechanisms investigated had a positive impact on PBO programme performance. Furthermore, the research findings show that implementing organisational monitoring has a favourable impact on the programme performance PBOs.

Mulani et al. (2013) finds that qualities of the budget targets influence the performance of small and medium-sized firms (SMEs) in India. On the other hand, Mpakaniye (2017) finds that budget planning, budget proposal and debate, budget monitoring, budget adjustment, budget administration, and budget reporting are all significant steps in the budget process and implementation in local government, when Mpakaniya (2017) used Rwanda's local government data. The deployment of a formal and severe budgeting process management system improves the firm’s performance. It means that there is a positive relationship between budgetary monitoring and evaluation and Institutional performance. Based on these arguments we developed our third hypothesis:

H_3

There is a significant relationship between budgetary monitoring and evaluation and Institutional performance.

3 Methodology and data

3.1 Data

The survey respondents were chosen using a simple random technique procedure. Because each employee at the university had an equal chance of being included in the sample, this basic random sampling procedure was used for the study. The sampling strategy for the study considers both sample size and sampling technique(s) (Cooper & Schindler, 2016). These samples were made up of staff members who would fill out questionnaires. As a result, the study's target population was 167 functional leaders from the sampled institutions. For the analysis, a target sample of 167 functional leaders of these institutions were used. This sample size is justifiable by Yamane's sample size determination formula (1967). The formula is given as:

$$n = \frac{N}{[1 + N(e)^2]}$$

1

$$=> n = \frac{289}{[1 + 289(0.05)^2]}$$

=> $n = 167$

Where:

n = sample size

N = population

e = margin of error (0.05) at 95% confidence level.

The study employed a questionnaire as the major data collection method, which was selected as the research instrument for the investigation. The study used a structured questionnaire for the purpose of collecting data. The questionnaire consisted of closed and open-ended questions. The study included rigorous measures to ensure the collection of all questionnaires sent to the participants.

The questionnaire was used in the study since it allowed the researchers to gather quick data and makes simple analysis possible. A questionnaire is a set of well-designed questions that are relevant to a research topic and are sent to a participant with the purpose of collecting firsthand information about the specified subject (Abdul-Razak, A 2019).

Primary data is a kind of data collection whereby the researcher directly acquires data from the field. This kind of data is often known as primary data, which is taken directly from the field. It is typically gathered by several techniques such as observation, surveys, and experimentation. Leedy (1984) asserts that questionnaires are often used by researchers as suitable devices for gathering information regarding prevailing circumstances and practises, as well as for eliciting attitudes and views. The use of the questionnaire for data collection tool was deemed advantageous due to its notable benefits in terms of administration.

Additionally, it offered a uniform stimulus that had the ability to reach a significant number of individuals simultaneously, thereby facilitating the collection of data for the inquiry. The survey instrument was used to gather data from personnel working inside university departments. The questionnaire consisted of six components, with the first portion gathering personal data from the respondents. The next five questions were designed to collect data relevant to the research aims. This research employed a methodical questionnaire to streamline the data collection process. The survey instrument included items that were both closed-ended and open-ended. The Likert scale utilised in this study has five points, with each point indicating a different level of agreement: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree. The research was conducted on an individual basis, with each study participant.

The validity of the instrument was determined by the researcher through seeking opinions of the experts in the field of study especially the supervisor and industry expert working in university. Validity entails the appropriateness, meaningfulness and usefulness of inferences a researcher makes based on the data collected (Saunder et al., 2009). To establish validity, the research instrument was given to five experts to evaluate the relevance of each item in the instrument in relation to the objectives. The same were rated on the scale of 1 (very relevant) to 4 (not very relevant). CVI was obtained by adding up the items rated 3 and 4 by the experts and dividing this sum by the total number of items in the questionnaire. A CVI of 0.801 was obtained. (Mugenda, 2005), state that a validity coefficient of at least 0.70 is acceptable as valid research hence the adoption of the research instrument as valid for this study.

The reliability of the research instrument was enhanced through a pilot study. Reliability is a measure of the degree to which a research instrument yields consistent results (Mugenda and Mugenda 2003). This study employed Cronbach alpha coefficient to test the reliability of the instruments. For reliability analysis Cronbach's alpha was calculated by application of SPSS. The value of the alpha coefficient ranges from 0 to 1 and may be used to describe the reliability of factors extracted from dichotomous (that is, questions with two possible answers) and/or multi-point formatted questionnaires or scales (that is, rating scale: 1 = poor, 5 = excellent). It is reliable if the Cronbach's alpha value is > 5 and unreliable if it is < 0.5 (Saunder et al., 2009). A higher value shows a more reliable generated scale. Since the alpha coefficients were all greater than 0.7, a conclusion was drawn that the instruments had an acceptable reliability coefficient and were appropriate for the study.

3.2 Model Specification

To determine the correlation between the university environment and sustainable budgetary process and performance we employed following liner model specification.

$$IP_t = \alpha_0 + \gamma_1 BP_t + \gamma_2 BI_t + \gamma_3 BME_t + \phi_t$$

2

Where, our dependent variable is IP_t. IP_t is measured based on institutional performance of the university in time *t*. In this model we have three independent variables which are (1) BP_t is budgetary planning in time *t*; (2) BI_t is budgetary implementation in time *t* and (3) BME_t is budgetary monitoring and evaluation in time *t*. ϕ_t is standard error.

4 Findings and discussion

4.1 Demographics

In this study we have received 167 members information for the analysis. The data presented in Table 1 indicates that 57.5% of the respondents were male, with the remaining 42.5% being female. Most university personnel (51.5%) are individuals in the middle age bracket (30–39 years). Among the age cohort, the 20–29 age group constitutes the second highest proportion (22.2%). Individuals aged 40 to 49 comprised the third largest proportion (21.6%), while those aged 50 to 59 make up the remaining 4.8%. In other words, university personnel are mature workers in their prime years who can carry out university operations to accomplish predetermined objectives and goals. Show that most respondents (50.9%) held a master's degree, while 44.9% held a bachelor's degree, 3% possessed a diploma, and 2% held a doctorate.

Table 1
Demographic statistics

Variable	Measurement	Frequency	Percentage
Gender	Male	96	57.5
	Female	71	42.5
Age	20–29	37	22.2
	30–39	86	51.5
	40–49	36	21.6
	50–59	8	4.8
Level of Education	Diploma	5	3.0
	Bachelor’s Degree	75	44.9
	Master’s Degree	85	50.9
	PhD	2	1.2
Years worked	1 year	14	8.4
	2 years	46	27.5
	3 years	107	64.1
N		167	
Source: Field survey (2023)			

<Insert Table 1 **here>**

This demonstrated the esteemed academic credentials of the personnel, which guarantees adequate capability for carrying out duties across various functions of the university. Academic standings played a critical role in ensuring the objectivity of responses provided in this study, as they were determined by levels of literacy and knowledge. 64.1% of the respondents had three years of work experience, compared to 27.5% with two years and 8.4% with one year of work experience. Therefore, during the study's four years of operation, most of them had gained valuable experience in university government operations and were able to contribute objectively while also furnishing credible and dependable data.

4.2 Impact of Budgetary Planning on Institutional Performance

The findings regarding the impact of UESD budgeting planning on performance are presented in Table 2. Concerning whether the university has effectively implemented the regulatory framework (PFM Act) into its budgeting planning, the majority (3.81), which was greater than the minority (3.51), agreed. This demonstrated compliance with the budget planning regulations, which impedes the budget process's monitoring, evaluation, and effective implementation. The level of staff involvement in budget planning was ineffective, as indicated by a mean score of 2.50, which is below the 2.9 average score of most respondents. This deficiency has the potential to impact the prioritisation, implementation, monitoring, and evaluation of programmes by the staff, and ultimately, the university's performance.

Table 2
Budgetary planning aspects influence on university's performance

Budgetary Planning	N	Min	Max	Mean	Std. Dev.
Budgets are prepared with reference to the school's annual plan, strategic plan and overall goal.	167	1	5	3.86	1.126
The regulatory framework has been effectively adopted in budget planning i.e. PFM Act.	167	1	5	3.62	1.133
The University Staff has been actively involved in the budget planning i.e. before the budget estimate and after the budget estimates.	167	1	5	2.50	1.192
Effective strategies have been formulated to enhance revenue collection and expenses that was budgeted for.	167	1	5	3.28	1.192
The University has competent staff to undertake the budget planning.	167	1	5	3.89	1.078
Ceilings that have been established are subject to effective regulation prior to the commencement of any activity.	167	1	5	3.25	1.310
Budget planning process influences performance of the University	167	1	5	3.99	0.994
Valid N (listwise)	167				
Note: 0–2.9 = low; 3.0–3.5 = average; 3.51 and above = high					
Source: Field survey (2023).					

Respondents indicate that effective strategies have been developed to augment budgeted revenue collection, which, while satisfactory, is not exceptional due to its average nature, is nonetheless respectable. Expenditures per appropriation, resource allocation, and decision-making are all impacted. Key planning policy documents were prepared and approved in accordance with the budget cycle, according to every respondent. This demonstrated compliance with policy frameworks and regulations in accordance with the PFM Act of 2012. Nevertheless, established ceilings are susceptible to effective regulation by the Budget officer prior to the initiation of any activity or disbursement schedule, provided that the mean falls within the average range of 3.25 as reported by the respondents.

<Insert Table 2 **here>**

According to Omolo (2017), a dependable and improved information exchange and consultation process is required in the budgeting process; all individuals accountable for attaining results should be involved in the budget formulation. Despite the implementation of effective strategies to improve revenue collection and budgeted expenses, the response obtained thus far has been deemed insufficient. Further revenue generation through strategic planning is possible, as evidenced by the mean score of 3.28 obtained from the respondents on average. This finding indicated that a significant proportion of the participants (3.99 mean) concurred that the budget planning process had an impact on the university's performance.

4.4 Impact of Budgetary Implementation on Institutional Performance

The findings regarding the influence of budgetary implementation factors on the efficacy of UESD are displayed in Table 3. All the participants agreed that a well-functioning human resource and personnel framework was in place to facilitate the budgeting implementation procedure. However, the mean number of respondents who concurred that human capacity has increased because of ongoing training and additional personnel was 3.81. Based on the responses received, the university has not successfully implemented GIFMIS for budget preparation and processing, as indicated by an average score of M = 3.42, SD = 1.22. Consistent with Richard's (2015) findings, where Richard demonstrates that the execution of GIFMIS has been an exceedingly difficult endeavour that has not yielded remarkable results. Consequently, the technology failed to deliver on its inherent advantages of financial transaction controls, which serve to mitigate the risk of revenue leakages and fraud, protect public resources, and augment university revenue.

Table 3
Budgetary implementation aspects influence on university's performance.

Budgetary Implementation	N	Min	Max	Mean	Std. Dev.
The University has proficient personnel capable of executing the budget implementation.	167	1	5	3.85	.942
Budgets are reviewed as need arises to capture reality during implementation	167	1	5	3.53	1.181
The University has effectively adopted GIFMIS.	167	1	5	3.42	1.227
The Head of the Budget Unit has successfully implemented a decentralized approach to budgeting process across the several departments.	167	1	5	2.87	1.382
There is always reference to the budget before any request to undertake an activity is approved to ensure that there are adequate funds	167	1	12	2.76	1.561
Supplementary budgets are approved in good time to allow sufficient time for implementation of activities.	167	1	5	3.11	1.172
Timely Financial reports submitted have enhanced timely budget execution.	167	1	5	2.57	1.335
Holding every individual accountable for the budget will help in the budgeting process.	167	1	5	3.69	1.196
Note: Scale (mean) 0-2.9 = low 3.0-3.5 = average 3.51 and above = high					
Source: Field survey (2023)					

<Insert Table 3 **here>**

The respondent expressed disagreement with the assertion that the head of the Budget Unit (BU) has effectively executed a decentralised approach to the budgeting process across multiple departments. The respondent gave this opinion with a score of (M = 2.87, SD = 1.82) below 2.99, indicating that decentralisation has either not been executed or has proven to be ineffective. Furthermore, they hold the opinion that the performance of the university is adversely affected by the absence of a budgetary pre-approval process for activity requests, which would guarantee adequate funding. When departmental controls are in place, employees are more likely to be accountable and responsible, which improves the university government's performance.

Under the PFM, budget implementation necessitates the participation of stakeholders in performance enhancement. According to each respondent, the university maintains communication with the treasury unit to ensure the fund is released in a punctual manner. The funds were crucial for facilitating pro-poverty programmes during teaching and learning activities at the university. As a result, the university administration endeavours to raise funds for academic programmes, which contributes to an improvement in performance. According to more than seventy percent of the respondents, supplementary budgets are not approved in a timely manner to permit adequate time for activity implementation. Consequently, the execution of budgetary items was postponed, which had an adverse impact on the efficacy of programmes and projects, as well as the financial performance of the university administration.

The entire amount of revenue collected has been deposited into the university's bank accounts via automation. All respondents concurred that this indicates the university is implementing a cashless system by strengthening controls and closing loopholes that could lead to the loss of funds at collection points. This ensured the pooling of resources to finance university budgetary items, thereby enhancing the institution's performance. According to the respondents (M = 3.11, SD = 1.17), the timely submission of budget reports has improved the execution of it. The postponement of these reports results in the national treasury delaying the disbursement of funds necessary for financial operations. Consequently, this impacts the funding of programmes and initiatives, as well as the overall financial performance of the university administration. A mean of 3.6 percent of the participants expressed agreement regarding the impact of budget implementation on the UESD's performance.

4.4 Impact of Budgetary Monitoring and Evaluation on Institutional Performance

As shown in Table 4, the initial consensus among all respondents was that the university monitoring and evaluation unit effectively monitored the budget. With a mean score of 3.35 (SD = 1.237), the internal audit committee did not appear to enhance the internal audit functions as reported by the participants. Budgetary planning and control systems that are rigid and non-adaptive do not respond positively to changes in the environment. The average mean value of (M = 3.26, SD = 1.34) indicates that the integration of GIFMIS into the budget implementation process encountered some difficulties.

Table 4
Budgetary Monitoring and Evaluation aspects influence on university’s performance

Budgetary Monitoring and Evaluation	**N**	**Min**	**Max**	**Mean**	**Std. Dev.**
The University's monitoring and evaluation unit is operational in budget monitoring.	167	1	5	3.26	1.257
The internal audit improves budgetary oversight of resource allocation and spending as budgeted.	167	1	5	3.35	1.237
Rigid and non-adaptation Budgetary planning and control systems don't respond to environment changes.	167	1	5	3.26	1.257
The University's budgets committee receives timely and accurate financial information on a quarterly basis.	167	1	5	3.08	1.242
Budget plans are established based projections, which aim to minimize costs.	167	1	5	3.56	1.205
Budget monitoring and evaluation influences performance of the University.	167	1	5	3.68	1.295
Valid N (listwise)	167				
Note: Scale-mean 0-2.9 = low 3.0-3.5 = average 3.51 and above = high					
Source: Field survey (2023)					

A quarterly submission of precise and on-time financial reports to the controller of budgets was not observed, as reported by 1.25 percent of the respondents (M = 3.26). As a result, the examination of financial records was limited, which led to improper allocation and late disbursement of resources, postponed financing of academic calendar and programme initiatives, and overall subpar performance of the university. Furthermore, the analysis and feedback process, which facilitates prompt interventions, was also impacted. As a means of comparing budgeted and actual performance, Serem (2013) argued that reports ought to be generated monthly, or at regular intervals. These reports may be submitted to the leaders of budget centers to demonstrate whether variances from budget figures are positive or negative.

<Insert Table 4 **here>**

Each respondent agreed that budget plans are formulated using projections that have the objective of reducing expenses. Despite being acknowledged as crucial participants in the budgeting process. Kanyinga (2014) echoes these findings, arguing that the capacity to comprehend the political bargaining process pertaining to the budget and to verify that specific policymakers upheld the commitments they made during this process was a crucial requirement for holding policymakers personally liable for exceeding the threshold on expenditures. The internal auditor conducted an effective evaluation of the budget.

There was unanimous disagreement among all respondents regarding the university budget and economic forum's active monitoring of the budget process. This indicates a lack of stakeholder community engagement in efforts to strengthen supervision of financial management checks and balances. Consistent with this, Theletsane (2014) observed that the university had not been monitoring actual revenue or cost data, which, according to the findings of the study, prevented the identification of the causes for discrepancies between budgeted and actual performance and the implementation of appropriate corrective measures. Each respondent agreed that budget monitoring and evaluation had an impact on the university's performance.

4.5 Institutional Performance

Performance of universities was captured with organizational efficiency. Organizational efficiency is measured in this study on the following four parameters: Improved decision-making, Cost reduction, Spending as per the appropriations and Resource Allocation. The efficacy of the University's budget implementation through the efficient utilisation of allocated funds contributes to decision-making. Moreover, the performance facilitates the allocation of supplementary resources to departmental endeavours with the aim of attaining its objectives, as evidenced by the mean rate of the respondents surpassing the average. However, the university has executed a praiseworthy policy with the intention of improving the productivity and involvement of its staff in the financial procedure; this will ultimately boost the performance of the institution.

<Insert Table 5 **here>**

Table 5
performance of the university

Institutional Performance	N	Mini	Max	Mean	Std. Dev.
The University's performance helps in decision making	167	1	5	3.21	1.236
The University has been able to utilize allocated funds for effective implementation of budget	167	1	5	3.05	1.348
The University helps in proper allocate more resources to the activities of department to achieve its goals.	167	1	5	3.92	.953
The University has an enhanced development policy to achieve the institution efficiency.	167	1	5	2.92	1.353
The University is performing well in general.	167	1	5	2.41	1.407
Valid N (listwise)	167				
Note: Scale (mean) 0–2.9 = low 3.0–3.5 = average 3.51 and above = high					
Source: Field survey (2023)					

4.5 Cronbach’s Alpha test

The measure of reliability used in this study is the Cronbach Alpha. The index goes from 0 to 1, with values close to 1 indicating a high and excellent index for the study. This suggests a very good scale generation, as stated by Nunnaly in 1978.

<Insert Table 6 here>

The Cronbach Alpha value obtained from Table 6 is 0.905. This index has a notable degree of consistency, which is advantageous for doing factor analysis due to its strong scaling properties. Stack (2009) indicates that an alpha value of 0.6 is still considered good for analysis. Therefore, when this instrument is distributed, it is expected to consistently elicit a response rate of 94.2% from the participants.

4.7 Regression Analysis

Ordinal regression was used to evaluate the impact of the financial process on the university's performance, considering that all the variables included were categorical. Before doing the primary analysis, the data underwent a thorough screening process. This approach involved conducting essential diagnostic tests to confirm that the data sets met the fundamental assumptions required for performing the regression analysis. The study attempted to establish the regression analysis as a crucial analytical paradigm.

<Insert Table 7 **here>**

Table 7
Test of Normality

Kolmogorov-Smirnov			**Shapiro-wilk test**		
Statistic	df	Sig	Statistic	df	Sig
0.468	69	0.047	0.867	69	0.03
Source: Field survey, (2023)					

The normality test results suggested that the data followed a normal distribution, as the significance level (0.03) was less than the limit of 0.05.

<Insert Table 8 **here>**

Table 8
Model Fit Results Model Fitting Information

Model	**Log Likelihood**	**Chi-Square**	**F**	**Sig.**
Intercept Only	133.355	-2		
Final	87.360	44.334	11	0.0377
Source: Field survey, (2023)				

The regression effect of the independent variables was derived by regressing the percentage data, resulting in the following outcomes. The model exhibits three distinct outcomes for the R^2, which is consistent with ordinal regression outputs.

<Insert Table 9 **here>**

Table 9

Results of the R^2 Pseudo R-Square

Cox and Snell	**0.507**
Nagelkerke	0.578
McFadden	0.226
Source: Field survey, (2023)	

The researcher employed subjective judgement to choose the R^2 value for the model, based on the correlation. The researcher used an R^2 value of 0.578 for the model (Table 9) since three separate values were shown to be statistically significant. The model with the highest R^2 statistic is considered the "best" based on these criteria, as stated by Tjur (2009). The model exhibits R^2 value of 0.507, indicating that 50.7% of the dependent variable can be accounted for by the independent variables. This indicates that the model is unable to account for 49.3% of the remaining data. Thus, based on the guidance of Seber & Lee (2022), it was determined that at least one of the variables being evaluated served as valuable indicators of performance.

<Insert Table 10 **here>**

Table 10

Coefficients of the regression model

Parameter Estimates	**Estimate (β)**	**Std. Error**	**Wald**	**df**	**Sig.**
Constant	2.425	0.776	9.778	1	0.002
Budgetary Planning	1.996	0.593	4.105	1	0.035
Budget Implementation	2.072	0.663	4.063	1	0.020
Budget Monitoring and Evaluation	2.264	1.111	4.154	1	0.042
Source: Field survey (2023)					

Results in Table 10 show that β0 is equal to 2.425, β1 is equal to 1.996, β2 is equal to 2.072, and β3 is equal to 2.264. The regression model clearly indicates that if all parameters, including budgetary planning, execution, monitoring, and evaluation, were unchanged, the university's performance would change by 2.425 units. The regression coefficient indicates that all independent variables were statistically significant, with p-values of 0.020, 0.035, and 0.042. Therefore, the three variables of budgetary planning, execution, monitoring, and assessment had an impact on the performance of the university. This outcome reinforces the findings of the descriptive statistics and ANOVA analysis (significance level of 0.000), as presented in Table 11.

Table 11
Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.38	11	5.595	7.67	0.000[b]
	Residual	244.739	255	0.825		
	Total	333.121	57			
Source: Field survey (2023)						

<Insert Table 11 **here>**

5. Conclusion

This study was to examine the impact of financial planning on the performance results of UESD. This study found significant positive effect of financial planning on university environment and sustainable development performance. Despite an effective regulatory framework aiding budget planning, a notable gap in workforce engagement and contribution to the financial planning process was identified. Participants highlighted a well-implemented framework for budget planning yet expressed concerns over the feasibility of the university's revenue goals, pointing to shortcomings in the planning process that hinder efficient resource allocation and decision-making. The lack of staff involvement was further emphasized as a major factor affecting the university's operational effectiveness, suggesting that increased participation could improve both the realism of revenue expectations and the overall performance outcomes of the university.

The study aimed to assess the influence of budgetary implementation on the operations of UESD. The study explored the impact of budgetary implementation on UESD's operations, revealing a significant link between budget execution and the university's performance outcomes. Despite having an effective human resources structure for budget implementation and adopting financial management decentralization, the study identified critical inefficiencies, such as underutilization of GIFMIS, and inadequate human capacity, which hampered effective budget execution. Furthermore, issues like untimely fund approvals and inefficient task execution, alongside a noted disregard for the budget planning process, were highlighted as detrimental to the university's development, workflow, and service delivery, even in the face of attempts to improve financial reporting and revenue collection through automation.

The present study suggests that UESD's performance was influenced by the budgetary process, encompassing preparation, execution, observing, and assessment. The regression analysis results further corroborate the conclusions, as all of the outcomes exhibit statistical significance at the set critical value. The participants offered several significant suggestions for enhancing the budgeting process to improve financial performance. The Finance directorate's rapid provision of funds was recognized as a crucial feature in the execution of funding programs. To improve control measures, it is advisable to use software to reduce resource wastage, increase transparency and accountability among authorities in charge of budget implementation, and streamline the monitoring of cash distribution in projects. Active engagement of both staff and students at all three levels of the budgeting process is key to achieving this.

The research effort employed primary data to derive conclusions and findings from the investigation. Primary data is prone to errors that make it impossible to verify the accuracy of the information. Furthermore, the information is often subjective as it reflects the perspectives of decision-makers at the intermediate and highest levels. The Likert scale addresses this difficulty by formulating study questions in a manner that maximises objectivity.

Additional research should be conducted in the subsequent three domains: the impact of staff participation in the budget process on university performance, the factors that influence compliance with regulatory frameworks in public finance management of universities, and the cognitive capacity of university staff regarding the budgetary process.

Abbreviations

BU	Budget Unit
GIFMIS	Ghana Integrated Financial Management Information System
PFMA	Public Financial Management Act
PFMR	Public Financial Management Regulatory
SMEs	Small And Medium-Sized Enterprises
UESD	University of Environment and Sustainable Development

Declarations

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This research was not funded by any external sources. Ethical approval was obtained from the Institutional Review Board (IRB) of the University of Environment and Sustainable Development.

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