INTERNATIONAL JOURNAL OF BUSINESS AND MANAGEMENT (IJBM)
ISSN: 2815-9330 (Online)

VOL. 5, NO. 2 2026 https://iessociety.org/

Budget formulation and enactment as determinants of education service delivery in selected public universities in South Sudan

Ring Longar Gum Majok[1*], Dr. Olowo George[2] and Dr. Charles Ndalu Wasike[3]

[1 2 3]Nkumba University, Entebbe, Uganda

Email: olowo.george@gmail.com[2]; ndaluwasike2006@gmail.com[3]

*Correspondence: ringlongar5@gmail.com; https://orcid.org/0009-0000-1533-4335

Abstract

This study examined the effects of budget formulation and enactment on the delivery of educational services in selected public universities in South Sudan. The inquiry was motivated by chronic funding shortfalls, infrastructure deficits, and weak research output that continue to undermine the country's public universities despite successive public financial management reforms, set against a fragile state context in which higher education receives a disproportionately small share of an already constrained national budget. Anchored on New Public Management, Principal Agent, and SERVQUAL theories, the study adopted a pragmatic paradigm and a convergent parallel mixed-methods design, drawing on data from staff and policymakers at the University of Juba, the University of Bahr El Ghazal, and Upper Nile University, and from the Ministry of Higher Education, Science and Technology. From a distributed sample of 400, an analytic sample of 358 respondents completed a five-point Likert questionnaire, complemented by 21 key informant interviews and three focus group discussions. Internal consistency was very good (Cronbach's alpha of 0.861 and 0.886 for the two constructs). Pearson correlation revealed a moderate, positive, and significant relationship between the constructs ($r = 0.535$, $p < 0.01$), and simple linear regression confirmed a significant positive effect (beta = 0.535, R2 = 0.287, $F(1, 356) = 143.10$, $p < 0.001$). Qualitative analysis identified inadequate budget estimates, chronic approval delays, and limited transparency and stakeholder participation as the main constraints. The study recommends participatory, cost-based budgeting, statutory reform of the budget cycle, and stronger transparency and stakeholder engagement at the formulation stage.

***Keywords*:** Budget Formulation, Budget Enactment, Education Service Delivery, Public Financial Management, Public Universities, South Sudan

JEL Classification: H52, H61, H83, I22, O55

DOI: https://doi.org/10.56879/ijbm.v5i2.97

1. Introduction

Public financial management has become a central concern in the governance of higher education systems worldwide because a university's capacity to deliver quality teaching, research, community engagement, and student services depends directly on how it plans, allocates, and accounts for public resources. The budget cycle opens with formulation and enactment, the stage at which expenditure needs are estimated, revenue is projected, resources are allocated across competing priorities, and the resulting proposals are scrutinised and approved. Where this stage is realistic, participatory, and timely, it establishes the financial foundation on which institutional performance rests; where it is incremental, opaque, and chronically delayed, it transmits instability through the whole system (Pollitt & Bouckaert, 2017; Lawson & Harris, 2023). The quality of budget formulation is therefore not a purely technical matter but a determinant of the educational outcomes that universities are mandated to produce.

The formulation stage is distinctive because it is where institutional priorities are translated into fiscal commitments. Effective formulation rests on accurate, cost-based estimates of program needs, credible revenue projections, the meaningful participation of academic and administrative stakeholders, and transparent vetting and approval. When these conditions hold, budgets align resources with strategic objectives and create predictability for institutional planning. When they fail, the consequences are immediate: research, library, and laboratory provisions are typically the first to be cut, the academic calendar is disrupted, and staff lose confidence in the institution's financial stewardship (Tetteh, Muda, Susuawu, Sunu, & Aneyire, 2022; Ingosi, Odero, & Ali, 2024). Budget formulation thus conditions the entire downstream chain of execution, monitoring, and service delivery.

A growing body of empirical work confirms that the quality of budget formulation predicts institutional performance, although the strength of the relationship varies with context. Kariuki (2021) reported a significant positive association between participatory budgeting and service quality in Kenyan universities, and Akintoye (2017) found that formulation practices, particularly the accuracy of revenue estimates, explained a substantial share of the variance in performance in Nigerian federal universities. Johnson, Thompson, and Williams (2019) identified stakeholder involvement as the strongest predictor of institutional effectiveness in Canadian universities, while García, Fernández, and Torres (2018) showed that decentralised formulation improved resource alignment at some administrative complexity. Together, these studies establish budget formulation as a broadly consistent determinant of service delivery across diverse institutional settings.

The evidence base nonetheless thins markedly in fragile and post-conflict contexts, where the gap between the formal architecture of public financial management and its actual operation is widest. Andrews, Pritchett and Woolcock (2017) describe such settings as prone to a capability trap, in which the formal structures of reform are adopted while substantive fiscal practice remains unchanged, a phenomenon they term isomorphic mimicry. In the specific case of South Sudan, de

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Waal (2019) characterises public budgeting as subordinated to a political marketplace rather than to rule-bound institutional planning, and the World Bank (2018) documented severe infrastructural deficits and weak budget credibility across the public sector. These analyses suggest that the formulation-performance relationship observed in stable systems cannot simply be assumed to hold in fragile-state universities, and that its magnitude and mechanisms require dedicated empirical examination.

South Sudan's public universities exemplify this challenge acutely. Operating within a fragile-state environment shaped by oil-revenue volatility, recurrent fiscal crises, and the legacy of prolonged armed conflict, the country's flagship institutions confront chronic funding shortfalls, decaying infrastructure, and weak research output even as nominal public financial management reforms proceed (Nyok, 2023; Majer & Makuac, 2023). Higher education receives a disproportionately small share of an already constrained budget, university budget estimates are routinely capped by centrally imposed ceilings that bear little relation to institutional need, and the national budget cycle is itself frequently delayed, leaving universities to operate for months without approved funds. The formulation stage in this context is shaped as much by political bargaining as by institutional planning, with consequences that fall most heavily on the academic core of teaching and research. Despite the salience of these challenges, no prior study has empirically tested the effect of budget formulation and enactment on education service delivery within South Sudan's public university system, and studies that disaggregate public financial management into its component stages remain rare even in the broader fragile-state literature. This paper addresses that gap by isolating the first objective of a larger study and asking: What is the effect of budget formulation and enactment on the delivery of educational services in selected public universities in South Sudan? The corresponding null hypothesis (H_01) states that budget formulation and enactment have no effect on the delivery of educational services in the selected public universities. By combining survey evidence with key-informant and focus group data, the study establishes both the magnitude of the relationship and the institutional mechanisms that explain it. Addressing this question matters for theory, policy, and practice. Theoretically, it tests whether the formulation-performance relationship established in stable systems holds under conditions of fragility, and whether the assumptions of New Public Management, Principal-Agent, and SERVQUAL theories transfer to a post-conflict higher education setting. For policy, it offers the Government of South Sudan and its development partners disaggregated evidence on the specific formulation bottlenecks that constrain education service delivery, enabling more targeted reform than an aggregated public financial management diagnosis would allow. For university management, it provides a quantitative basis for projecting the service-delivery returns to formulation reform and a qualitative account of the mechanisms through which those returns are realised. The remainder of the paper proceeds through a theoretical review, an empirical review of six recent studies, the methodology, the qualitative and quantitative findings, a discussion, and conclusions with recommendations.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

2. Literature Review

Three theories frame the analysis of how budget formulation and enactment shape the delivery of education services. For each, the proponents and year of origin, a brief description, its relevance to the study, its strengths and weaknesses, and the strategies used to mitigate those weaknesses are presented.

2.1 New Public Management Theory (Hood, 1991)

Description. New Public Management (NPM), introduced by Hood (1991) and elaborated for the higher education sector by Pollitt and Bouckaert (2017), holds that public organizations perform better when they adopt results-oriented financial management, decentralized and participatory decision-making, performance measurement, and explicit accountability for outcomes. Budgeting, in this view, should be strategic, transparent, and linked to measurable service objectives rather than to incremental historical allocation.

Relevance. The theory directly informs the expectation that sound, participatory, and performance-oriented budget formulation improves the delivery of education services. It provides the conceptual basis for treating the formulation stage as a determinant of institutional performance and for interpreting weak participation and opaque allocation as departures from the conditions under which budgeting is expected to raise service quality.

Strengths. NPM offers a clear, action-oriented account of how financial management practices connect to service outcomes, and its emphasis on participation, transparency, and results aligns closely with the formulation dimensions measured in this study. It has generated a large comparative evidence base across both developed and developing systems (Pollitt & Bouckaert, 2017).

Weaknesses. The theory was developed in stable, well-resourced administrative environments and assumes institutional capacities, such as functioning performance-measurement systems and collegial governance traditions, that are weak or absent in fragile states. Critics note that NPM reforms in such settings often produce the form of modern budgeting without its substance, a pattern consistent with the isomorphic mimicry described by Andrews, Pritchett and Woolcock (2017).

Mitigation. This study mitigates the limitation by interpreting NPM alongside fragile-state scholarship and by complementing the quantitative test with qualitative evidence that reveals whether participatory and transparent practices exist in substance rather than merely on paper. The convergent design, therefore, guards against the uncritical importation of NPM assumptions into the South Sudanese context.

2.2 Principal-Agent Theory (Eisenhardt, 1989)

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Description. Principal-Agent theory, formalized by Eisenhardt (1989) and extended to higher education by Lane and Kivisto (2008), analyses relationships in which one party (the principal) delegates resources and authority to another (the agent) under conditions of information asymmetry and divergent interests. Where monitoring is weak, and information is unequally distributed, agents may allocate resources in ways that depart from the principal's objectives.

Relevance. In this study, the government and the Ministry of Higher Education function as principals, while university administrators act as agents who formulate and execute budgets. The theory explains why limited transparency and weak oversight at the formulation stage allow budgets to drift from educational priorities, and it frames the documented exclusion of academic staff as a structural information asymmetry that generates agency costs.

Strengths. The framework is well-suited to analyzing transparency, oversight, and accountability, which are central to budget formulation, and it accommodates a temporal dimension of information asymmetry whereby unpredictable fund timing, not only unobserved fund use, undermines institutional planning in fragile states (Lawson & Harris, 2023).

Weaknesses. The theory tends to assume a clear, two-party hierarchy and a primarily economic, self-interested conception of behaviour, which understates the multi-layered governance of universities and the role of professional norms and cultural context in shaping financial conduct.

Mitigation. The study addresses this by adopting the multi-layered principal-agent formulation of Lane and Kivisto (2008), in which academic staff occupy a dual position as agents of management and principals of the educational process, and by using qualitative data to capture the cultural and normative dynamics that a purely economic reading would miss.

2.3 SERVQUAL Theory (Parasuraman, Zeithaml, & Berry, 1985)

Description. The SERVQUAL model, developed by Parasuraman, Zeithaml, and Berry (1985), conceptualizes service quality as the gap between the service that stakeholders expect and the service they perceive they receive, evaluated across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Closing these gaps requires systematic feedback between service providers and the stakeholders they serve.

Relevance. The model provides a lens through which education service delivery is conceptualized as a quality construct and explains how deficiencies at the formulation stage propagate into service-quality gaps. Under-costed estimates compromise tangibles, approval delays undermine reliability, centralized allocation constrains responsiveness, opacity weakens assurance, and the absence of stakeholder voice erodes empathy.

Strengths. SERVQUAL offers a structured, multidimensional account of service quality that connects financial inputs to the lived experience of students and staff and draws attention to the relational, not merely technical, dimensions of reform.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Weaknesses. The model was developed for commercial services and relies on perceptual measures, which raises questions about its transferability to public higher education and its vulnerability to respondent subjectivity.

Mitigation. The study mitigates these concerns by triangulating perceptual survey data with documentary and interview evidence, and by adapting the service-quality items to the specific functions of a public university, namely teaching, research, community engagement and student outcomes, rather than applying generic commercial scales.

Taken together, the three theories are complementary rather than competing. New Public Management specifies the conditions under which budget formulation should improve service delivery; Principal-Agent theory explains why those conditions fail when transparency and oversight are weak; and SERVQUAL traces how the resulting deficiencies are experienced as gaps in service quality by students and staff. Their joint application is particularly suited to a fragile-state setting, where the formal adoption of modern budgeting (the NPM expectation) coexists with deep information asymmetry (the agency problem) and visible service-quality shortfalls (the SERVQUAL gap). The empirical sections that follow draw on all three lenses to interpret both the magnitude of the formulation effect and the mechanisms that generate it.

2.4 Empirical Review

Six recent studies provide the empirical backdrop for the present analysis. For each, the authors and year, title, country, methodology, principal findings, and the research gap it leaves are presented, followed by a summary table.

2.4.1 Kariuki (2021)

In a study titled Participatory Budgeting and Resource Deployment in Kenyan Universities, conducted in Kenya, Kariuki (2021) employed a mixed-methods design with 280 respondents across six public universities and used hierarchical regression. The study found a significant positive correlation between participatory budget formulation and service quality ($r = 0.51$), with formulation explaining about 26 percent of the variance in service delivery. The principal gap is that Kariuki attributed formulation weaknesses primarily to technical capacity deficits and did not examine the moderating role of governance or the distinctive structural constraints of fragile states, limiting transferability to post-conflict systems such as South Sudan.

2.4.2 Johnson, Thompson and Williams (2019)

In Stakeholder Involvement in University Budgeting and Institutional Outcomes, conducted in Canada, Johnson, Thompson and Williams (2019) surveyed 350 administrators across 15 public universities and analyzed the data using structural equation modeling. They found that participatory budget formulation had a significant positive effect on institutional effectiveness (beta = 0.49), with stakeholder involvement emerging as the strongest predictor dimension. The

DOI: https://doi.org/10.56879/ijbm.v5i2.97

gap is the study's exclusive focus on stable, well-resourced institutions, which limits its generalisability to fragile-state universities operating under fiscal volatility and weak participatory mechanisms.

2.4.3 Akintoye (2017)

In Funding Reforms and Disparities in African Higher Education Institutions, conducted in Nigeria, Akintoye (2017) used a cross-sectional design with 420 respondents drawn from 12 federal universities and applied multiple regression. The study found that budget formulation practices explained 22.3 percent of the variance in university performance, with the accuracy of revenue estimates the strongest predictor. The gap lies in the exclusively quantitative design, which could not capture the contextual mechanisms underlying the formulation-performance relationship, and in the absence of attention to conflict or institutional fragility.

2.4.4 García, Fernández and Torres (2018)

In Budget Structures and Institutional Performance in European Universities, a comparative study spanning several European systems, García, Fernández and Torres (2018) combined institutional financial data with survey instruments. They found that decentralised budget formulation improved resource alignment by around 23 percent but raised administrative costs by about 12 percent, with the net effect varying by institutional size and complexity. The gap is the absence of any treatment of conflict, fragility or near-total dependence on government funding, all of which are defining features of the South Sudanese context.

2.5 Tetteh, Muda, Susuawu, Sunu and Aneyire (2022)

In Public Financial Management Reform and Service Delivery in Ghana's Public Universities, conducted in Ghana, Tetteh et al. (2022) used a quantitative survey across 28 universities and regression analysis. They reported a significant positive relationship between budget-planning quality and institutional outputs (beta = 0.58). The gap is that the study was situated in a relatively stable middle-income system and did not test the formulation-delivery relationship under the conditions of revenue volatility and post-conflict reconstruction that characterize fragile states.

3.6 Majer and Makuac (2023)

In Public Financial Management Reforms and their Impact on Service Delivery in South Sudan, the most contextually relevant prior study, Majer and Makuac (2023) used a cross-sectional survey of 286 respondents across government agencies in South Sudan and applied regression analysis. They found a significant but modest effect of public financial management reforms on service delivery (beta = 0.38). The gap is twofold: the study covered all government sectors rather than universities specifically, and it used an aggregated measure of public financial management that did not distinguish formulation from implementation and monitoring, nor did it employ qualitative methods to explain the observed relationships.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Table 1. Summary of the Six Empirical Studies Reviewed

Author(s) / Year	Country	Methodology	Key Findings	Research Gap
Kariuki (2021)	Kenya	Mixed methods; hierarchical regression; n = 280	r = 0.51; formulation explained 26% of service-quality variance	No governance moderation; not a fragile-state setting
Johnson et al. (2019)	Canada	Survey; SEM; n = 350	Participatory formulation raised effectiveness (beta = 0.49)	Stable, well-resourced institutions only
Akintoye (2017)	Nigeria	Cross-sectional; multiple regression; n = 420	Formulation explained 22.3% of performance variance	Quantitative only; no conflict context
García et al. (2018)	Europe	Comparative; financial data + survey	Decentralization improved alignment 23%, raised costs 12%	No treatment of fragility or aid dependence
Tetteh et al. (2022)	Ghana	Quantitative survey; regression; 28 universities	Budget planning predicted outputs (beta = 0.58)	Stable middle-income system only
Majer & Makuac (2023)	South Sudan	Cross-sectional survey; regression; n = 286	PFM reforms had modest effect (beta = 0.38)	All sectors, not universities; aggregated PFM; no qualitative depth

Source: Compiled by the author (2024)

DOI: https://doi.org/10.56879/ijbm.v5i2.97

3. Research Methodology

The study adopted a pragmatic paradigm and a convergent parallel mixed-methods design, in which quantitative and qualitative data were collected concurrently and integrated during interpretation (Creswell & Plano Clark, 2017). This design was preferred over sequential alternatives because the security and logistical constraints of researching three geographically dispersed universities in a conflict-affected country made multiple field phases impractical, and because simultaneous collection guards against the rapid contextual change that characterises fragile settings. The target population comprised academic staff, administrative staff, finance and audit officers, senior management, and policymakers at the University of Juba, the University of Bahr El-Ghazal, and Upper Nile University, as well as the Ministry of Higher Education, Science and Technology. A sample size of 400 was determined using Slovin's formula and corroborated by Cochran's formula at a 95 percent confidence level, and then distributed proportionally across institutions and stakeholder strata. Of the 400 questionnaires distributed, 370 were returned, and 358 were retained for inferential analysis after listwise deletion of cases with missing data, yielding an analytic response rate of 89.5 percent, which exceeds the threshold widely accepted as adequate for survey research (Babbie, 2020; Saunders, Lewis, & Thornhill, 2019). The qualitative strand comprised 15 participants (finance officers, audit officers, and policymakers), who were assigned codes KI-01 to KI-15, and three focus group discussions with students, one per university.

Budget formulation and enactment were measured using 14 items capturing revenue estimates, resource allocation, stakeholder participation, and vetting and approval, while education service delivery was measured using 10 items reflecting teaching quality, research output, community engagement, and student outcomes, all on a five-point Likert scale. Internal consistency was very good for both constructs (Cronbach's alpha of 0.861 and 0.886 respectively), confirming a sound measurement foundation (Field, 2018; Pallant, 2020). Quantitative data were analyzed in SPSS using descriptive statistics, Pearson correlation and simple linear regression, with regression assumptions assessed through tests of normality, multicollinearity, homoscedasticity and linearity. Because the Breusch-Pagan test indicated mild heteroscedasticity, all inferential estimates were computed with HC3 heteroscedasticity-consistent robust standard errors, which provide valid inference under unequal residual variance (Hayes, 2018). Qualitative data were analyzed thematically following the six-phase framework of Braun and Clarke (2006), and the two strands were triangulated within the convergent design. Ethical clearance was obtained, informed consent was secured, and confidentiality was maintained throughout, with five reflexivity strategies, including a reflexivity journal, member checking and peer debriefing, employed to enhance trustworthiness (Creswell & Poth, 2018).

DOI: https://doi.org/10.56879/ijbm.v5i2.97

4. Qualitative Findings

Thematic analysis of the interviews (finance officers, audit officers, and policymakers) and three focus group discussions produced three themes, each comprising distinct sub-themes that explain the mechanisms behind the statistical relationship reported in the next section.

4.1 Theme One: Inadequacy of Budget Estimates

Sub-theme 5.1.1: Budget ceilings divorced from institutional need. Key informants reported that estimates were driven by what the government could provide rather than by genuine need. A senior finance officer at the University of Juba observed:

> *"Our budget estimates are often developed based on what the government can provide, not what we actually need. We submitted a proposed budget of SSP 43.6 billion, but only SSP 29.2 billion was approved, and only 33 percent of the approved budget was received. This means we have to prioritise salaries over research, curriculum development, outreach and infrastructure." (KI-03, 2024)*

Sub-theme 5.1.2: The academic core cut first. Informants consistently reported that research, library and laboratory provisions were the first to be sacrificed. An audit officer at the University of Bahr El-Ghazal explained:

> *"The gap between what we request and what we receive is enormous. We submitted a budget of SSP 17.5 billion, but received only SSP 3.5 billion, that is 20 percent. The items that are always cut first are research allocations, library acquisitions, and laboratory equipment. These are considered non-essential, but they are the very things that define the quality of a university." (KI-04, 2024)*

Sub-theme 5.1.3: Conflict-displaced institutions overlooked. Standardised formulation processes failed to capture the extraordinary needs of displaced universities. A senior administrator at Upper Nile University recounted:

> *"When our university was displaced during the conflict, we lost everything, including buildings, equipment and records. We submitted a recovery budget, but the approved allocation was less than 8 percent of what we requested. We have operated from temporary structures for years, with no laboratories, no library and inadequate classroom space." (KI-05, 2024)*

Across these sub-themes, the inadequacy of estimates is not a simple technical error but a structural feature of a system in which centrally imposed ceilings, set without reference to costed institutional need, determine allocations. The pattern corroborates the lowest-rated survey item on transparency and equity and aligns with Nyok (2023) on chronic underfunding and with Andrews, Pritchett and Woolcock (2017) on the failure of standardised reforms to accommodate the extraordinary needs of fragile-state institutions.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

4.2 Theme Two: Chronic Delays in Budget Approval

Sub-theme 5.2.1: A centralised and politicised approval process. A policymaker at the Ministry described the structural source of delay:

> *"The budget approval process is heavily centralised and politicised. The national budget itself is often delayed, which has a cascading effect on university funding. In some years, universities operate for up to six or more months without an approved budget." (KI-08, 2024)*

Sub-theme 5.2.2: Operational paralysis. Delays translated into the suspension of basic functions. An academic administrator explained:

> *"When the budget is not approved, we cannot procure anything. Lecturers go without chalk, markers, and papers for printing. We cannot pay for internet services, so our digital platforms go offline. Everything grinds to a halt, and when the budget is finally approved, we are expected to compress a full year's activities into six or seven months." (KI-09, 2024)*

Sub-theme 5.2.3: The human cost to students. A student in one focus group conveyed the consequences for learners:

> *"By the third week, lecturers were not being paid, so some stopped coming. The library had no new books because the procurement budget was frozen. We ended up losing almost an entire semester. Some of my classmates transferred to private universities in Kenya and Uganda. The delays do not just affect the university; they affect our futures." (FGD-2, 2024)*

These accounts substantiate the highest-rated survey item and reveal that delay is not an occasional disruption but a systemic feature of the budget cycle, rendering annual planning all but impossible. The mechanism is temporal: because the timing of transfers is unpredictable, institutions cannot sequence procurement, staffing, or maintenance, and the burden ultimately falls on students, some of whom exit the public system altogether. This corroborates the temporal information-asymmetry reading of the Principal-Agent framework and the fragile-state evidence of Lawson and Harris (2023).

4.3 Theme Three: Limited Transparency and Stakeholder Participation

Sub-theme 5.3.1: Exclusion of academic staff. Academic staff reported being excluded from formulation. A key informant at the University of Juba noted:

> *"As academic staff, we are the ones who know what is needed for teaching and research. However, we are never consulted during budget formulation. We only learn about the allocations when they are already finalised." (KI-13, 2024)*

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Sub-theme 5.3.2: Financial opacity and information asymmetry. Opaque processes bred distrust. An audit officer at Upper Nile University reported:

> *"Financial information is treated as confidential. Academic departments receive their allocations without knowing the total institutional budget or what criteria were used. This opacity breeds suspicion and undermines trust between management and staff." (KI-06, 2024)*

Sub-theme 5.3.3: Cultural constraints on participation. A senior administrator located part of the problem in cultural norms:

> *"In our context, questioning financial decisions by senior leaders is sometimes seen as disrespectful. This cultural dimension makes it very difficult to establish genuine participatory budgeting, even when formal mechanisms are in place." (KI-02, 2024)*

The three sub-themes show that the participation deficit is at once structural, informational and cultural. Academic staff is excluded by design; the withholding of execution information sustains an agency problem; and prevailing norms discourage questioning of authority, even where formal consultation channels exist. The implication is that participatory reform requires more than new procedures; it requires deliberate cultural change and protected information rights, without which formal mechanisms will be adopted in name but not in substance, reproducing the isomorphic mimicry that Andrews, Pritchett and Woolcock (2017) describe.

4.4 Quantitative Findings: Correlation and Regression Analyses

Before the inferential results are presented, the descriptive pattern provides essential context. Perceptions of budget formulation-enactment were mixed, with a composite mean of 3.21 (SD = 0.97) located within the neutral band of the interpretation scale, while education service delivery returned a composite mean of 3.32 (SD = 1.05). The item-level pattern was sharply differentiated. Statements describing acknowledged systemic problems attracted the strongest endorsement, with the proposition that delay in budget approval delays the implementation of planned activities recording the highest mean (M = 4.12) and near-unanimous agreement, whereas items measuring procedural fairness and resource adequacy attracted the weakest endorsement, the transparency and equity of resource allocation, the adequacy of research funding and the provision for community outreach all falling within the disagreement region. On the service-delivery side, visible throughput indicators such as maintenance of the academic calendar (M = 3.66) and teaching quality (M = 3.57) were rated highest, while the adequacy of teaching and research resources for staff was rated lowest (M = 2.76). This profile of preserved throughput alongside perceived resource inadequacy frames the inferential analysis that follows.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

4.4.1 Correlation Analysis

Pearson's product-moment correlation was computed to assess the strength and direction of the relationship between budget formulation and enactment and education service delivery. Table 2 presents the matrix.

Table 2. Pearson Correlation between BFE and ESD (n = 358)

Variable	BFE	ESD
Budget Formulation-Enactment (BFE)	1.000	0.535**
Education Service Delivery (ESD)	0.535**	1.000

*Source: Primary Data (2024); ** correlation significant at the 0.01 level (2-tailed)*

Finding. The correlation between budget formulation and enactment and education service delivery is positive, moderate to strong, and statistically significant ($r = 0.535$, $p < 0.01$). Interpretation: by Cohen's (1988) conventions, this coefficient sits at the lower boundary of the large effect-size category, indicating that universities perceived to have stronger formulation practices are also perceived to deliver better education services. Implication: the result establishes a substantively meaningful association that justifies regression modeling, while the fact that the coefficient is well below unity signals that formulation is one of several determinants of service delivery, leaving room for implementation, monitoring and governance to contribute additional explanatory power.

4.4.2 Regression Analysis

Simple linear regression was performed to assess the effect of budget formulation and enactment on education service delivery. The results are presented as a model summary, an analysis of variance, and the regression coefficients, with the findings, their interpretation, and implications stated for each.

Table 3. Model Summary - BFE and ESD

R	R^2	Adjusted R^2	Std. Error of the Estimate
0.535	0.287	0.285	0.623

Source: Primary Data (2024); predictor: Budget Formulation-Enactment

Finding. The model returned $R = 0.535$, $R^2 = 0.287$, adjusted $R^2 = 0.285$, and a standard error of 0.623. Interpretation: the multiple correlation confirms a large positive relationship; budget

DOI: https://doi.org/10.56879/ijbm.v5i2.97

formulation-enactment alone accounts for 28.7 percent of the variance in education service delivery; the negligible shrinkage between R^2 and adjusted R^2 (0.002) shows the model is stable and not overfitted; and the standard error indicates moderate prediction accuracy. Implication: formulation is a necessary but not sufficient condition for service delivery, since 71.3 percent of the variance lies outside the construct, which both validates the importance of formulation reform and warns against treating it as a complete solution.

Table 4. Analysis of Variance - BFE and ESD

Model	Sum of Squares	df	Mean Square	F / Sig.
Regression	55.507	1	55.507	143.103
Residual	138.085	356	0.388	0.000
Total	193.592	357		

Source: Primary Data (2024); dependent variable: ESD

Finding. The overall model was significant ($F(1, 356) = 143.10$, $p < 0.001$). Interpretation: the F-statistic far exceeds the critical value of 3.84 at the 0.05 level, and the regression sum of squares (55.507) relative to the residual (138.085) confirms that the linear relationship is highly unlikely to have arisen by chance. Implication: the data provide strong evidence against the null hypothesis at the model level, confirming that budget formulation-enactment is a statistically reliable predictor of education service delivery rather than an artifact of sampling.

Table 5. Regression Coefficients - BFE and ESD

Model	B	Std. Error	Beta	t / Sig.
(Constant)	1.143	0.185		6.173
Budget Formulation-Enactment	0.679	0.057	0.535	11.963

Source: Primary Data (2024); dependent variable: ESD; HC3 robust standard errors; both coefficients significant at $p < 0.001$

Finding (constant). The constant was significant ($B = 1.143$, $t = 6.173$, $p < 0.001$). Interpretation: even when budget formulation and enactment are scored at zero, a baseline level of education service delivery persists. Implication: service delivery is sustained in part by institutional factors

DOI: https://doi.org/10.56879/ijbm.v5i2.97

outside the formulation construct, such as staff commitment and pre-existing infrastructure, which should be protected during reform.

Finding (slope). The unstandardised coefficient was B = 0.679 with a robust standard error of 0.057, and the standardised coefficient was beta = 0.535 ($t = 11.963$, $p < 0.001$). Interpretation: each one-unit improvement in budget formulation-enactment on the five-point scale is associated with a 0.679-unit improvement in education service delivery, and the standardised effect is large under Cohen's (1988) conventions; the precision of the estimate holds under heteroscedasticity-consistent inference. Implication: practical gains in service delivery are achievable through realistic, participatory, and timely formulation, and the regression equation ESD = 1.143 + 0.679(BFE) offers university councils and the Ministry a quantitative basis for projecting the service-delivery returns to formulation reform.

Decision on the hypothesis. Based on the significant model and slope, the null hypothesis (H01) that budget formulation-enactment has no effect on education service delivery is rejected, and the alternative is supported. The quantitative result converges with the three qualitative themes, confirming through triangulation that budget formulation-enactment has a significant positive effect on education service delivery in the selected universities.

4.5 Triangulation of Quantitative and Qualitative Evidence

Integration of the two strands strengthens confidence in the result and clarifies its meaning. Convergence is evident in three areas. First, the significant positive regression effect (beta = 0.535) is echoed by the near-universal recognition among informants that formulation practices shape service delivery. Second, the weak quantitative rating on the transparency and equity of resource allocation is corroborated by accounts of budgets built on what the government can provide rather than on institutional need. Third, the near-universal agreement that approval delays disrupt planned activities, the highest-rated survey item, is substantiated by detailed descriptions of universities operating for months without approved funds. The qualitative strand also complements the statistics by revealing the mechanisms that the survey could not capture, namely the top-down exclusion of academic priorities, the cascading operational effects of national budget delays, and the demoralization and erosion of trust that follow from opaque formulation.

A single, instructive divergence emerged. The survey rated stakeholder participation near the neutral midpoint, indicating some involvement, whereas the interviews described formulation as an exclusively administrative process with no meaningful academic participation. The most plausible explanation is that administrative respondents interpret internal finance-department consultation as participation, whereas academic respondents define participation as direct faculty involvement in priority setting. Rather than undermining the result, this divergence demonstrates the analytic value of the convergent design, which surfaces interpretive nuances that a single method would conceal and which carry direct implications for how participatory reform should be designed and communicated.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

4.6 Discussion of Findings

The finding that budget formulation-enactment significantly predicts education service delivery (beta = 0.535, R2 = 0.287, $p < 0.001$) supports the central proposition of New Public Management that structured, results-oriented budgeting raises institutional performance (Hood, 1991; Pollitt & Bouckaert, 2017). At the same time, the qualitative evidence that academic staff are systematically excluded from the formulation process contradicts the participatory and decentralised dimensions of the theory. This combination indicates that South Sudan's universities have adopted the rhetoric and documentary form of modern budgeting without its substantive participatory practice, a pattern that corresponds closely to the isomorphic mimicry identified by Andrews, Pritchett and Woolcock (2017). The theoretical implication is that NPM travels to fragile-state higher education only partially: its results orientation is visible in the data, but the institutional counterweights that the theory assumes, namely collegial governance and functioning performance measurement, are weak or absent, so reform risks reproducing centralised control under a modern label.

Read through the Principal-Agent lens (Eisenhardt, 1989; Lane & Kivisto, 2008), the documented opacity and weak oversight at the formulation stage reflect the information asymmetry that allows budgets to drift from educational priorities, while the salience of approval delays points to a distinctive temporal information asymmetry: agents cannot plan because the timing of transfers, not only their use, is unpredictable. This temporal dimension extends the conventional agency literature, which has concentrated on the unobservable use of funds, and is consistent with the fragile-state synthesis of Lawson and Harris (2023). Interpreted through SERVQUAL (Parasuraman, Zeithaml, & Berry, 1985), the formulation deficiencies degrade service quality across all five dimensions simultaneously, compromising tangibles through undercosted estimates, reliability through delays, responsiveness through inflexible central allocation, assurance through opacity, and empathy through the absence of stakeholder voice. The practical implication is that formulation reform cannot be a purely technical exercise in better estimation; it must simultaneously rebuild the relational conditions, trust, responsiveness, and voice, on which perceived service quality depends.

Set against the six empirical studies reviewed, the present results both confirm and qualify the prior literature. The correlation observed here ($r = 0.535$) and the variance explained ($R^2 = 0.287$) align closely with Kariuki's (2021) Kenyan findings ($r = 0.51$; 26 percent) and exceed Akintoye's (2017) Nigerian estimate (22.3 percent), suggesting that formulation matters more, not less, in extremely resource-constrained settings where its failures have immediate and visible consequences. The effect is nonetheless weaker than the betas reported in stable systems by Johnson, Thompson and Williams (2019) in Canada (0.49) and by Tetteh et al. (2022) in Ghana (0.58), a divergence attributable to the revenue volatility, fragility, and participation gaps that characterise South Sudan. The result is markedly stronger than Majer and Makuac's (2023) aggregated South Sudanese estimate (0.38), confirming the methodological value of

DOI: https://doi.org/10.56879/ijbm.v5i2.97

disaggregating public financial management into its component stages: by isolating formulation, the present study reveals an effect that an aggregated measure obscures. In closing the gaps left by these studies, namely the absence of fragile-state university evidence and of stage-specific, mixed-methods analysis, the paper contributes a context-specific account of both the magnitude of the formulation effect and the mechanisms that produce it.

5. Conclusions and Recommendations

The study concludes that budget formulation and enactment have a significant positive effect on education service delivery in South Sudan's public universities and are a substantively important, though not sufficient, determinant of institutional outcomes. The moderate-to-strong correlation (r = 0.535) and the significant regression effect (beta = 0.535, R2 = 0.287) demonstrate that perceptions of stronger formulation practice are systematically associated with better service delivery, while the qualitative evidence shows that this relationship operates through the realism of estimates, the timeliness of approval and the transparency and inclusiveness of allocation. Each of these channels is currently compromised by centrally imposed budget ceilings, a politicised and chronically delayed approval cycle, and the systematic exclusion of academic stakeholders, resulting in the preservation of visible academic throughput even as the resource conditions that should sustain it are perceived as inadequate.

It follows that improving the formulation stage is a necessary first step in any credible reform of higher education financing in South Sudan, but that it cannot stand alone. Because formulation accounts for only a third of the variance in service delivery, reform confined to this stage, while neglecting implementation, monitoring, and governance, will yield disappointing results. The findings also caution against the uncritical transfer of budgeting models from stable systems, since the South Sudanese pattern is shaped by revenue volatility, post-conflict fragility and cultural constraints on participation that those models do not anticipate. Effective reform must therefore combine technical improvements in estimation and approval with the institutional and cultural changes needed to make participation and transparency real rather than nominal.

5.1 Recommendations

Arising from these conclusions, the study advances the following enhanced recommendations:

(i) University councils and management should institutionalise participatory, cost-based budgeting by requiring every faculty and department to submit costed program proposals that feed directly into the institutional budget, thereby replacing incremental estimation with activity-based costing that reflects the true cost of teaching, research and outreach and protects the academic core from being cut first.

(ii) The Ministry of Higher Education, Science and Technology, working with the Ministry of Finance and Planning, should reform the budget cycle to curb chronic approval delays by enacting statutory timelines for the approval of university budgets and by guaranteeing

DOI: https://doi.org/10.56879/ijbm.v5i2.97

predictable, scheduled disbursement, so that institutions are no longer forced to compress a full academic year into six or seven months.

(iii) Universities should strengthen transparency at the formulation stage by publishing institutional budgets and allocation criteria internally, establishing formal consultation mechanisms that give academic units a voice in priority-setting, and protecting the right of staff and internal auditors to access budget-execution information.

(iv) Government and development partners should establish a needs-based funding window for conflict-affected and displaced institutions, recognizing that uniform budget ceilings systematically fail to capture the extraordinary recovery needs of universities such as Upper Nile University, and that targeted support is required to rebuild laboratories, libraries and classroom infrastructure.

(v) University leadership should pursue a deliberate cultural-change program, supported by legal-literacy and governance training, to normalise the questioning of financial decisions and to reframe government transfers as legally mandated entitlements rather than discretionary benevolence, thereby creating the conditions in which participatory budgeting can take root.

(vi) The South Sudan National Bureau of Statistics, in collaboration with the universities, should institutionalise an annual higher education sector survey to enable continuous monitoring of the link between public financial management practices and education service delivery, providing the evidence base for iterative, problem-driven reform.

5.2 Contribution to Knowledge

The study makes three contributions. Empirically, it provides the first dedicated test of the budget formulation-enactment effect on education service delivery within South Sudan's public university system, a context that has received virtually no prior research attention, and it does so with a robust analytic sample and very good measurement reliability. Methodologically, it demonstrates the value of disaggregating public financial management into its component stages: by isolating formulation, it recovers an effect (beta = 0.535) that the aggregated national measure of Majer and Makuac (2023) substantially understated, and it integrates this with qualitative evidence through a convergent design that explains why the effect exists. Theoretically, it shows how New Public Management, Principal-Agent, and SERVQUAL theories operate jointly in a fragile-state higher education setting, refining each with the institutional-context caveats imposed by the South Sudanese evidence and contributing to the emerging scholarship on public financial management in post-conflict higher education.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

5.3 Limitations and Future Research

The study is subject to several limitations that qualify its conclusions. First, given the concurrent parallel (convergent) design, a primary challenge is integrating and comparing two distinct types of data: quantitative and qualitative, particularly when the results are contradictory. Additionally, this approach demands substantial time, financial resources, and expertise in both methodologies. Although these limitations exist, the triangulated qualitative evidence on mechanisms and the dynamic accounts of leadership transitions bolster the causal interpretation, despite the inherent challenges of the design. Second, reliance on self-reported perceptions introduces the possibility of common-method and social-desirability biases, which are partially mitigated here by the use of documentary evidence and multiple respondent categories. Third, the small subsample at the University of Bahr El-Ghazal (n = 39) limits the statistical power of between-institution comparisons, and the under-representation of technical staff constrains the representativeness of that stratum. Fourth, the findings are specific to three public universities in a single fragile state and should be generalised to other settings only with caution. Future research should adopt longitudinal designs that link formulation practices to objective service-delivery indicators over time, incorporate institutional financial records alongside perceptual data, and extend the analysis to private and regional institutions across the wider East African region, so that the boundary conditions of the formulation-delivery relationship can be mapped more precisely.

References

Akintoye, I. R. (2017). Funding reforms and disparities in African higher education institutions. International Journal of Educational Development, 54, 78-92.

Andrews, M., Pritchett, L., & Woolcock, M. (2017). Building state capability: Evidence, analysis, action. Oxford University Press.

Babbie, E. R. (2020). The practice of social research (15th ed.). Cengage Learning.

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

Clarke, T. N., & Brudney, J. L. (1994). Institutional governance and public organisations. Public Administration Review, 54(4), 311-320.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

Creswell, J. W., & Plano Clark, V. L. (2017). Designing and conducting mixed methods research (3rd ed.). Sage Publications.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Creswell, J. W., & Poth, C. N. (2018). Qualitative inquiry and research design: Choosing among five approaches (4th ed.). Sage Publications.

de Waal, A. (2019). The political economy of accountability in African public services. London School of Economics, Conflict Research Programme Working Paper Series.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. Academy of Management Review, 14(1), 57-74.

Field, A. (2018). Discovering statistics using IBM SPSS statistics (5th ed.). Sage Publications.

García, M., Fernández, C., & Torres, L. (2018). Budget structures and institutional performance in European universities. Higher Education Quarterly, 72(1), 45-63.

Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.). Guilford Press.

Hood, C. (1991). A public management for all seasons? Public Administration, 69(1), 3-19.

Ingosi, M. T., Odero, J. A., & Ali, U. (2024). Financial resources and performance of public universities in Kenya. Journal of Accounting and Finance in Emerging Economies, 10(3), 1-13.

Johnson, B., Thompson, K., & Williams, S. (2019). Stakeholder involvement in university budgeting and institutional outcomes. Canadian Journal of Higher Education, 49(1), 45-67.

Kariuki, P. N. (2021). Participatory budgeting and resource deployment in Kenyan universities. African Journal of Governance and Development, 10(1), 34-52.

Kusek, J. Z., & Rist, R. C. (2004). Ten steps to a results-based monitoring and evaluation system. World Bank.

Lane, J. E., & Kivisto, T. (2008). Interests, information, and incentives in higher education: Principal-agent theory. Higher Education, 56(2), 141-165.

Lawson, A., & Harris, J. (2023). Public financial management reform in fragile and conflict-affected states (World Bank Development Paper No. 31). World Bank.

Majer, M., & Makuac, D. (2023). Public financial management reforms and their impact on service delivery in South Sudan. African Public Policy Review, 5(1), 23-42.

Nyok, D. M. (2023). Sustainable income strategies for South Sudan's public universities. South Sudan Journal of Higher Education, 2(1), 34-50.

Pallant, J. (2020). SPSS survival manual (7th ed.). McGraw-Hill Education.

DOI: https://doi.org/10.56879/ijbm.v5i2.97

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, 49(4), 41-50.

Pollitt, C., & Bouckaert, G. (2017). Public management reform: A comparative analysis (4th ed.). Oxford University Press.

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). Research methods for business students (8th ed.). Pearson.

Tetteh, L. A., Muda, P., Susuawu, D., Sunu, P., & Aneyire, E. K. (2022). Public financial management reform and service delivery in Ghana's public universities. International Research in Management Journal, 11(2), 42-67.

World Bank. (2018). South Sudan public expenditure review: Strengthening public financial management for service delivery. World Bank Group.

DOI: https://doi.org/10.56879/ijbm.v5i2.97