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The Effect of Budget Implementation on Education Service Delivery in Selected Public Universities in South Sudan

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Abstract

Purpose: The primary objective of this study was to investigate the influence of budget implementation on the delivery of educational services within selected public universities in South Sudan..

Methodology: This research was theoretically grounded in the New Public Management, Principal-Agent, and Resource-Based View frameworks. Employing a pragmatic research paradigm, the study utilized a convergent parallel mixed-methods design to gather insights from staff and policymakers at the University of Juba, the University of Bahr El-Ghazal, Upper Nile University, and the Ministry of Higher Education, Science and Technology. Quantitative data were derived from 358 completed surveys from a distributed sample of 400, demonstrating strong internal consistency with Cronbach's alpha coefficients of 0.840 and 0.886. These data were further enriched by qualitative evidence from 21 key informant interviews and 3 focus group discussions. Statistical analysis was performed using Pearson correlation and simple linear regression, while qualitative data were synthesized through thematic analysis.

Findings: The analysis revealed a significant positive relationship between budget implementation and education service delivery, with a Pearson correlation coefficient of 0.578 ($p < 0.01$). The simple linear regression model confirmed that budget implementation is a significant predictor of service delivery outcomes (beta = 0.578, $R^2 = 0.334$, $F(1, 356) = 178.36$, $p < 0.001$), necessitating the rejection of the null hypothesis. The qualitative phase of the study provided depth to these findings, identifying three recurring themes: the prevalence of chronic funding gaps and delayed disbursements; the persistence of weak internal controls and financial mismanagement; and the inequitable distribution of resources across university priorities.

Unique Contribution to Theory, Practice and Policy: This study contributes to the literature by identifying budget implementation as the most critical factor influencing financial management and service delivery within the public higher education sector. To address these challenges, the study recommends transitioning to more timely and predictable fund transfers to stabilize university operations. Practically, it is recommended that the government roll out an integrated financial management information system to enhance transparency and efficiency. Furthermore, from a policy perspective, the study advocates decentralizing expenditure authority to individual universities and establishing a protected funding window specifically for essential development and research activities.

Keywords: *Budget Implementation, Education Service Delivery, Public Financial Management, Budget Execution, Public Universities, South Sudan*

Introduction

Public financial management determines whether the resources a government commits to higher education are converted into the teaching, research, community engagement, and student services that universities are mandated to deliver. Within the budget cycle, implementation is the stage at which approved allocations are mobilized, disbursed, and spent; it is where financial plans either materialize as service improvements or are lost to delay, leakage, and misallocation. Where implementation is timely, transparent and disciplined, it sustains the institutional functions that depend on a predictable flow of funds; where it is slow, opaque and weakly controlled, even a sound budget fails to reach the lecture hall, the laboratory and the library (Pollitt & Bouckaert, 2017; Musiega et al., 2022). Implementation is therefore widely regarded as the most consequential stage of the public financial management cycle for service delivery.

The distinguishing feature of implementation is that it converts intention into action. Effective implementation rests on the predictable release of approved funds, transparent and well-documented disbursement, robust internal controls that limit leakage, and the equitable distribution of resources across recurrent and development priorities. When these conditions hold, budgets translate into functioning facilities, funded research, and supported staff. When they fail, salaries crowd out development spending, capital and research lines are the first to be cut, and the visible quality of education degrades even where the budget on paper appears adequate (Aduda & Mutua, 2020; Tetteh et al., 2022). Implementation thus tests whether the promises encoded in a budget are honoured in practice.

Empirical research consistently identifies implementation as a stronger determinant of service delivery than budget planning. Otieno and Ochieng (2018) reported that budget execution explained roughly a third of the variance in service quality in Kenyan universities, with timely disbursement and transparent allocation the strongest dimensions. Lee and Kim (2020) found, using panel data from South Korean and Malaysian universities, that the efficiency of fund utilization mattered more than the volume of funding. Hernandez and Garcia (2021) recorded the strongest public-financial-management effect in their Latin American sample, attributing it to the decisive role of disbursement patterns, while Mumbua (2022) documented that, in Uganda, execution gaps were most severe for capital expenditure. These studies establish implementation as the pivotal stage at which financial management is felt by students and staff.

This evidence nonetheless derives overwhelmingly from stable or middle-income systems, leaving the implementation stage in fragile and post-conflict contexts poorly understood. Andrews, Pritchett, and Woolcock (2017) argue that fragile states are prone to capability traps in which formal systems are adopted, but functional execution lags, and Lawson and Harris (2023) show that fiscal unpredictability is the defining implementation problem for conflict-affected states. In South Sudan, the World Bank (2018) documented chronic execution shortfalls across spending agencies, and the Ministry of Finance and Planning (2020) acknowledged that actual transfers to higher education averaged only about 40 percent of approved allocations. These conditions suggest that the implementation-delivery relationship observed elsewhere cannot be assumed to operate identically in South Sudanese universities, and that its magnitude and mechanisms require dedicated study.

South Sudan's public universities illustrate the implementation problem in its most acute form. Operating amid oil-revenue volatility, recurrent fiscal crises, and the legacy of armed conflict, they routinely receive only a fraction of their approved budgets, often disbursed late and concentrated in the final quarter of the fiscal year, when procurement cannot be completed (Majer & Makuac, 2023; Nyok, 2023). Salaries are frequently in arrears for months, internal controls remain largely manual, and the available funds are absorbed by recurrent costs at the expense of research, infrastructure, and community outreach. The result is a system in which the implementation stage, rather than the budget's adequacy on paper, becomes the binding constraint on the delivery of education services.

Despite the centrality of these challenges, no prior study has empirically isolated the effect of budget implementation on education service delivery within South Sudan's public university system, and studies that disaggregate public financial management into its component stages remain rare in the fragile-state literature. This paper addresses that gap by examining the second objective of a larger study and asking: What is the effect of budget implementation on education service delivery in selected public universities in South Sudan? The corresponding null hypothesis (H02) holds that budget implementation has no effect on education service delivery 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 produce it, and positions implementation relative to the formulation stage examined in the companion paper.

General Objectives

The primary objective of this study is to examine the impact of budget implementation on the delivery of educational services in selected public universities in South Sudan. Specifically, the research seeks to quantify the strength of the relationship between budget implementation and service delivery outcomes and to explore the institutional mechanisms that underlie this relationship.

Statement of the Problem

Public universities in South Sudan face enduring challenges, including chronic underfunding, irregular disbursement of funds, and declining research productivity, despite ongoing public financial management reforms (Majer & Makuac, 2023). These issues are exacerbated by the country’s fragile governance context, where approved budgets are executed at an aggregate rate of only about 40 percent (Majer & Makuac, 2023). Universities typically receive only a limited portion of their approved allocations, with funds often arriving late and clustered in the final quarter of the fiscal year, which undermines effective procurement and planning (Mumbua, 2022). This scenario results in prolonged salary arrears, persistent reliance on manual internal control systems, and a structural tendency to prioritize recurrent expenditures over capital investment, research, and community outreach (Aduda & Mutua, 2020; Hernandez & Garcia, 2021). As a result, the budget implementation phase has emerged as the principal constraint on educational service delivery, overshadowing the adequacy of budgetary allocations on paper. Nevertheless, there remains a dearth of empirical research that specifically isolates and analyzes the influence of budget implementation on service delivery within South Sudan's public university system a gap this study sought to address.

Theoretical Review

Three theories frame the analysis of how budget implementation shapes 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.

New Public Management Theory (Hood, 1991)

Introduced by Hood (1991) and further elaborated for the public sector by Pollitt and Bouckaert (2017), New Public Management (NPM) theory posits that public organizations achieve superior performance by adopting results-oriented financial management, efficient resource deployment, devolved managerial authority, and explicit accountability for outcomes. Within this framework, the efficiency with which approved funds are executed is considered decisive for service quality, often carrying greater weight than the sheer volume of resources available. This theory directly informs the study's central expectation that disciplined, transparent, and efficient budget implementation is a primary driver of improved education service delivery. Consequently, it provides the essential basis for interpreting the finding that execution quality is a stronger predictor of service outcomes than budget size, while simultaneously framing the current centralization of expenditure authority in the study area as a notable departure from the NPM prescription of devolved management.

While NPM offers a clear, action-oriented account of how implementation efficiency connects to service outcomes and emphasizes value for money, a principle especially salient in resource-constrained environments, it is not without limitations. Having been developed primarily within stable, well-resourced systems, the theory often assumes the presence of robust institutional capacities, such as functioning performance contracts and integrated financial systems, which are frequently weak or absent in fragile-state contexts where reforms are often adopted in form but lack substance. This study addresses these inherent weaknesses by interpreting NPM through the lens of fragile-state scholarship and leveraging qualitative evidence to verify whether efficiency-oriented practices operate in substance. By doing so, the research guards against the potential assumption that the formal adoption of modern budgeting techniques necessarily implies effective implementation.

Principal-Agent Theory (Eisenhardt, 1989)

Principal-Agent theory, as formalized by Eisenhardt (1989), analyzes delegated relationships characterized by information asymmetry and divergent interests. It predicts that weak monitoring permits moral hazard, wherein agents, in this case, university administrators, deploy resources in ways that deviate from the objectives of the principal, which comprises the government and the Ministry. This framework effectively explains how weak internal controls, opaque disbursement processes, and cash-based transactions facilitate the diversion of funds from intended educational purposes.

Furthermore, this theory accounts for the observed prioritization of recurrent over development expenditure as a moral-hazard response to inadequate oversight. While the theory's reliance on a clear, two-party hierarchy and an economic, self-interested conception of behavior may understate the influence of professional norms and complex university governance, this study addresses such limitations by situating the agency problem within a broader political-economy context. By incorporating qualitative accounts, the research surfaces critical power dynamics such as the pressures placed on junior officers to bypass procurement rules that a strictly economic model would otherwise overlook.

Resource-Based View (Barney, 1991)

The Resource-Based View (RBV), as articulated by Barney (1991), posits that organizational performance is contingent upon the effective acquisition, deployment, and management of internal resources. It asserts that true institutional capability requires strategic investment beyond mere operational maintenance, rather than the simple possession of assets. The RBV clarifies why the quality of resource deployment is as decisive as the quantity allocated; it frames the systematic neglect of research, infrastructure, and outreach the very components that build institutional capability as a failure of management that erodes a university's ability to innovate.

Although originally developed for competitive firms, which may lead it to understate macroeconomic constraints such as revenue volatility in fragile states, this study addresses these concerns by treating external fiscal shocks and political allocation as boundary conditions. By triangulating perceptual data with documentary evidence on execution rates, the analysis effectively grounds the study of resource deployment in the reality of the local environment. This allows for a robust assessment of how universities navigate the challenge of maintaining competitive capability while faced with severe fiscal constraints

Empirical Review

Otieno and Ochieng's (2018) study, Financial Management Practices and Service Delivery in Kenyan Public Universities, was conducted in Kenya using a mixed-methods approach across five universities and a sample of 340 respondents. Employing both questionnaires and semi-structured interviews, the study revealed that budget execution rates accounted for 34 percent of the variance in student satisfaction. Timely disbursement and transparent allocation emerged as the most influential dimensions of budget implementation, underscoring the practical impact of financial management on perceived service delivery.

Despite these insights, the study's reliance on student satisfaction as the sole indicator of service delivery is a notable limitation, as it may not capture the broader spectrum of institutional performance. Furthermore, the research was conducted in a relatively high-execution environment (execution rates between 65 and 75 percent), which is not representative of contexts with lower-budget execution, such as South Sudan. The current study addresses these gaps by employing a broader set of outcome measures and focusing on a low-execution, fragile context.

Lee and Kim (2020) conducted a comparative analysis titled Budget Execution and Academic Performance in South Korean and Malaysian Public Universities. Utilizing panel data from 40 universities over five years and applying fixed-effects regression, they found that budget implementation explained 31 percent of the variance in academic performance. Notably, the study highlighted that the efficiency with which funds were used was more consequential than the sheer volume of funding in driving academic outcomes.

However, the findings' applicability is limited by the study's focus on stable, middle-income countries, South Korea and Malaysia, where institutional and economic stability are markedly higher than in fragile or conflict-affected settings. This limits the transferability of its conclusions to less stable contexts. The present study addresses this shortcoming by examining budget implementation in a fragile-state environment, thereby extending the empirical literature to underexplored settings.

In their 2021 study, Budget Disbursement Patterns and Educational Outcomes in Latin American Universities, Hernandez and Garcia explored the relationship between public financial management and educational outcomes across Chile, Colombia, and Peru. Using a mixed-methods design with 500 respondents from 25 universities, the authors reported the strongest effect in the comparative literature ($R^2 = 0.42$), with delayed disbursements identified as the principal implementation challenge impacting educational outcomes.

Nonetheless, the study explicitly excluded fragile and conflict-affected states and did not investigate the moderating role of governance quality in shaping the link between financial management and outcomes. As a result, the literature still lacks empirical evidence on how fragility and governance interact with budget implementation processes. The current study addresses these gaps by focusing on a fragile state and incorporating governance considerations into the analysis.

Mumbua (2022) examined budget implementation challenges in Ugandan public universities in the study Budget Implementation Challenges in Ugandan Public Universities. Adopting a qualitative case study approach, the researcher conducted in-depth interviews with 45 key informants across three universities. The findings revealed average execution rates of 65 to 70 percent, with the most pronounced shortfalls occurring in capital expenditure relative to operational budgets.

While the study provides rich qualitative insights into the nature of implementation challenges, its exclusive reliance on qualitative methods means it could not quantify the relationship between budget execution and service delivery outcomes. This methodological limitation leaves unanswered questions regarding the magnitude of these effects. The present study addresses this gap by deploying a mixed-methods design, thus providing both qualitative depth and quantitative measurement.

In Resource Allocation and Institutional Performance in Kenyan Public Universities, Aduda and Mutua (2020) conducted a cross-sectional survey of 280 respondents, using regression analysis to examine the impact of financial transparency. Their results showed that transparent resource allocation explained 28.4 percent of the variance in institutional performance, leading to the conclusion that while transparency is necessary, it is insufficient on its own to guarantee improvements in quality.

A major limitation of this study is its single-country focus and lack of exploration into the mechanisms by which implementation failures result in service deficits. Without this mechanistic insight, policy recommendations remain generic. The current study addresses this gap by examining causal pathways in a new national context and analyzing how specific implementation failures translate into observable service delivery challenges.

Majer and Makuac's (2023) research, Public Financial Management Reforms and Their Impact on Service Delivery in South Sudan, provides the most contextually relevant evidence for the current analysis. Using a cross-sectional survey of 286 respondents from government agencies and conducting regression analysis, the authors found a significant but modest effect of public financial management reforms on service delivery (beta = 0.38), with execution rates among the lowest in sub-Saharan Africa.

However, the study's scope was broad, encompassing all government sectors rather than higher education specifically, and relied on an aggregated measure of public financial management that did not isolate the budget implementation stage or include qualitative insights. The present study addresses these gaps by focusing specifically on the university sector, disaggregating the implementation dimension, and supplementing quantitative analysis with qualitative evidence to provide a more nuanced understanding.

Across these studies, several patterns emerge: budget execution and transparency consistently explain a significant proportion of variance in performance and satisfaction outcomes, with reported R^2 values ranging from 0.28 to 0.42. However, contradictions surface regarding the contexts and methodologies employed most research has focused on stable or relatively high-execution settings, and few have examined fragile states or utilized mixed-methods designs. The principal gaps revolve around limited contextual diversity, narrow outcome measures, and insufficient exploration of mechanisms and governance factors. The current study responds directly to these gaps by investigating budget implementation in a fragile, low-execution environment, employing both quantitative and qualitative methods, and explicitly analyzing the role of governance and causal pathways in the university sector.

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 21 purposively selected key informants, of whom 15 are quoted using the codes KI-01 to KI-15, and three focus group discussions with students, one per university.

Budget implementation was measured through 14 items capturing revenue mobilisation, custody of funds, disbursement timeliness and transparency, allocation to academic functions, and legal compliance, while education service delivery was measured through 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 0.840 and 0.886, respectively), confirming a sound measurement foundation (Field, 2018; Pallant, 2020). Quantitative data were analysed 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 statistic was borderline, HC3 heteroscedasticity-consistent robust standard errors were applied to ensure valid inference (Hayes, 2018). Qualitative data were analysed 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 reflexivity strategies, including a reflexivity journal, member checking, and peer debriefing, employed to enhance trustworthiness (Creswell & Poth, 2018).

Qualitative Findings

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

Theme One: Chronic Funding Shortfalls and Delayed Disbursements

Sub-theme: The gap between approved and received funds. Informants described a persistent chasm between approved budgets and actual disbursements. A finance officer at the University of Bahr El-Ghazal explained:

> *"In the 2023/2024 financial year, we received only about 23 percent of our approved budget. The government cites revenue shortfalls due to declining oil prices. Staff salaries are often delayed by six to eleven months, and there is virtually no funding for research or infrastructure maintenance." (KI-05, 2024)*

Sub-theme: Salary arrears and the erosion of teaching. Delayed disbursement translated into prolonged salary arrears and a loss of academic capacity. An academic administrator at the University of Juba reported:

> *"We have not been paid for twelve months. As a result, some have left to work for NGOs that pay in dollars. Those who remain are demoralised and some engage in private consultancies during working hours just to survive. How can we expect quality teaching under these conditions? The students are the ones who suffer most." (KI-10, 2024)*

Sub-theme: The vicious cycle of decline. A senior administrator at Upper Nile University described a self-reinforcing downward spiral:

> *"Because we cannot maintain our facilities, student enrolment declines. As enrolment declines, our fee revenue drops. Because fee revenue drops, we become even more dependent on government funding, which is unreliable. We are trapped in a downward spiral that no single intervention can reverse." (KI-15, 2024)*

These accounts corroborate the lowest-rated survey items on disbursement timeliness and research funding, and they reveal a cascading dynamic that a cross-sectional coefficient cannot convey. The pattern is consistent with the Ministry of Finance and Planning (2020) finding that transfers to higher education averaged about 40 percent of approved allocations, and with the institutional-decay reasoning that persistent shortfalls erode the capacity an institution needs to attract future resources (Andrews, Pritchett, & Woolcock, 2017).

Theme Two: Weak Internal Controls and Financial Mismanagement

Sub-theme: Inadequate control mechanisms. A policy maker at the Ministry described systemic control weaknesses:

> *"The universities lack robust internal control mechanisms. There is inadequate segregation of duties, and financial records are often incomplete or poorly maintained. In some cases, funds are diverted from their intended purposes without adequate documentation or accountability." (KI-11, 2024)*

Sub-theme: Manual systems and undetected irregularities. A finance officer at the University of Juba linked weak controls to outdated infrastructure:

> *"Our accounting system is still largely manual. There is no integrated financial management system that can flag unusual transactions or enforce approval hierarchies. When errors or irregularities occur, they are often discovered months later, by which time it is too late to take corrective action." (KI-03, 2024)*

Sub-theme: Power dynamics and unenforceable rules. A junior finance officer at the University of Bahr El-Ghazal revealed the pressures that render controls inoperative:

> *"I was trained to follow procurement procedures, but in practice I am regularly instructed by senior management to process payments without proper documentation and to split purchases to avoid threshold limits. If I refuse, I am threatened with transfer or termination. The internal control system exists on paper, but the power dynamics within the institution make it unenforceable." (KI-13, 2024)*

These sub-themes show that control failures are not merely technical but reflect governance and power imbalances, directly illustrating the moral-hazard prediction of Principal-Agent theory (Eisenhardt, 1989). The persistence of cash-based transactions despite formal banking policy further widens the gap between policy and practice and creates opportunities for diversion that an integrated system would close.

Theme Three: Inequitable Resource Distribution Across Priorities

Sub-theme: Recurrent spending crowding out development. A student at Upper Nile University captured the squeeze on developmental activities:

> *"When funds eventually arrive, they are absorbed by recurrent expenditures, salaries, utilities, and administrative costs. There is nothing left for laboratory chemicals, field trips, or even printing examination papers. Research and community outreach are considered luxuries we cannot afford." (FGD-3, 2024)*

Sub-theme: A structural bias in the funding model. A policy maker located the bias in the national funding model itself:

> *"The government views universities primarily as salary-paying institutions, not as engines of research and development. There is no separate funding window for research, infrastructure, or innovation. Until we change this mindset, universities will continue to consume their budgets on salaries while their core academic functions deteriorate." (KI-14, 2024)*

Sub-theme: Political dimensions of allocation. The same policy-maker acknowledged the political shaping of distribution:

> *"The distribution of government funds to universities is not based purely on objective criteria. The University of Juba, being in the capital and having stronger political connections, consistently receives a larger share relative to its needs, while institutions serving regions perceived as politically marginal receive less favourable treatment." (KI-14, 2024)*

These accounts explain the low survey ratings on research and outreach funding and connect implementation inequities to regional disparities that have fuelled political grievance. The pattern aligns with the Resource-Based View's emphasis on developmental investment as the basis of institutional capability (Barney, 1991) and with evidence that horizontal inequalities between regions undermine stability in fragile states.

Quantitative Findings: Correlation and Regression Analyses

Before the inferential results are presented, the descriptive pattern provides essential context. Perceptions of budget implementation were mixed, with a composite mean of 3.25 (SD = 1.02), falling within the neutral range. Procedural and compliance items were rated highest, with alignment of financial management to legal requirements and the receipt of revenue through formal banking channels both attracting majority agreement, whereas the substantive deployment items were rated lowest, with disbursement timeliness (M = 2.75) and outreach funding (M = 2.91) falling within the disagreement region and research funding at the neutral floor (M = 3.00). Education service delivery returned a composite mean of 3.33 (SD = 1.10), with staff development and academic programs rated highest and infrastructure quality and community engagement lowest. The pattern, in which procedural functions operate reasonably while substantive resource deployment lags, frames the inferential analysis that follows.

Table 1: Composite Descriptive Statistics for the Study Variables (n = 358)

Variable	Items	Mean	Std. Dev.
Budget Implementation	14	3.25	1.02
Education Service Delivery	10	3.33	1.10

Source: Primary Data (2024)

Examining the service-delivery dimensions most directly dependent on implementation sharpens the picture. Staff development (M = 3.56) and academic programs meeting quality standards (M = 3.54) were rated within the agreement band, whereas infrastructure quality (M = 3.01) and community engagement (M = 3.08) fell to the neutral floor. This contrast mirrors the implementation pattern almost exactly: the dimensions that depend on capital and development spending, the very categories starved by late disbursement and the recurrent-expenditure bias, are precisely those that respondents rate lowest, while the dimensions sustained by recurrent salary spending hold up better. The descriptive evidence therefore foreshadows the inferential finding that implementation quality, and specifically the deployment of funds to developmental uses, is closely tied to perceived education service delivery.

Correlation Analysis

Table 2: Pearson Correlation between BI and ESD (n = 358)

Variable	BI	ESD
Budget Implementation (BI)	1.000	0.578**
Education Service Delivery (ESD)	0.578**	1.000

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

The correlation between budget implementation and education service delivery is positive, large, and statistically significant ($r = 0.578$, $p < 0.01$). Interpretation: by Cohen's (1988) conventions a coefficient at or above 0.50 is large, and at 0.578 the association is stronger than the formulation-stage correlation of 0.535 reported in the companion study, with implementation explaining roughly six percentage points more of the variance in service delivery. Implication: how budgets are actually executed is more closely tied to service outcomes than how they are planned, which directs reform attention toward the disbursement and control stage where the relationship is strongest.

Regression Analysis

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

Table 3: Model Summary - BI and ESD

R	R^2	Adjusted R^2	Std. Error of the Estimate
0.578	0.334	0.332	0.602

Source: Primary Data (2024); predictor: Budget Implementation

The model returned R = 0.578, $R^2 = 0.334$, adjusted $R^2 = 0.332$, and a standard error of 0.602. Interpretation: the multiple correlation confirms a large positive relationship; budget implementation alone explains 33.4 percent of the variance in education service delivery, the highest explanatory power of any single public-financial-management component examined; the negligible shrinkage (0.002) confirms a stable, non-overfitted model; and the standard error indicates good prediction accuracy. Implication: implementation is the strongest single financial lever on service delivery, yet because it leaves 66.6 per cent of variance unexplained, it must be reformed alongside formulation, monitoring and governance rather than in isolation.

Table 4: Analysis of Variance - BI and ESD

Model	Sum of Squares	df	Mean Square	F / Sig.
Regression	64.618	1	64.618	178.36
Residual	128.974	356	0.362	0.000
Total	193.592	357		

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

The overall model was significant ($F(1, 356) = 178.36$, $p < 0.001$). Interpretation: the F-statistic far exceeds the critical value of 3.84 at the 0.05 level, and it is substantially larger than the formulation-stage F of 143.10, confirming that the linear relationship is highly unlikely to have arisen by chance and is stronger than that of formulation. Implication: the data provide strong, model-level evidence against the null hypothesis, establishing implementation as a statistically reliable and comparatively powerful predictor of service delivery.

Table 6: Regression Coefficients - BI and ESD

Model	B	Std. Error	Beta	t / Sig.
(Constant)	0.959	0.180		5.335
Budget Implementation	0.728	0.054	0.578	13.355

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

The constant was significant (B = 0.959, t = 5.335, $p < 0.001$). Interpretation: even when budget implementation is scored at zero, a baseline level of education service delivery persists, sustained by institutional factors outside the implementation construct. Implication: a residual capacity for service delivery exists that reform should protect, but it is low, underlining that without functioning implementation, the system cannot rise much above this floor.

The unstandardized coefficient was B = 0.728 with a robust standard error of 0.054, and the standardized coefficient was beta = 0.578 ($t = 13.355$, $p < 0.001$). Interpretation: each one-unit improvement in budget implementation on the five-point scale is associated with a 0.728-unit improvement in education service delivery, and the standardized effect is large, exceeding the formulation-stage beta of 0.535; the precision of the estimate holds under heteroscedasticity-consistent inference. Implication: practical and comparatively large gains in service delivery are achievable through timely disbursement, transparent allocation, and stronger controls, and the regression equation ESD = 0.959 + 0.728(BI) provides university councils and the Ministry with a quantitative basis for projecting the returns to implementing reform.

Based on the significant model and slope, the null hypothesis (H_02) that budget implementation 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 implementation has a significant positive effect on education service delivery in the selected universities, stronger than the formulation-stage effect.

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 = 0.578) is echoed by informants' consistent recognition that the quality of execution shapes the quality of education. Second, the weak rating on disbursement timeliness is corroborated by accounts of universities receiving only about 23 percent of approved budgets and, more recently, final-quarter disbursements that prevent effective utilization. Third, the low ratings on research and outreach funding are substantiated by descriptions of development activities treated as luxuries that cannot be afforded. The qualitative strand also complements the statistics by revealing mechanisms the survey could not capture, namely the vicious cycle of declining quality and enrolment, the role of manual systems and cash transactions in enabling leakage, and the structural bias toward recurrent expenditure.

One area of complementarity concerned the inter-university pattern. The descriptive finding that the University of Juba scored higher than the other two institutions, although not statistically significant under Welch's ANOVA ($p = 0.083$), was explained qualitatively by its proximity to the Ministry of Finance, which facilitates more timely disbursement, and by its more established administrative systems. This spatial dimension of implementation effectiveness, surfaced only through the qualitative strand, carries direct implications for promoting equitable service delivery across geographically dispersed institutions and demonstrates the analytic value of the convergent design.

Discussion of Findings

The finding that budget implementation significantly predicts education service delivery (beta = 0.578, $R2 = 0.334$, $p < 0.001$), and does so more strongly than budget formulation, supports the central proposition of New Public Management that the efficiency of resource deployment

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matters more than the volume of resources available (Hood, 1991; Pollitt & Bouckaert, 2017). The qualitative evidence that universities received only about 23 percent of approved budgets, against an aggregate execution rate of roughly 40 percent, demonstrates an implementation failure that the theory predicts will depress service delivery regardless of nominal budget adequacy. The centralisation of expenditure authority documented here contradicts the NPM prescription of devolved management and helps explain why implementation is disconnected from educational need: the officials who execute the budget are not those who understand teaching and research requirements.

Through the Principal-Agent lens (Eisenhardt, 1989), the weak internal controls, manual systems, and cash transactions described by informants are textbook conditions for moral hazard, in which inadequate monitoring allows funds to be diverted from intended purposes. The account of junior officers pressured to bypass procurement rules shows that the problem is not ignorance of procedure but the institutional inability to enforce it, an insight that extends the agency framework toward the political and power dimensions of implementation. Read through the Resource-Based View (Barney, 1991): the systematic crowding out of research, infrastructure, and outreach by recurrent spending deprives universities of the developmental investment on which institutional capability depends, explaining why visible academic throughput is maintained while the resource base that should sustain it erodes.

Set against the six empirical studies, the present results both confirm and extend the literature. The variance explained ($R^2 = 0.334$) is strikingly close to Otieno and Ochieng's (2018) Kenyan estimate of 34 percent and exceeds Lee and Kim's (2020) 31 percent and Aduda and Mutua's (2020) 28.4 percent, while the standardized effect (beta = 0.578) is larger than the coefficients reported across the comparator studies. The implementation effect is weaker than Hernandez and Garcia's (2021) Latin American R^2 of 0.42, a divergence attributable to a floor effect: execution in South Sudan is so uniformly low that the observable variance is compressed, potentially understating the true relationship. The finding that the implementation effect exceeds the formulation effect confirms, in a fragile-state university setting, the broader pattern that resource-utilisation quality has greater leverage than resource planning, and the disaggregated, mixed-methods approach recovers an effect that Majer and Makuac's (2023) aggregated national measure obscured. In closing the gaps left by these studies, the paper contributes the first quantified, mechanism-rich account of the implementation-delivery relationship in South Sudanese higher education.

The severity of the implementation gap also distinguishes the South Sudanese case from comparable settings. Where execution shortfalls in stable and middle-income systems typically fall in the fifteen-to-thirty-five per cent range, the aggregate execution rate of around 40 percent documented by the Ministry of Finance and Planning (2020) represents a qualitatively more severe failure, compounded by post-conflict fragility and revenue volatility (Lawson & Harris, 2023; World Bank, 2018). This carries a clear strategic implication: in a context of binding capacity constraints, the evidence supports prioritizing a small number of high-leverage implementation reforms, namely predictable fund transfers, decentralized expenditure authority and basic enforceable controls, over comprehensive but unaffordable reform across every stage of the budget cycle at once. The finding that even partial, weak implementation already produces a larger service-delivery effect than formulation suggests that incremental gains in execution would yield disproportionate returns, making implementation the most cost-effective entry point for reform. At the same time, the interdependence of the budget stages means these gains will be sustained only if formulation realism and monitoring credibility improve in tandem, a sequencing question addressed in the integrated analysis of the wider study.

Conclusions and Recommendations

Conclusions

This study concludes that budget implementation is the most critical determinant of institutional outcomes in South Sudan's public universities, proving more influential than the initial budget formulation process. Qualitative evidence indicates that this relationship is mediated by the timeliness and predictability of fund disbursements, the rigor of internal controls, and the balance between recurrent and development expenditures. Currently, these essential channels are severely compromised by low aggregate execution rates, manual financial systems, and persistent salary arrears, which collectively render the implementation stage the primary bottleneck for education quality. Consequently, strengthening budget execution emerges as the highest-priority reform, though it must be pursued in tandem with broader improvements to monitoring and governance to address the interdependencies of the budget cycle. The research highlights a significant divide between formal policy and actual practice, cautioning that effective reform requires a realistic understanding of the fragile-state context. Ultimately, closing this implementation gap necessitates sustained attention to the institutional, infrastructural, and political conditions required to ensure predictable and enforceable financial management.

Recommendations

Drawing from the conclusions of this study, the following recommendations are advanced to strengthen financial management and educational outcomes in South Sudan's public universities. First, the Ministry of Finance and Planning, in collaboration with the Ministry of Higher Education, Science and Technology, should establish transparent and predictable fund-transfer mechanisms, including statutory timelines to eliminate the concentration of disbursements in the final quarter. Second, institutions must prioritize the deployment of an integrated financial management information system to replace manual ledgers, thereby enforcing approval hierarchies and ending reliance on untraceable cash payments. Third, university councils should decentralize expenditure authority to academic departments to ensure that units with the best understanding of educational needs possess the financial agility to respond effectively.

To address systemic imbalances, the government should establish a protected, ring-fenced funding window specifically for development activities such as research, infrastructure, and community outreach. Furthermore, universities must implement essential internal controls, such as dual authorization and enforced procurement thresholds, while providing protections for audit staff who uphold these standards. Finally, government and development partners should adopt an equity-sensitive allocation formula that accounts for the geographical and political disadvantages of regional institutions, ensuring that financial execution does not exacerbate regional disparities.

Regarding its scholarly impact, this study offers three significant contributions. Empirically, it provides the first dedicated, quantified analysis of the impact of budget implementation on education service delivery within South Sudan, a context previously lacking such examination. Methodologically, it demonstrates the efficacy of disaggregating public financial management; by isolating the implementation phase, the study uncovers an effect size that surpasses both formulation-stage findings and previously reported national estimates, while integrating qualitative insights to explain the underlying mechanisms. Theoretically, the research illustrates how New Public Management, Principal-Agent theory, and the Resource-Based View operate in concert within a fragile-state environment. In doing so, it refines these frameworks with essential contextual caveats, thereby contributing to the emerging body of scholarship on public financial management in post-conflict higher education.

Limitations and Future Research

The study is subject to several limitations that qualify its conclusions. First, the cross-sectional design captures perceptions at a single point in time and cannot fully establish causal direction, although the triangulated qualitative evidence on mechanisms strengthens the causal interpretation. Second, reliance on self-reported perceptions introduces the possibility of common-method and social-desirability biases, which are partially mitigated here through documentary evidence and multiple respondent categories. Third, the uniformly low level of budget execution across the three universities produces a floor effect that compresses the observable variance and may understate the true implementation-delivery relationship. Fourth, the findings are specific to three public universities in a single fragile state and should be generalized with caution. Future research should adopt longitudinal designs that link execution rates to objective service-delivery indicators over time, incorporate institutional financial records alongside perceptual data, and employ structural equation modeling or dynamic simulation to capture the interdependencies between the formulation, implementation, and monitoring stages of the budget cycle.

References

Aduda, J., & Mutua, M. (2020). Resource allocation and institutional performance in Kenyan public universities. *African Journal of Education and Practice*, 6(2), 28-46.

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.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

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

Chalu, H. (2020). Determinants of public financial management performance in Tanzanian local authorities. *Business Management Review*, 23(1), 60-84.

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.

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

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.

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

Hernandez, R., & Garcia, M. (2021). Budget disbursement patterns and educational outcomes in Latin American universities. *Latin American Journal of Higher Education*, 12(2), 55-79.

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

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

Lee, S., & Kim, J. (2020). Budget execution and academic performance in South Korean and Malaysian public universities. *Asian Journal of Education Finance*, 8(1), 19-41.

Majer, J., & Makuac, P. (2023). Public Financial Management Reforms and Their Impact on Service Delivery in South Sudan.

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.

Ministry of Finance and Planning. (2020). Public expenditure review of the higher education sub-sector. *Government of the Republic of South Sudan.*

Mumbua, F. (2022). Budget implementation challenges in Ugandan public universities. East *African Journal of Education Studies*, 5(1), 88-104.

Mumbua, M. (2022). Budget Implementation Challenges in Ugandan Public Universities.

Musiega, A., Tsofa, B., Nyawira, L., Njuguna, R. G., Munywoki, J., Hanson, K., Mulwa, A., Molyneux, S., Maina, I., Normand, C., Jemutai, J., & Barasa, E. (2022). Examining the influence of budget execution processes on the efficiency of county health systems in Kenya. Health Policy and Planning, 37(10), 1276-1289.

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

Otieno, D., & Ochieng, F. (2018). Financial Management Practices and Service Delivery in Kenyan Public Universities.

Otieno, D., & Ochieng, P. (2018). Financial management practices and service delivery in Kenyan public universities. *Journal of Public Administration and Governance*, 8(3), 112-131.

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

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.