FINANCIAL GOVERNANCE AND FISCAL SUSTAINABILITY OF COUNTY GOVERNMENTS IN KENYA: THE MEDIATING ROLE OF BUDGET IMPLEMENTATION EFFICIENCY

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International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366

Received: 11th August 2026

Published: 26th August 2026

Full Length Research

Available Online at: https://iajournals.org/articles/iajef_v5_i4_393_425.pdf

Citation: Nyamute, W. (2026). Financial governance and fiscal sustainability of county governments in Kenya: The mediating role of budget implementation efficiency. *International Academic Journal of Economics and Finance, 5*(4), 393-425.

ABSTRACT

This study examined how financial governance influences the fiscal sustainability of county governments in Kenya and whether budget implementation efficiency transmits that influence. Devolution transferred substantial service-delivery and financial responsibilities to Kenya's 47 counties, yet weak own-source revenue performance, high wage burdens, low development absorption, unresolved audit findings and accumulating pending bills have persisted, indicating that formal public financial management rules have not consistently produced sustainable county finances. Financial governance was conceptualized through three pillars, namely revenue governance, expenditure discipline and audit accountability, each measured using objective accounting ratios rather than perceptions, and budget implementation efficiency was specified as the mediating mechanism linking governance to sustainability. The study adopted a positivist orientation and an explanatory longitudinal design, using archival county-year data for all 47 county governments over the period FY2016/17 to FY2023/24, yielding 376 county-year observations. Data were extracted from Controller of Budget county budget implementation review reports, Auditor-General county audit reports, audited county financial statements, Commission on Revenue Allocation own-source revenue studies, Kenya National Bureau of Statistics population and economic data, and National Treasury budget review documents. The constructs were specified as composites of non-interchangeable accounting indicators and estimated using partial least squares structural equation modelling with 5,000 bootstrap subsamples. The descriptive results revealed wide variation across counties, with own-source revenue effort (mean = 0.117) and development-share compliance (mean = 0.191) recording the weakest performance. The structural results showed that revenue governance and audit accountability had positive and significant effects on budget implementation efficiency, whereas expenditure discipline did not. Expenditure discipline, audit accountability and budget implementation efficiency had significant positive direct effects on fiscal sustainability, while revenue governance did not. The model explained 25.1% of the variance in budget implementation efficiency and 75.5% of the variance in fiscal sustainability, and both endogenous constructs recorded positive predictive relevance. Budget implementation efficiency fully mediated the relationship between revenue governance and fiscal sustainability and partially mediated the relationships involving expenditure discipline and audit accountability. The study concludes that budget execution is the principal channel through which financial governance is converted into fiscal sustainability, and recommends that county treasuries, county assemblies, the Controller of Budget, the Auditor-General and the National Treasury treat realistic revenue forecasting, audit follow-up and execution capacity as one integrated reform agenda rather than as separate interventions.

Key words: Financial Governance; Fiscal Sustainability; Budget Implementation; County Governments; PLS-SEM; Secondary Data; Kenya.

INTRODUCTION

Background of the Study

Devolution moved substantial service-delivery and financial responsibilities to Kenya's 47 county governments. This institutional arrangement was intended to bring resource allocation closer to local needs, promote equitable development and strengthen accountability. Article 201 of the Constitution requires openness, accountability, prudent use of public money and clear fiscal reporting, while the Public Finance Management Act requires county treasuries to enforce fiscal responsibility (Constitution of Kenya, 2010; Public Finance Management Act, 2012). County financial performance is therefore not simply an accounting outcome; it is an expression of constitutional governance.

The county public-finance framework contains clear quantitative expectations. At least 30% of the budget should be allocated to development expenditure over the medium term, actual development expenditure should meet the statutory threshold, and expenditure on wages and benefits should not exceed 35% of total county revenue. County debt is also subject to a ceiling and fiscal risks must be managed prudently (Public Finance Management Act, 2012; Public Finance Management [County Governments] Regulations, 2015). These rules connect revenue mobilization, expenditure composition, budget execution, audit accountability and financial sustainability.

Nevertheless, official reports repeatedly identify weak own-source revenue performance, low development absorption, high wage bills, manual or weak financial controls, unresolved audit findings and accumulating pending bills. The Controller of Budget has characterized pending bills as a threat to service delivery and fiscal credibility, while the Commission on Revenue Allocation has documented material gaps between actual own-source revenue and estimated county revenue potential (Commission on Revenue Allocation [CRA], 2022; Office of the Controller of Budget [OCOB], 2022, 2025). The Auditor-General's county reports likewise present cross-cutting weaknesses in compliance, procurement, asset management, payroll and implementation of prior recommendations (Office of the Auditor-General [OAG], 2025).

These problems are linked. Unrealistic revenue forecasts can produce unaffordable expenditure commitments; weak expenditure controls can generate arrears; failure to act on audit recommendations can allow control weaknesses to persist; and low absorption can prevent

approved resources from being converted into public investment. Public financial management frameworks consequently treat budget credibility, execution, accounting, reporting and external scrutiny as connected parts of one system rather than isolated functions (Andrews et al., 2014; PEFA Secretariat, 2016). Research on budget institutions similarly shows that transparent and binding procedures are associated with stronger fiscal discipline (Alesina et al., 1999; Alesina & Perotti, 1996). A structural model is therefore preferable to separate regressions because it can represent multidimensional governance constructs and estimate direct and indirect relationships simultaneously (Hair et al., 2019; Nitzl et al., 2016).

Problem Statement

Kenya has an extensive architecture for county public financial management, including constitutional principles, statutory fiscal rules, quarterly budget monitoring, annual financial reporting and external audit. Yet recurring revenue shortfalls, expenditure imbalances, low development-budget absorption, unresolved audit issues and pending obligations indicate that formal rules have not consistently translated into sustainable county finances. For example, the Controller of Budget reported county pending bills of KSh153.02 billion at 30 June 2022 alongside development-budget absorption of only 50.9%, illustrating the coexistence of unpaid obligations and incomplete development execution (OCOB, 2022). More recent national fiscal reviews continue to identify revenue performance, delayed releases, pending bills and weak budget implementation as central fiscal risks (National Treasury, 2024; OCOB, 2025).

A substantial strand of Kenyan county-finance research has used cross-sectional questionnaires, individual counties or a limited set of governance practices. For example, Sande et al. (2023) surveyed county officials about budgeting practices, while Murigi and Musau (2023) examined financial-management practices within Nairobi City County. These designs are useful for studying managerial perceptions, but they do not exploit the full longitudinal record of audited and routinely monitored financial information available for all counties. Published Kenyan work also tends to estimate direct relationships rather than a financial-governance mechanism that links revenue, expenditure and audit dimensions through budget implementation (Murigi & Musau, 2023; Sande et al., 2023). It therefore remains unclear whether the three governance pillars improve sustainability directly or primarily by making approved budgets more executable.

The empirical problem is consequently both substantive and methodological. Substantively, the available Kenyan evidence does not establish which governance pillar most strongly supports sustainable county finances or whether budget execution is the principal transmission channel. Methodologically, county-year observations are nested within counties, financial constructs are formed by non-interchangeable accounting indicators, and single-equation models cannot separate direct from transmitted effects (Diamantopoulos & Winklhofer, 2001; Wooldridge, 2010). This study addressed these gaps by assembling a county-year panel covering all 47 counties and

estimating a structural model in which the three financial-governance pillars were linked to fiscal sustainability both directly and through budget implementation efficiency.

Research Objective

The general objective of the study was to determine the effect of financial governance on the fiscal sustainability of county governments in Kenya, with budget implementation efficiency as a mediating mechanism.

The specific objectives were to:

i. determine the effect of revenue governance on budget implementation efficiency;
ii. establish the effect of expenditure discipline on budget implementation efficiency;
iii. assess the effect of audit accountability on budget implementation efficiency;
iv. determine the direct effects of revenue governance, expenditure discipline and audit accountability on fiscal sustainability;
v. determine the effect of budget implementation efficiency on fiscal sustainability; and
vi. test whether budget implementation efficiency mediates the relationships between the three financial-governance pillars and fiscal sustainability.

Research Questions

i. How does revenue governance affect county budget implementation efficiency?
ii. How does expenditure discipline affect county budget implementation efficiency?
iii. How does audit accountability affect county budget implementation efficiency?
iv. How do the three financial-governance pillars directly affect fiscal sustainability?
v. How does budget implementation efficiency affect fiscal sustainability?
vi. Does budget implementation efficiency mediate the relationships between financial governance and fiscal sustainability?

Significance and Contribution

The study makes three contributions. First, it offers a finance-centered governance model constructed from objective ratios rather than perceptions. Second, it integrates the revenue, expenditure and assurance stages of the public-finance cycle and tests budget execution as a mechanism. Third, it develops a reproducible county-year dataset that can support benchmarking, early-warning analysis and future studies. The results help county treasuries, county assemblies, the Controller of Budget, the Auditor-General, the Commission on Revenue Allocation and the National Treasury identify whether sustainability failures originate mainly in revenue planning, expenditure discipline, assurance follow-through or execution capacity.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Conceptualizing Financial Governance

Financial governance comprises the rules, institutions, controls and accountability processes through which public entities plan, mobilize, allocate, spend, monitor and report financial resources (Andrews et al., 2014; PEFA Secretariat, 2016). In this study it is an umbrella concept represented by three distinct pillars rather than a single reflective scale: revenue governance, expenditure discipline and audit accountability. The indicators are causal components: a county can perform well on one component and poorly on another, and removing an indicator would alter the construct's substantive meaning. This reasoning follows established guidance on formative measurement and measurement-model specification (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003).

Revenue Governance

Revenue governance concerns the realism of revenue forecasts, effectiveness of own-source revenue mobilization and stability of the resource envelope. Revenue forecasts are central to budget credibility because appropriations based on resources that do not materialize require expenditure compression, arrears or additional financing (PEFA Secretariat, 2016). Own-source revenue can increase local fiscal autonomy and strengthen the link between local taxation and local expenditure decisions, although the effect of decentralization depends on transfer design and the hardness of subnational budget constraints (Oates, 1972, 1999; Rodden, 2002). Kenya's CRA estimates substantial gaps between actual county collections and own-source revenue potential, demonstrating meaningful variation in local revenue effort (CRA, 2022).

Expenditure Discipline

Expenditure discipline is the capacity to keep commitments within available resources and statutory limits while protecting priority spending. Budget institutions and fiscal rules affect expenditure choices by constraining deficit creation, fragmentation and opportunistic commitments (Alesina et al., 1999; Poterba, 1994). In Kenya, wage costs, recurrent expenditure, development allocations and debt are subject to explicit fiscal-responsibility principles (Public Finance Management Act, 2012; Public Finance Management [County Governments] Regulations, 2015). A high wage burden reduces expenditure flexibility, while commitments made without available financing can generate pending bills and liquidity pressure (IMF, 2022; OCOB, 2025). Expenditure discipline should therefore produce a more executable budget and a more resilient financial position.

Audit Accountability

External audit is an accountability mechanism intended to reduce information asymmetry between public officials, legislatures and citizens (Jensen & Meckling, 1976; Power, 1997). Audit accountability extends beyond receipt of an opinion to the materiality of findings, resolution of

prior-year matters and implementation of corrective action, consistent with the PEFA emphasis on external scrutiny and audit follow-up (PEFA Secretariat, 2016). Monitoring can constrain opportunistic or inefficient resource use when findings generate credible corrective incentives (Jensen & Meckling, 1976). Conversely, repeated unresolved findings indicate that the feedback function of audit is weak and that control failures may persist (OAG, 2025; Power, 1997).

Budget Implementation Efficiency

Budget implementation efficiency is the extent to which a county converts an approved budget into lawful, timely and appropriately composed expenditure without large deviations. Absorption is not synonymous with value for money: a high outturn shows execution but does not by itself establish economy, efficiency or effectiveness, whereas a persistently low outturn indicates that authorized programmes were not implemented as planned (Andrews et al., 2014; PEFA Secretariat, 2016). The PEFA framework evaluates budget reliability through aggregate expenditure outturn, expenditure composition outturn and revenue outturn (PEFA Secretariat, 2016, 2022). Accordingly, the present study captures implementation through overall, recurrent and development absorption and an expenditure-credibility indicator. These measures assess execution relative to authorization, not service-delivery outcomes.

Fiscal Sustainability

Fiscal sustainability conventionally concerns whether a government's current policy can satisfy its intertemporal budget constraint; empirical work frequently examines whether fiscal balances respond sufficiently to accumulated obligations (Bohn, 1998). At county level, sustainability can be defined operationally as the ability to maintain services and meet present and future obligations without disruptive expenditure compression, arrears accumulation or extraordinary external support. Formal debt alone is incomplete because arrears, accounts payable and weak liquidity can create substantial subnational fiscal stress (IMF, 2022). The IMF therefore recommends monitoring liabilities, operating balances, liquidity, revenue vulnerability and compliance with fiscal rules as early-warning indicators (IMF, 2022). This study operationalizes sustainability through operating balance, liquidity coverage, pending-bill burden and liability burden, oriented so that a higher score denotes stronger sustainability.

Theoretical Foundation

Fiscal Federalism Theory

Fiscal federalism explains the allocation of taxing, spending and transfer responsibilities across levels of government. The decentralization theorem holds that local provision can improve allocative efficiency where preferences differ and spillovers are limited, while the Tiebout model emphasizes competition and household sorting among jurisdictions (Oates, 1972, 1999; Tiebout, 1956). Later work shows that benefits depend on adequate revenue authority, institutional quality, transfer design and hard budget constraints; transfer dependence without credible discipline can weaken fiscal incentives (Rodden, 2002; Weingast, 2009). For Kenyan counties, the theory

supports examining own-source revenue effort, dependence on transfers and expenditure choices as determinants of fiscal health.

Agency Theory

Agency theory focuses on information asymmetry, monitoring costs and divergent incentives between principals and agents (Jensen & Meckling, 1976). In county finance, citizens and legislatures delegate resource management to executives and accounting officers, creating a need for reporting, oversight and enforceable controls. Public audit can reduce the resulting information gap, although its effect depends on whether findings prompt correction rather than ritual compliance (Power, 1997). Agency theory therefore grounds the audit-accountability and expenditure-discipline pathways.

Public Financial Management Cycle

The public financial management cycle provides the study's integrative logic. Credible budgets require realistic revenues and disciplined allocations; implementation requires cash releases, procurement and commitment control; accounting and audit provide information for oversight and correction (Andrews et al., 2014; PEFA Secretariat, 2016). Because these stages are interdependent, a weakness in revenue forecasting or commitment control can propagate into execution deviations, arrears and adverse financial positions (IMF, 2022; PEFA Secretariat, 2016). The proposed mediator captures this transmission: governance arrangements should affect sustainability partly because they determine whether authorized resources are executed predictably and within available financing.

Hypothesis Development

Realistic revenue forecasts improve budget credibility by aligning authorized expenditure with the resources likely to become available; large revenue deviations can instead require expenditure compression, delayed payments or revised appropriations (Andrews et al., 2014; PEFA Secretariat, 2016). The study therefore proposes:

H1: Revenue governance has a positive effect on budget implementation efficiency.

Binding and transparent budget institutions are associated with stronger fiscal discipline, while rigid personnel and recurrent commitments reduce the room available for planned programmes (Alesina et al., 1999; Poterba, 1994). Accordingly:

H2: Expenditure discipline has a positive effect on budget implementation efficiency.

Effective external scrutiny and audit follow-up should correct weaknesses in procurement, reporting, asset management and commitment control that impede execution (PEFA Secretariat, 2016; Power, 1997). Therefore:

H3: Audit accountability has a positive effect on budget implementation efficiency.

Revenue realism supports stable financing, expenditure discipline protects the operating balance and liquidity, and credible audit accountability can discourage misstatement and recurring control failures (Alesina et al., 1999; Alt & Lassen, 2006; Benito & Bastida, 2009). Thus:

H4: Revenue governance has a positive direct effect on fiscal sustainability.
H5: Expenditure discipline has a positive direct effect on fiscal sustainability.
H6: Audit accountability has a positive direct effect on fiscal sustainability.
Reliable implementation converts authorised plans into timely expenditure and limits the deviations and arrears through which execution problems weaken the financial position (Andrews et al., 2014; IMF, 2022; PEFA Secretariat, 2016). Therefore:
H7: Budget implementation efficiency has a positive effect on fiscal sustainability.
Finally, the PFM-cycle logic implies that governance may improve sustainability by creating a more credible and executable budget, making implementation a theoretically plausible transmission mechanism (Andrews et al., 2014; PEFA Secretariat, 2016). The indirect effects are stated separately:
H8a-H8c: Budget implementation efficiency positively mediates the respective relationships of revenue governance, expenditure discipline and audit accountability with fiscal sustainability.

Conceptual Model

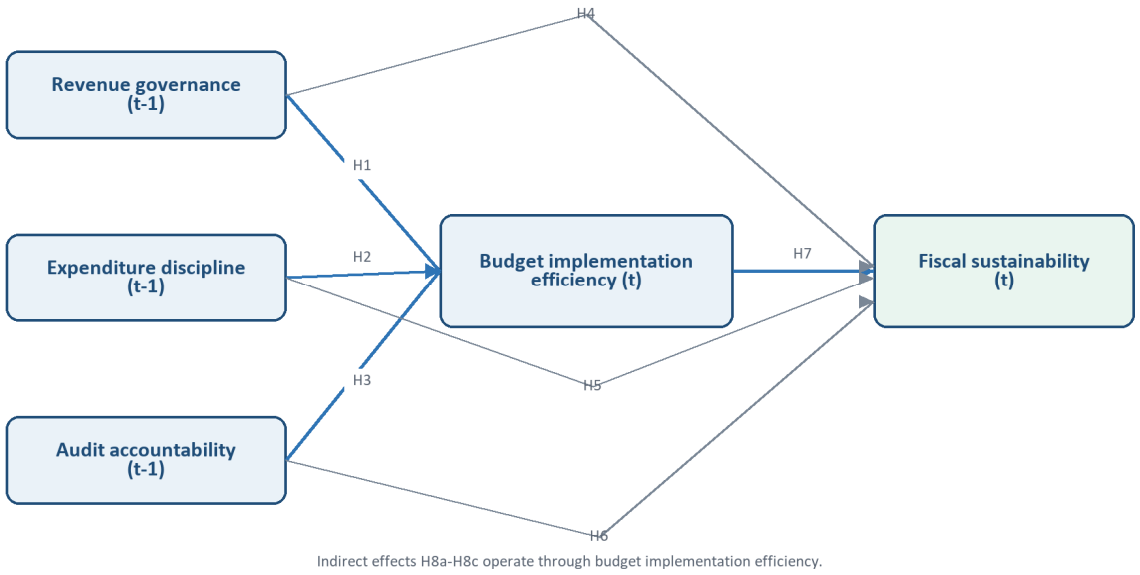

Figure 1: Proposed Conceptual Model
Controls included county population, county economic capacity measured by gross county product, election-cycle effects and the COVID-19 period. Dashed paths represent direct effects retained alongside the mediated paths.

RESEARCH METHODOLOGY

Research Philosophy and Design
The study adopted a positivist orientation because it tested theoretically derived relationships using observable financial records and reproducible statistical procedures. An explanatory longitudinal

design was used in order to exploit both cross-county and within-county variation (Wooldridge, 2010). The unit of analysis was the county government and the unit of observation was the county-financial-year. The study covered FY2016/17 to FY2023/24, a period that follows commencement of the 2015 county public financial management regulations and provides eight comparable reporting years (Public Finance Management [County Governments] Regulations, 2015).

The structural model was estimated on the pooled county-year panel, relating the financial-governance indicators to budget implementation efficiency and fiscal sustainability within the same financial year. The estimation sample comprised 376 county-year observations, being 47 counties observed over eight financial years. Because a contemporaneous specification cannot by itself establish temporal ordering, the direction of the modelled relationships rests on the institutional sequence of the public financial management cycle rather than on statistical identification alone. This restriction is revisited in Sections 3.10 and 5.4.

Population, Census and Eligibility

The target population comprised all 47 county executives established within Kenya's devolved system (Constitution of Kenya, 2010). A census was appropriate because official records exist for the complete population and excluding counties would have unnecessarily reduced national coverage. County assemblies and separate county entities were not combined with county executives unless their figures were explicitly consolidated in the official county total. An observation was treated as eligible where the core budget, revenue, expenditure and financial-position variables could be reconciled for the same reporting entity and financial year.

The analysis maintained a data-availability log. Where a figure was unavailable in the primary source, it was sought in the annual county budget implementation report, the audited financial statements, the Auditor-General report and the county annual report, in that order. No observation was mean-imputed merely to preserve sample size, and missing observations are disclosed by county, year, construct and reason in the data-availability log accompanying the study.

Data Sources and Collection Procedure

Secondary data were extracted from official sources whose reporting mandates and coverage are established in Kenya's constitutional and public financial management framework (Constitution of Kenya, 2010; Public Finance Management Act, 2012). The Controller of Budget's consolidated annual county reports provided county-level revenue, expenditure, absorption and pending-bill information (OCOB, 2022, 2025). The Auditor-General's county executive audit reports and cross-cutting summaries provided the audit-accountability data (OAG, 2025). Audited county financial statements provided the balances required for liquidity, liabilities and operating results; Commission on Revenue Allocation reports provided own-source revenue potential and fiscal-capacity information; and Kenya National Bureau of Statistics data provided population and economic controls (CRA, 2022; Kenya National Bureau of Statistics [KNBS], 2019). National

Treasury budget-review documents supported contextual and reconciliation checks (National Treasury, 2024). Table 1 summarizes the institutions, document families and principal variables obtained from each source.

Table 1: Data Sources and Principal Variables

Institution	Document family	Principal variables
OCOB	Annual county BIRRs	OSR target and actual; approved and actual expenditure; recurrent/development absorption; compensation; pending bills
OAG	County executive audit reports	Audit opinion; material findings; unresolved prior-year matters; reporting and control weaknesses
County/PSASB	Audited annual financial statements	Revenue, expenditure, assets, cash, current liabilities, total liabilities, payables
CRA	OSR and fiscal-capacity reports	OSR potential, tax gap and selected county-capacity measures
KNBS	Population and county economic statistics	Population, GCP or other scale/economic controls
National Treasury	BROP and fiscal-risk reports	Cross-checks, policy context and national transfer information

Data were entered into a structured extraction sheet keyed by county code and financial year. Each value retained its document title, page, table label, unit, extraction date and any reconciliation note. Monetary values were stored in Kenya shillings and converted consistently before ratios were calculated. A random 20% of observations and all audit-accountability coding were independently rechecked, and disagreements in categorical audit coding were resolved against the source document.

Operational Definition and Measurement

All substantive constructs were conceptualized as composites whose indicators define different components of each financial concept rather than interchangeable manifestations of one underlying trait (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003). Indicators of this kind need not be highly correlated, and reflective internal-consistency criteria are therefore not, in principle, the primary basis for retaining them (Hair et al., 2019). Indicators were oriented so that larger values consistently represent stronger governance, implementation or sustainability, and where a raw ratio denoted risk it was reverse-scored using a rule fixed before hypothesis testing. Table 2 presents the constructs, indicators, computations, sources and orientation.

Table 2: Operationalization and Measurement of Constructs

Construct	Indicator	Computation	Source	Dir.
Revenue governance (RG)	RG1 OSR realization	Actual OSR / approved OSR target	OCOB	+
	RG2 total revenue credibility	1 - |actual total revenue - approved total revenue| / approved total revenue	OCOB / statements	+
	RG3 OSR growth stability	Negative absolute deviation of annual OSR growth from county trend; sensitivity: annual growth	OCOB	+
	RG4 OSR effort	Actual OSR / estimated OSR potential, where year-compatible; otherwise excluded from main model	CRA / OCOB	+
Expenditure discipline (ED)	ED1 wage discipline	Reverse of compensation / actual total revenue; threshold benchmark 35%	OCOB	+
	ED2 recurrent coverage	1 - max[0, (recurrent expenditure - actual revenue) / actual revenue]	OCOB	+
	ED3 development-share compliance	Actual development expenditure / actual total expenditure; benchmark 30%	OCOB	+
	ED4 commitment discipline	Reverse of new pending bills / actual expenditure, if separable	OCOB / statements	+
Audit accountability (AA)	AA1 audit opinion	Unmodified=4; qualified=3; adverse=2; disclaimer=1	OAG	+
	AA2 prior-issue resolution	Resolved prior-year issues / prior-year issues reported	OAG	+
	AA3 material-finding burden	Reverse log(1 + count of material financial/compliance findings)	OAG	+
	AA4 reporting timeliness	On-time submission/reporting score based on documented compliance	OAG / OCOB	+
Budget implementation efficiency (BIE)	BIE1 overall absorption	Actual total expenditure / approved total expenditure	OCOB	+
	BIE2 development absorption	Actual development expenditure / approved development budget	OCOB	+
	BIE3 recurrent absorption	Actual recurrent expenditure / approved recurrent budget	OCOB	+

Construct	Indicator	Computation	Source	Dir.
	BIE4 expenditure credibility	1 - |actual total expenditure - approved total expenditure| / approved total expenditure	OCOB	+
Fiscal sustainability (FS)	FS1 operating balance	(actual total revenue - actual recurrent expenditure) / actual total revenue	Statements / OCOB	+
	FS2 liquidity coverage	Cash and cash equivalents / current liabilities; capped for extreme denominators	Audited statements	+
	FS3 pending-bill burden	Reverse of verified pending bills / actual total revenue	OCOB / OAG	+
	FS4 liability burden	Reverse of total liabilities / actual total revenue	Audited statements	+

Notes: '+' indicates that larger transformed values denote stronger performance. Winsorisation, capping and reverse-scoring rules were fixed before hypothesis testing and documented in a reproducible codebook. Indicators with structurally unavailable data across most county-years were not replaced with conceptually different proxies.

Control Variables

The structural model included a parsimonious set of controls selected before estimation: log population, economic capacity measured by gross county product, an election-year indicator and a COVID-period indicator. Population and fiscal capacity shape the scale and volatility of subnational finances, while dependence on transfers can alter local fiscal incentives (Oates, 1999; Rodden, 2002). Political budget-cycle research provides the basis for controlling election timing (Alt & Lassen, 2006), and the COVID-19 period is controlled because it disrupted both revenue collection and expenditure execution. Controls entered the mediator and outcome equations where theoretically justified.

Data Preparation

Data preparation began by reconciling the reporting entity, financial year and monetary unit across documents and retaining a source trail for every value. Ratios were calculated from unrounded amounts where available, and zero or implausible denominators were flagged for source verification. Missingness, duplicate records, discontinuities, restatements and definitional changes were inspected before any composite was created. Financial values were not replaced by cross-county means, because such imputation would have erased genuine fiscal differences.

Continuous ratios were winsorised at the 1st and 99th percentiles. Risk indicators were oriented so that larger values consistently denote stronger governance or sustainability. Indicators were standardized within financial year before pooled estimation in order to reduce scale drift and the

influence of common annual shocks. These transformations were fixed in the codebook before path significance was inspected.

PLS-SEM Specification and Justification

PLS-SEM was appropriate because the model is prediction-oriented, contains composite constructs formed from non-interchangeable accounting indicators, and estimates simultaneous direct and indirect relationships (Chin, 1998; Hair et al., 2019; Henseler et al., 2009). The method was not selected merely because it is often described as suitable for small samples; adequacy was evaluated against model complexity and the desired level of statistical power (Hair et al., 2019). The analysis was implemented in SmartPLS using the path-weighting scheme for model estimation and a bootstrap procedure with 5,000 subsamples for inference.

The structural model was specified by the following two equations:

$$BIE_{it} = \beta_1 RG_{it} + \beta_2 ED_{it} + \beta_3 AA_{it} + \gamma\, Controls_{it} + \varepsilon_{it} \quad (1)$$

$$FS_{it} = \beta_4 RG_{it} + \beta_5 ED_{it} + \beta_6 AA_{it} + \beta_7 BIE_{it} + \delta\, Controls_{it} + \nu_{it} \quad (2)$$

where BIE denotes budget implementation efficiency, FS denotes fiscal sustainability, RG denotes revenue governance, ED denotes expenditure discipline and AA denotes audit accountability for county i in financial year t; Controls is the vector of control variables comprising log population, gross county product, an election-year indicator and a COVID-period indicator; γ and δ are the associated coefficient vectors; and ε and ν are the disturbance terms.

The specific indirect effect of each governance pillar was computed as the product of its path to budget implementation efficiency and the path from budget implementation efficiency to fiscal sustainability. Complementary or partial mediation is indicated where the direct and indirect effects are both supported and point in the same direction, whereas indirect-only mediation is indicated where the indirect effect is supported but the direct effect is not. Interpretation relied on the significance of the specific indirect effect rather than on the older causal-steps procedure (Nitzl et al., 2016; Zhao et al., 2010).

Assessment of the Measurement Model

Assessment of the measurement model began with content validity. Each indicator was linked explicitly to Kenyan fiscal rules, official reporting practice and the theoretical definition of its construct. This step is especially important where indicators are treated as defining components of a construct, because omission of a relevant component can change the construct's meaning (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003). No global single-item criterion exists for archival financial composites of this kind, so convergent validity through redundancy analysis was not feasible. This limitation is acknowledged rather than addressed by introducing a reflective item that has no counterpart in the official reporting record (Hair et al., 2019).

Indicator collinearity was evaluated using variance inflation factors, with values below 3 treated as a conservative objective and values above 5 as a trigger for investigating conceptual overlap,

unstable denominators or redundant computation (Hair et al., 2019). Because the constructs were estimated as Mode A composites in the software used, the analysis also reports indicator loadings, internal-consistency reliability, average variance extracted and the heterotrait-monotrait ratio of correlations. These statistics are reported for completeness and for comparability with published PLS-SEM studies, and are interpreted alongside, rather than in place of, the content-validity argument that underpins the composite specification (Hair et al., 2019).

Assessment of the Structural Model

Structural assessment began with inner-model variance inflation factors, in order to determine whether predictor collinearity threatened the stability of the path estimates (Hair et al., 2019). Path coefficients, t-statistics and p-values were then obtained from a bootstrap procedure with 5,000 subsamples. The analysis reports direct and specific indirect effects, and H8a to H8c were evaluated from the significance of their specific indirect effects, consistent with contemporary mediation guidance (Nitzl et al., 2016; Zhao et al., 2010). Because the panel contains repeated observations within counties, an ordinary case bootstrap can understate uncertainty; the resulting inferential caution is stated in Sections 3.10 and 5.4 (Cameron & Miller, 2015).

Explanatory performance was reported using R-squared and adjusted R-squared for budget implementation efficiency and fiscal sustainability, together with f-squared effect sizes. Predictive relevance was evaluated using the PLSpredict procedure and the associated Q-squared predict statistics, root mean square error and mean absolute error (Shmueli et al., 2019). The standardized root mean square residual and the normed fit index are presented as descriptive information, because global fit indices do not override measurement validity and predictive evidence in a composite, prediction-oriented PLS model (Hair et al., 2019). Statistical results are accompanied by practical interpretation in the original financial ratios wherever the scaling permits.

Panel Dependence and Endogeneity

Repeated observations from the same county violate the independence assumption of an ordinary case bootstrap, which can produce standard errors that are too small (Cameron & Miller, 2015; Wooldridge, 2010). County-level clustering was therefore taken into account when interpreting statistical inference, and common annual shocks were addressed by standardizing indicators within financial year and by including COVID-period and election-year indicators among the controls. Estimates with p-values close to the 0.05 threshold are interpreted with corresponding caution.

PLS-SEM does not by itself eliminate endogeneity or unobserved unit heterogeneity (Hair et al., 2019). The study mitigated these threats by grounding the direction of the modelled relationships in the institutional sequence of the public financial management cycle, by controlling for observable fiscal capacity, population, election timing and the COVID-19 period, and by relying on objective accounting measures that are not subject to common-method bias. Residual endogeneity nevertheless remains possible, and the findings are accordingly described as

associations consistent with the hypothesized mechanism rather than as established causal effects. Lagged specifications, county- and year-fixed-effects panel estimation and leave-one-county-out analysis are identified in Section 5.4 as priorities for extending the present results.

Sample Size and Statistical Power

The estimation panel contained 376 county-year observations drawn from 47 counties over eight financial years. The frequently used ten-times rule is not a sufficiently reliable basis for justifying sample size; adequacy was therefore assessed against model complexity using contemporary PLS sample-size guidance (Hair et al., 2019; Kock & Hadaya, 2018). The most complex equation in the model contains seven predictors, and a panel of 376 observations exceeds the minimum required to detect moderate effects at the 5% significance level with conventional power. Because the observations derive from only 47 independent counties, however, the effective number of independent units is smaller than the number of rows, and this distinction is maintained throughout the interpretation of the results.

Reliability of Extraction and Reproducibility

The study used a written codebook defining each numerator, denominator, sign, source hierarchy and treatment of restatements. Formula cells were generated programmatically from raw fields rather than manually typed as ratios. Source documents were archived by year and a stable link retained where permitted. Descriptive tables, model inputs and reported statistics were generated from the cleaned dataset, and any manual audit coding retained the source passage and page reference. These procedures reduce transcription error and make the study auditable.

Ethical Considerations

The study used publicly available institutional financial records and did not collect personal data. Data were nevertheless reported fairly, definitions were not adjusted to favour or disparage particular counties, and apparent anomalies were checked against source documents before interpretation. The required institutional research approval was obtained. The manuscript distinguishes documented audit findings from proven fraud and does not impute personal responsibility to individual officers.

Methodological Limitations

The design was constrained by changes in reporting formats, potential restatements, inconsistent disclosure of audit issues and pending bills, and by the fact that archival indicators capture documented financial performance rather than informal political processes. Audit-finding counts can reflect both underlying control weakness and the intensity or construction of the audit process (Power, 1997). Composite measures built from accounting ratios are also sensitive to indicator content and specification, because the measures define the construct (Diamantopoulos & Winklhofer, 2001; Jarvis et al., 2003). These limitations were managed through a source hierarchy,

a transparent codebook and consistent orientation of indicators, but they could not be removed completely.

RESULTS AND DISCUSSION

The study examined the direct effects of Revenue Governance, Expenditure Discipline and Audit Accountability on Budget Implementation Efficiency and Fiscal Sustainability, as well as the mediating role of Budget Implementation Efficiency. Given the predictive orientation of the study and the use of composite constructs, partial least squares structural equation modelling (PLS-SEM) was used for data analysis. The analysis involved data screening, descriptive statistics, measurement model assessment and structural model assessment. Descriptive statistics summarized the county-year observations using means, standard deviations and the number of observations. The measurement model was assessed using indicator loadings, internal-consistency reliability, average variance extracted, the heterotrait-monotrait ratio of correlations and indicator collinearity. The structural model was evaluated using path coefficients (β), R^2, f^2 and Q^2predict. Because the data comprised repeated observations for the 47 counties, county-level clustering was taken into account when interpreting statistical inference. Direct effects were tested for Revenue Governance, Expenditure Discipline and Audit Accountability on Budget Implementation Efficiency and Fiscal Sustainability, as well as for the effect of Budget Implementation Efficiency on Fiscal Sustainability. Mediating effects were assessed through the specific indirect effects of the three governance pillars on Fiscal Sustainability through Budget Implementation Efficiency. A 5% significance level was applied in interpreting the hypothesis tests.

4.1 Descriptive Statistics

Table 3: Descriptive Statistics

Indicator	Mean	N	Standard deviation
Audit opinion (AA1)	3.016	376	0.758
Prior-issue resolution (AA2)	0.497	376	0.141
Material-finding burden (AA3)	0.296	376	0.064
Reporting timeliness (AA4)	0.672	376	0.189
Summary computed – Audit Accountability	**1.120**	**376**	**0.288**
Overall absorption (BIE1)	0.809	376	0.055
Development absorption (BIE2)	0.516	376	0.132
Recurrent absorption (BIE3)	0.936	376	0.049
Expenditure credibility (BIE4)	0.831	376	0.085

Summary computed – Budget Implementation Efficiency	**0.773**	**376**	**0.080**
Wage discipline (ED1)	0.579	376	0.065
Recurrent coverage (ED2)	0.517	376	0.294
Development-share compliance (ED3)	0.191	376	0.049
Commitment discipline (ED4)	0.944	376	0.183
Summary computed – Expenditure Discipline	**0.558**	**376**	**0.148**
Operating balance (FS1)	0.267	376	0.059
Liquidity coverage (FS2)	0.450	376	0.255
Pending-bill burden (FS3)	0.726	376	0.851
Liability burden (FS4)	0.595	376	1.260
Summary computed – Fiscal Sustainability	**0.509**	**376**	**0.606**
OSR realization (RG1)	0.567	376	0.120
Total revenue credibility (RG2)	0.907	376	0.024
OSR growth stability (RG3)	0.537	376	0.282
OSR effort (RG4)	0.117	376	0.028
Summary computed – Revenue Governance	**0.532**	**376**	**0.113**

The descriptive results show considerable variation across the five study constructs. Audit Accountability recorded a computed mean of 1.120, which reflects the four-point scale on which the audit-opinion indicator is measured, while Budget Implementation Efficiency recorded a mean of 0.773. Expenditure Discipline had a computed mean of 0.558, Fiscal Sustainability recorded 0.509 and Revenue Governance recorded 0.532. Among the individual indicators, commitment discipline recorded the highest mean (0.944), followed by recurrent absorption (0.936) and total revenue credibility (0.907). Own-source revenue effort recorded the lowest mean (0.117), followed by development-share compliance (0.191), indicating that counties collected only a small fraction of their estimated own-source revenue potential and directed a considerably smaller share of expenditure to development than the 30% statutory benchmark. The fiscal sustainability indicators showed the widest dispersion, particularly liability burden (SD = 1.260) and pending-bill burden (SD = 0.851), signalling substantial differences in fiscal stress across counties. Overall, the descriptive results indicate material differences in financial governance and fiscal sustainability across the 376 county-year observations.

Measurement Model Assessment

Indicator Reliability and Convergent Validity

Table 4 presents the measurement model results. All indicator loadings exceeded 0.70, ranging from 0.716 to 0.958. Cronbach's alpha values ranged from 0.796 to 0.843, while composite reliability ranged from 0.705 to 0.895. The average variance extracted values ranged from 0.534 to 0.744, exceeding the 0.50 threshold. These results indicate satisfactory indicator reliability, internal consistency and convergent validity. As explained in Section 3.8, the constructs were conceptualized as composites of non-interchangeable accounting components and estimated in Mode A; the reliability and convergent-validity statistics are therefore reported for completeness and comparability, and are interpreted alongside the content-validity argument set out in Section 3.4 rather than as the sole basis for retaining indicators.

Table 4: Indicator Reliability and Convergent Validity

	Factor Loadings	Cronbach's alpha	Composite reliability	AVE
AA1	0.716	0.812	0.828	0.624
AA2	0.833			
AA3	0.819			
AA4	0.778			
BIE1	0.858	0.809	0.825	0.744
BIE2	0.954			
BIE3	0.839			
BIE4	0.859			
ED1	0.796	0.796	0.705	0.534
ED2	0.776			
ED3	0.756			
ED4	0.878			
FS1	0.837	0.843	0.895	0.674
FS2	0.803			

FS3	0.958			
FS4	0.958			
RG1	0.882	0.819	0.829	0.644
RG2	0.737			
RG3	0.787			
RG4	0.807			

Discriminant Validity

Discriminant validity was assessed using the heterotrait-monotrait ratio of correlations (HTMT). All HTMT values were well below the conservative threshold of 0.85. The highest values were recorded between Population and Gross County Product (HTMT = 0.551), Audit Accountability and Budget Implementation Efficiency (0.548), and Expenditure Discipline and Revenue Governance (0.545). The results indicate that the constructs are related but empirically distinct dimensions of county financial management, and that discriminant validity was established.

Table 5: Heterotrait-Monotrait Ratio of Correlations (HTMT)

	AA	**BIE**	**COVID**	**ED**	**EY**	**FS**	**GCP**	**POP**
AA								
BIE	0.548							
COVID	0.137	0.395						
ED	0.511	0.019	0.418					
EY	0.241	0.14	0.333	0.231				
FS	0.432	0.432	0.083	0.487	0.091			
GCP	0.355	0.117	0.002	0.356	0.025	0.366		
POP	0.409	0.061	0	0.421	0	0.393	0.551	
RG	0.416	0.306	0.307	0.545	0.082	0.451	0.385	0.355

Structural Model Assessment

Inner Model Collinearity

The inner variance inflation factor values ranged from 1.012 to 1.336, which are well below the threshold of 3.00. This indicates that multicollinearity was not a concern among the predictors of

Budget Implementation Efficiency and Fiscal Sustainability. The structural paths can therefore be interpreted without evidence of substantial inflation of standard errors caused by collinearity.

Table 6: Inner Variance Inflation Factor Results

Structural path	VIF
Audit Accountability → Budget Implementation Efficiency	1.012
Audit Accountability → Fiscal Sustainability	1.026
Budget Implementation Efficiency → Fiscal Sustainability	1.336
Expenditure Discipline → Budget Implementation Efficiency	1.196
Expenditure Discipline → Fiscal Sustainability	1.265
Election Year → Budget Implementation Efficiency	1.137
Election Year → Fiscal Sustainability	1.137
Revenue Governance → Budget Implementation Efficiency	1.132
Revenue Governance → Fiscal Sustainability	1.150

Coefficient of Determination

The results indicate that the predictors explained 25.1% of the variance in Budget Implementation Efficiency ($R^2 = 0.251$; adjusted $R^2 = 0.237$). For Fiscal Sustainability, the model explained 75.5% of the variance ($R^2 = 0.755$; adjusted $R^2 = 0.750$). The model therefore provides substantially greater explanatory power for Fiscal Sustainability than for Budget Implementation Efficiency, which suggests that budget execution is shaped by operational and administrative factors that lie outside the three governance pillars modelled here.

Table 7: Coefficient of Determination

Endogenous construct	R^2	Adjusted R^2
Budget Implementation Efficiency	0.251	0.237
Fiscal Sustainability	0.755	0.750

Effect Size

The f^2 results indicate different substantive contributions across the structural relationships. For Budget Implementation Efficiency, the effect sizes were 0.116 for Revenue Governance, 0.114 for Audit Accountability and 0.058 for Expenditure Discipline. For Fiscal Sustainability, Expenditure Discipline recorded the largest effect ($f^2 = 2.235$), followed by Budget Implementation Efficiency (0.236), Revenue Governance (0.156) and Audit Accountability (0.112). Expenditure Discipline therefore makes the strongest substantive contribution to Fiscal Sustainability within the model. The magnitude of that effect should nevertheless be interpreted with care, since it reflects the dominance of expenditure composition within the fiscal-sustainability equation rather than a precisely estimated causal magnitude.

Table 8: Effect Sizes (f^2)

Predictor	Budget Implementation Efficiency	Fiscal Sustainability
Audit Accountability	0.114	0.112
Budget Implementation Efficiency		0.236
COVID period	0.162	0.001
Expenditure Discipline	0.058	2.235
Election Year	0.001	0.011
GCP	0.107	0.102
Population	0.103	0.105
Revenue Governance	0.116	0.156

Model Fit

The standardized root mean square residual was 0.135 for the saturated model and 0.148 for the estimated model, while the normed fit index was 0.338. These values indicate weak conventional model fit. They are reported transparently rather than omitted, but, given the predictive orientation of the analysis and the composite specification of the constructs, they are treated as supplementary evidence. Greater weight is placed on the measurement results, the collinearity assessment, the explanatory power, the effect sizes and the predictive and hypothesis-testing results reported below.

Table 9: Model Fit Results

Fit measure	Saturated model	Estimated model
SRMR	0.135	0.148
d_ULS	5.438	6.598
d_G	4.841	
Chi-square	5076.896	
NFI	0.338	

Predictive Relevance

Predictive relevance was assessed using the PLSpredict procedure. Both endogenous constructs recorded positive Q^2predict values, indicating that the model has out-of-sample predictive relevance. Budget Implementation Efficiency recorded a Q^2predict value of 0.123, with a root mean square error of 0.931 and a mean absolute error of 0.739, while Fiscal Sustainability recorded a Q^2predict value of 0.618, with a root mean square error of 0.719 and a mean absolute error of 0.340. The model therefore demonstrates predictive relevance for both endogenous constructs, with substantially stronger predictive performance for Fiscal Sustainability.

Table 10: Predictive Relevance Results

Endogenous Construct	Q^2_predict	RMSE	MAE
Budget Implementation Efficiency	0.123	0.931	0.739
Fiscal Sustainability	0.618	0.719	0.340

Hypothesis Testing

The hypotheses were tested using the standardized structural path coefficients (β), t-values and p-values obtained from the PLS-SEM structural model with 5,000 bootstrap subsamples. A 5% significance level was applied; a hypothesis was therefore supported where $p < 0.05$ and the estimated coefficient was consistent with the hypothesized positive direction. Figure 2 presents the final structural model, showing the relationships among Revenue Governance, Expenditure Discipline, Audit Accountability, Budget Implementation Efficiency and Fiscal Sustainability, together with the control variables and the coefficient of determination for each endogenous construct.

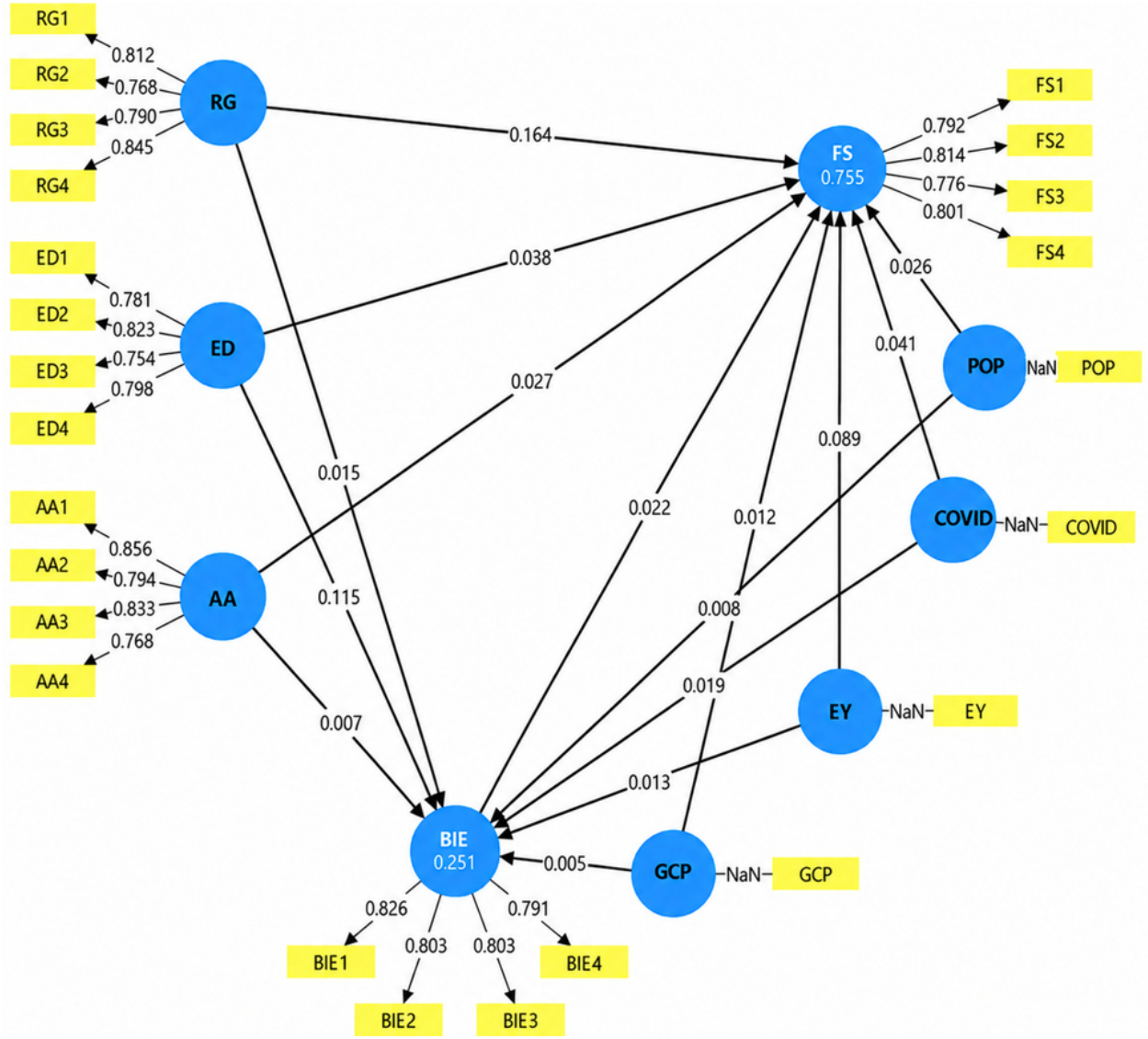

Figure 2: Path Diagram

Direct Effects

The direct effects of revenue governance, expenditure discipline and audit accountability on budget implementation efficiency and fiscal sustainability were assessed using the path coefficients (β), t-statistics and p-values reported in Table 11.

Table 11: Direct Effects

Hypothesis	Structural Path	Path Coefficient (β)	t-value	p-value
H1	Revenue Governance → Budget Implementation Efficiency	0.118	2.432	0.015
H2	Expenditure Discipline → Budget Implementation Efficiency	0.228	1.579	0.115
H3	Audit Accountability → Budget Implementation Efficiency	0.102	2.457	0.014
H4	Revenue Governance → Fiscal Sustainability	0.126	1.391	0.164
H5	Expenditure Discipline → Fiscal Sustainability	0.832	2.075	0.038
H6	Audit Accountability → Fiscal Sustainability	0.055	2.216	0.027
H7	Budget Implementation Efficiency → Fiscal Sustainability	0.278	2.290	0.022

The results indicate that revenue governance had a positive and statistically significant effect on budget implementation efficiency ($\beta = 0.118$, $t = 2.432$, $p = 0.015$). The positive coefficient indicates that stronger revenue governance was associated with higher budget implementation efficiency. Since the p-value was below 0.05, the relationship was statistically significant. Therefore, H1 was supported.

Expenditure discipline had a positive but statistically insignificant effect on budget implementation efficiency ($\beta = 0.228$, $t = 1.579$, $p = 0.115$). Although the positive coefficient suggests that greater expenditure discipline was associated with higher budget implementation efficiency, the p-value exceeded the 0.05 threshold. Thus, the observed relationship was not statistically significant, and H2 was not supported.

Audit accountability had a positive and statistically significant effect on budget implementation efficiency ($\beta = 0.102$, $t = 2.457$, $p = 0.014$). This finding indicates that stronger audit accountability was associated with better budget implementation efficiency. Since the p-value was below 0.05, the relationship was statistically significant and H3 was supported.

Regarding fiscal sustainability, revenue governance had a positive but statistically insignificant direct effect (β = 0.126, t = 1.391, p = 0.164). Although the coefficient was positive, the p-value was greater than 0.05. Hence, revenue governance did not demonstrate a statistically significant direct relationship with fiscal sustainability, and H4 was not supported.
Expenditure discipline demonstrated a positive and statistically significant direct effect on fiscal sustainability (β = 0.832, t = 2.075, p = 0.038). The positive coefficient indicates that stronger expenditure discipline was associated with greater fiscal sustainability. Since p = 0.038 was below 0.05, the relationship was statistically significant. Therefore, H5 was supported.

Similarly, audit accountability had a positive and statistically significant direct effect on fiscal sustainability (β = 0.055, t = 2.216, p = 0.027). The result indicates that stronger audit accountability was associated with higher fiscal sustainability. The p-value was below the 0.05 threshold, resulting in the support of H6.

Finally, budget implementation efficiency had a positive and statistically significant effect on fiscal sustainability (β = 0.278, t = 2.290, p = 0.022). This finding indicates that more efficient implementation of approved budgets was associated with stronger fiscal sustainability. Since p = 0.022 was less than 0.05, H7 was supported.

Five of the seven direct-effect hypotheses were supported, namely H1, H3, H5, H6 and H7, while H2 and H4 were not supported. The results demonstrate that revenue governance and audit accountability significantly influenced budget implementation efficiency, whereas expenditure discipline did not. In relation to fiscal sustainability, expenditure discipline, audit accountability and budget implementation efficiency exhibited significant positive effects, while revenue governance did not demonstrate a significant direct effect.

Indirect Effects and Mediation Analysis

The study further examined whether budget implementation efficiency mediates the relationships between revenue governance, expenditure discipline, audit accountability and fiscal sustainability. Mediation was assessed using the specific indirect effects obtained from the bootstrapping procedure. An indirect effect was considered statistically significant where the p-value was less than 0.05. The nature of mediation was subsequently established by considering the significance of the corresponding direct effects.

Table 12: Specific Indirect Effects and Mediation Results

Hypothesis	Specific Indirect Path	Indirect Effect (β)	t-value	p-value	Mediation Decision
H8a	Revenue Governance → Budget Implementation Efficiency → Fiscal Sustainability	0.033	5.630	0.000	Indirect-only (full) mediation
H8b	Expenditure Discipline → Budget Implementation Efficiency → Fiscal Sustainability	0.063	2.595	0.009	Complementary partial mediation
H8c	Audit Accountability → Budget Implementation Efficiency → Fiscal Sustainability	0.028	2.358	0.018	Complementary partial mediation

The results show that budget implementation efficiency significantly mediated the relationship between revenue governance and fiscal sustainability ($\beta = 0.033$, $t = 5.630$, $p < 0.001$). The significant indirect effect indicates that revenue governance influences fiscal sustainability through its effect on budget implementation efficiency. Since the direct effect of revenue governance on fiscal sustainability was not statistically significant ($\beta = 0.126$, $t = 1.391$, $p = 0.164$) while the indirect effect was significant, indirect-only, or full, mediation was established. H8a was therefore supported. This finding suggests that the influence of revenue governance on fiscal sustainability operates primarily through effective implementation of the budget rather than through a direct pathway.

The findings further indicate that budget implementation efficiency significantly mediated the relationship between expenditure discipline and fiscal sustainability ($\beta = 0.063$, $t = 2.595$, $p = 0.009$). The direct effect of expenditure discipline on fiscal sustainability was also statistically significant ($\beta = 0.832$, $t = 2.075$, $p = 0.038$). Since both the direct and the indirect effects were significant and pointed in the same direction, complementary partial mediation was established and H8b was supported. Because the path from expenditure discipline to budget implementation efficiency was not itself statistically significant, however, this indirect pathway should be interpreted with caution and regarded as secondary to the substantially larger direct effect.

Similarly, the results demonstrate that budget implementation efficiency significantly mediated the relationship between audit accountability and fiscal sustainability ($\beta = 0.028$, $t = 2.358$, $p = 0.018$). The significant indirect effect indicates that audit accountability contributes to fiscal sustainability through its influence on budget implementation efficiency. The direct effect of audit accountability on fiscal sustainability was also statistically significant ($\beta = 0.055$, $t = 2.216$, $p = 0.027$). The presence of both significant direct and indirect effects therefore indicates complementary partial mediation, and H8c was supported.

Overall, the mediation results establish that budget implementation efficiency is an important transmission mechanism linking public financial governance practices to fiscal sustainability. The mediation was full for revenue governance but partial for expenditure discipline and audit accountability. The findings therefore suggest that revenue governance contributes to fiscal sustainability mainly through effective budget implementation, whereas expenditure discipline and audit accountability retain their own direct contributions to fiscal sustainability in addition to their indirect effects through budget implementation efficiency.

Discussion

The direct-effect findings are consistent with the study's theoretical foundations and with the literature underpinning the hypotheses. The public financial management cycle explains that credible revenue planning, disciplined allocations, implementation controls, accounting and audit are interdependent stages, such that weaknesses in one stage affect subsequent stages (Andrews et al., 2014; PEFA Secretariat, 2016). This supports the observed importance of Revenue Governance and Audit Accountability for budget implementation. Fiscal federalism theory similarly emphasizes adequate revenue authority, institutional quality and credible fiscal constraints in determining subnational fiscal outcomes (Oates, 1972, 1999; Rodden, 2002; Weingast, 2009). The relevance of Expenditure Discipline to fiscal sustainability is consistent with Alesina et al. (1999) and Poterba (1994), who associate binding budget institutions and fiscal rules with fiscal discipline, while agency theory supports the accountability pathway by explaining the need for monitoring where public officials manage resources on behalf of citizens and legislatures (Jensen & Meckling, 1976; Power, 1997). These results extend Kenyan county-finance research beyond the perception-based and single-county designs of Sande et al. (2023) and Murigi and Musau (2023) by showing, on objectively measured county-year data, which governance pillar operates through execution and which operates directly on the financial position.

Two hypothesized direct relationships were not supported, and both are interpretable within the same framework. Expenditure discipline did not significantly predict budget implementation efficiency, which suggests that restraint in wage, recurrent and commitment ratios operates mainly on the financial position itself rather than on the administrative capacity to execute an approved budget. Absorption in Kenyan counties appears to be constrained more by delayed exchequer releases, procurement bottlenecks and project-readiness problems than by the composition of

expenditure (OCOB, 2025; PEFA Secretariat, 2016). Revenue governance likewise had no significant direct effect on fiscal sustainability, which is consistent with the mediation results reported above: realistic revenue forecasting and stronger own-source collection improve the sustainability of county finances by making the approved budget executable rather than by adding directly to the operating balance or the liquidity position.

The mediation findings align closely with the public financial management cycle, which provides the study's explicit theoretical basis for treating Budget Implementation Efficiency as a transmission mechanism. Andrews et al. (2014) and the PEFA Secretariat (2016) explain that financial governance arrangements determine whether authorized resources are translated into predictable and properly controlled expenditure. The theory therefore implies that governance can influence fiscal sustainability through the quality of budget execution rather than only through direct pathways. This reasoning is particularly relevant because budget implementation involves cash releases, procurement and commitment control, and weaknesses in revenue forecasting or commitment control propagate into execution deviations, arrears and adverse financial positions (IMF, 2022; PEFA Secretariat, 2016). The findings of this study therefore provide empirical support for this logic: implementation is the link through which revenue governance, expenditure discipline and audit accountability influence the sustainability of county finances.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study concludes that financial governance is important for fiscal sustainability among Kenyan county governments, although its effects operate differently across the financial management process. Revenue Governance and Audit Accountability significantly contribute to Budget Implementation Efficiency, while Expenditure Discipline does not have a significant direct effect on implementation. Expenditure Discipline and Audit Accountability significantly influence Fiscal Sustainability, whereas Revenue Governance does not have a significant direct effect. Budget Implementation Efficiency significantly contributes to Fiscal Sustainability, confirming its importance in translating financial governance into fiscal outcomes. The mediation results further demonstrate that Budget Implementation Efficiency is an important transmission mechanism. It fully mediates the relationship between Revenue Governance and Fiscal Sustainability and partially mediates the relationships involving Expenditure Discipline and Audit Accountability. The findings therefore support the Public Financial Management Cycle as the study’s integrative explanation.

Recommendations

County governments should strengthen financial governance by linking revenue planning, expenditure control, audit accountability and budget implementation. Revenue forecasts should be realistic and closely aligned with expenditure plans to strengthen budget credibility. County

treasuries should reinforce expenditure controls, particularly regarding recurrent commitments, pending bills and available financing. Audit findings should be followed by timely corrective action, with stronger mechanisms for resolving prior-year issues and material findings. Budget implementation should receive greater attention through improved cash-flow planning, procurement, commitment control and continuous monitoring of expenditure against approved budgets. Since Budget Implementation Efficiency significantly contributes to Fiscal Sustainability and mediates important governance relationships, county governments should treat effective execution as a central fiscal-management priority. These measures would help counties reduce implementation deviations, manage liabilities and maintain sustainable fiscal positions while supporting continuity of public services.

Contribution to Practice and Policy

The study contributes to practice by providing county governments with an integrated framework for managing financial governance and fiscal sustainability. The findings demonstrate that Revenue Governance and Audit Accountability are important for Budget Implementation Efficiency, while Expenditure Discipline, Audit Accountability and Budget Implementation Efficiency are important for Fiscal Sustainability. County treasuries can therefore use the findings to strengthen revenue planning, expenditure controls, audit follow-up and budget execution. The study particularly highlights Budget Implementation Efficiency as an important mechanism through which financial governance translates into fiscal sustainability. This provides county financial managers with a practical basis for monitoring whether approved resources are being converted into planned expenditure and whether weaknesses in execution are contributing to pending bills, liquidity pressures and other fiscal sustainability challenges.

The study contributes to policy by providing evidence for strengthening county-level public financial management policies and oversight mechanisms. The findings suggest that fiscal sustainability policies should not focus exclusively on revenue mobilization or expenditure control but should also address the effectiveness of budget implementation. The significant role of Audit Accountability supports stronger requirements for audit follow-up and corrective action, while the importance of Expenditure Discipline supports continued emphasis on fiscal responsibility and commitment controls. The findings also provide useful evidence for institutions involved in county financial oversight, including the Controller of Budget, Auditor-General, Commission on Revenue Allocation and National Treasury. The study therefore supports policies that integrate revenue credibility, expenditure discipline, audit accountability and budget execution within a unified fiscal-management framework.

Limitations and Areas for Further Research

The study relied primarily on secondary financial, budget and audit records for county governments. The analysis was therefore dependent on the completeness, consistency and comparability of the information reported across counties and financial years, and differences in

reporting practice and in the availability of historical records may have affected the measurement of some indicators. Inference was based on a bootstrap over county-year rows; because observations are repeated within counties, confidence in marginal results should be treated as indicative and estimates close to the 0.05 threshold interpreted cautiously (Cameron & Miller, 2015). The model was also estimated contemporaneously, so the reported relationships are associations consistent with the hypothesized mechanism rather than established causal effects. In addition, the study focused on the 47 county governments in Kenya, and the findings may not apply directly to national government institutions or to subnational governments in other countries. Finally, the study used Budget Implementation Efficiency as the mediating mechanism; other factors that may influence fiscal sustainability, including institutional capacity, political dynamics and broader economic conditions, were not the primary focus of the model. These limitations should be borne in mind when interpreting and generalizing the findings.

Further research could extend the study by examining additional mechanisms through which financial governance affects fiscal sustainability, including institutional capacity, political factors and fiscal dependence. Priority methodological extensions include estimating the model with one-year-lagged governance predictors, applying county-cluster bootstrap inference, adding county- and year-fixed-effects panel estimation, and reporting formative outer weights alongside the composite results, all of which would strengthen the identification and robustness of the relationships reported here. Comparative studies involving county or other subnational governments in different countries could establish whether the relationships observed in Kenya hold in other decentralized systems, and longer series, as additional county financial data become available, would allow changes in financial governance and fiscal sustainability to be traced over time. Such studies would complement the present findings and provide further evidence on sustainable subnational public financial management.

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