

Integrated Financial Management Information Systems (IFMIS) and Public Sector Financial Performance in Sierra Leone: An Assessment of Successes and Persistent Challenges

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Abstract: Sierra Leone adopted an Integrated Financial Management Information System (IFMIS) in the mid-2000s as the digital centrepiece of its post-conflict public financial management (PFM) reform programme. Two decades on, the system processes the bulk of central government expenditure, yet audit reports, Public Expenditure and Financial Accountability (PEFA) assessments and International Monetary Fund (IMF) surveillance continue to record weaknesses in budget credibility, expenditure control and fiscal transparency. This article critically evaluates how IFMIS has influenced public sector financial performance in Sierra Leone, focusing on budget execution, digital government accounting and financial reporting efficiency. The study addresses a gap in the literature, which has documented IFMIS adoption across Sub-Saharan Africa but has paid limited analytical attention to small, aid-dependent, post-conflict states. Using a qualitative single-country case study design grounded in documentary analysis, the article triangulates evidence from PEFA assessments (2007 to 2021), Audit Service Sierra Leone annual reports, Ministry of Finance and Accountant General's Department publications, IMF Article IV consultations, World Bank project documentation and peer-reviewed scholarship, interpreted through an integrated framework drawing on the Technology Acceptance Model, Diffusion of Innovation Theory, Institutional Theory, Agency Theory and Public Value Theory. The findings show genuine gains: automated commitment control, a functioning Treasury Single Account, faster production of annual financial statements, stronger audit trails and improved payroll integrity. Yet these gains are bounded by persistent constraints, including unreliable power and connectivity, high staff turnover, weak system integration, extra-budgetary practices that bypass controls, underfunded maintenance and fragile cybersecurity and business continuity arrangements. The article concludes that technology has outpaced the institutions meant to govern it, and that the next reform phase must privilege enforcement, integration and human capacity over new software. Twenty-five policy recommendations are advanced for government, development partners and oversight institutions.

Keywords: IFMIS; Public Financial Management; Sierra Leone; Budget Execution; Government Accounting; Financial Reporting; Digital Governance; Fiscal Transparency.

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I. INTRODUCTION

Public financial management sits at the centre of the state's capacity to convert public resources into public value. How a government plans, allocates, spends, accounts for and reports on public money determines whether teachers are paid on time, whether clinics receive drugs, whether roads are maintained and whether citizens can hold their leaders to account (Andrews et al., 2014; Cangiano et al., 2013). Over the past three decades, PFM reform has become one of the most heavily financed strands of governance assistance in the

developing world (Allen et al., 2013; Lawson, 2015; Schiavo-Campo, 2017), and within that agenda the computerisation of government financial operations through Integrated Financial Management Information Systems has occupied a privileged position (Dener et al., 2011; Hashim & Piatti-Fünfkirchen, 2018). An IFMIS is, at its core, a networked suite of software applications built around a common chart of accounts and a general ledger, through which budget appropriations are loaded, commitments controlled, payments processed, revenues recorded and financial statements generated (Diamond & Khemani, 2006; Uña et al., 2019).

The appeal of IFMIS to reformers and financiers is easy to state. Manual, paper-based treasury systems in low-income countries were slow, opaque and vulnerable to error and fraud. Cheques were written against budgets nobody could see in real time; arrears accumulated invisibly; bank accounts proliferated beyond the treasury's sight; and annual accounts appeared years late, if at all (Peterson, 2006; Hove & Wynne, 2010). Computerisation promised a single version of the fiscal truth: every transaction captured once, checked automatically against an approved budget, settled electronically and posted instantly to a ledger from which reports could be drawn at will. The World Bank alone financed well over one hundred IFMIS projects between the mid-1980s and the 2010s, committing several billion dollars, and the IMF, the African Development Bank, the European Union and bilateral donors added substantially to that total (Dener et al., 2011; Hashim & Piatti-Fünfkirchen, 2018).

The record, however, has been mixed. Cross-country reviews find that IFMIS projects frequently run over time and over budget, that functionality is often only partially used, and that the link between installing a system and improving fiscal outcomes is neither automatic nor linear (Dener & Young, 2013; Hashim et al., 2020). Peterson (2006) famously warned against “automating before reforming”, and a generation of scholarship has since confirmed that IFMIS success depends less on software than on political commitment, institutional incentives, legal enforcement and human capacity (Chêne, 2009; Heeks, 2002; Hendriks, 2013). Africa offers the full spectrum of this experience, from Rwanda's disciplined, government-owned rollout to repeated restarts and cost escalations elsewhere (Karangwa et al., 2020; Hove & Wynne, 2010).

Sierra Leone provides an instructive and under-studied case within this spectrum. The country emerged in 2002 from an eleven-year civil war that destroyed administrative infrastructure, hollowed out the civil service and left public finances in disarray. Reconstruction brought an ambitious PFM reform programme, financed principally by the World Bank, the United Kingdom, the European Union and the African Development Bank, in which a new legal framework, a rebuilt Accountant General's Department and a computerised treasury were the central pillars (World Bank, 2009; Tavakoli et al., 2013). The Government Budgeting and Accountability Act 2005, later replaced by the Public Financial Management Act 2016, provided the statutory spine; the FreeBalance-based IFMIS, piloted in 2005 and progressively extended across ministries, departments and agencies (MDAs), provided the operational one (Government of Sierra Leone, 2016; World Bank, 2017). Subsequent reforms added a Treasury Single Account, electronic funds transfer through the Bank of Sierra Leone, payroll cleansing linked to biometric verification, and successive PFM reform strategies aligned with the Medium-Term National Development Plan 2019 to 2023 and the National Development Plan 2024 to 2030 (Ministry of Finance, 2018, 2023; IMF, 2024).

The results deserve careful reading rather than celebration or dismissal. On one side, successive PEFA

assessments record improvements in payment processing, bank reconciliation and the timeliness of annual financial statements, and the Auditor-General now receives public accounts within statutory deadlines that would have been unthinkable in the early 2000s (PEFA Secretariat, 2018; Audit Service Sierra Leone, 2023). On the other side, the same sources document persistent budget overruns, extra-budgetary expenditure, weak commitment discipline in practice, unreconciled balances, cash rationing that undermines the budget's meaning, and audit qualifications that recur year after year (Audit Service Sierra Leone, 2022, 2023; IMF, 2024). The system works, in other words, but the institutions around it do not always let it work as designed. That tension between technical achievement and institutional constraint is the analytical heart of this article.

The research gap is threefold. First, the IFMIS literature on Africa is dominated by Kenya, Ghana, Uganda, Tanzania and South Africa, with Sierra Leone appearing mostly in grey literature, project completion reports and consultancy assessments rather than peer-reviewed analysis (Hendriks, 2013; Njonde & Kimanzi, 2014; Odooyo et al., 2014). Second, existing studies of Sierra Leone's PFM reforms tend to be descriptive or evaluative of donor projects rather than theoretically grounded assessments of how digitalisation has changed financial performance (Tavakoli et al., 2013; World Bank, 2017). Third, little scholarship connects the country's IFMIS experience to the wider debates on technology adoption, institutional isomorphism and public value creation in fragile and post-conflict states, where the preconditions assumed by mainstream models are often absent (Heeks, 2002; Andrews, 2013). This article addresses all three gaps.

The study pursues nine objectives. It examines the history and phasing of IFMIS implementation in Sierra Leone; assesses the system's contribution to overall public financial performance; evaluates improvements in accountability and transparency; examines effects on government accounting practice; assesses budget execution performance; evaluates financial reporting efficiency; identifies persistent institutional, technical, legal, financial and human capacity challenges; compares Sierra Leone's experience with selected African countries; and develops practical policy recommendations for the next decade of digital PFM reform.

Correspondingly, the article addresses the following research questions. What motivated Sierra Leone to implement IFMIS? How has IFMIS improved public financial management? What has been its effect on budget execution and monitoring, government accounting, treasury and cash management, financial reporting, expenditure control, revenue management and fiscal transparency? What implementation challenges remain? How effective are the existing institutional arrangements? How well is IFMIS integrated with other government systems? What lessons can Sierra Leone draw from more successful African reforms? And what reforms are needed to maximise the system's benefits?

The significance of the study is both scholarly and practical. Scholarly, because a theoretically informed single-country case of a small, aid-dependent, post-conflict state tests the boundary conditions of technology adoption and PFM reform theory in ways that large-country studies cannot. Practical, because Sierra Leone now stands at a decision point: the government's National Digital Development Strategy and its 2024 to 2030 development plan promise a new wave of digital public finance, including cloud services, data analytics and integration with revenue and procurement platforms (Government of Sierra Leone, 2024; Ministry of Finance, 2023). Whether that wave lifts financial performance or merely adds hardware to unresolved institutional problems depends on lessons drawn honestly from the first two decades. This article aims to supply that honest account.

The remainder of the article proceeds as follows. Section 2 traces the global evolution of IFMIS. Section 3 situates the system within Sierra Leone's wider PFM reform history. Section 4 presents a detailed case study of implementation. Section 5 develops the theoretical framework and Section 6 reviews the literature. Section 7 sets out the methodology. Sections 8 to 10 analyse budget execution, government accounting and financial reporting in turn. Sections 11 and 12 weigh successes against persistent challenges. Section 13 draws comparative lessons from Ghana, Rwanda, Kenya, Uganda, Tanzania and Nigeria. Section 14 advances policy recommendations, Section 15 looks to the technological future, and Section 16 concludes.

II. THE EVOLUTION OF IFMIS

➤ *Origins and Generations*

Government financial computerisation began in the 1970s and 1980s with stand-alone accounting and payroll applications in OECD treasuries, building on a much older tradition of budgetary and treasury organisation (Premchand, 1993; Wynne, 2005), but the term IFMIS gained currency in the late 1980s and 1990s as the World Bank began financing integrated treasury systems in Latin America, notably Brazil's SIAFI (1987) and later Argentina's SIDIF and Guatemala's SIAF (Dener et al., 2011). These first-generation systems were custom-built, mainframe-based and centred on budget execution and the general ledger. A second generation, from the late 1990s, adopted commercial off-the-shelf (COTS) enterprise resource planning platforms such as Oracle Financials, SAP and FreeBalance, configured for government charts of accounts and appropriation control (Diamond & Khemani, 2006; Hendriks, 2013). A third generation, visible from roughly 2010, is web-based, service-oriented and increasingly interoperable, exchanging data with tax, customs, procurement, payroll and debt systems through defined interfaces, and in some countries hosted in government or commercial clouds (Uña et al., 2019; Dener et al., 2021).

The functional anatomy has remained stable even as the technology has changed. A core IFMIS typically comprises budget preparation and appropriation management; commitment and purchase-order control; accounts payable

and payment processing; accounts receivable and revenue recording; a general ledger organised around a unified, multi-segment chart of accounts; cash and treasury management, ideally linked to a Treasury Single Account; payroll or an interface to a human resource management information system; asset and inventory modules; and a reporting layer producing statutory statements and management information (Dener et al., 2011; Hashim & Piatti-Fünfkirchen, 2018). The integration of these modules around one ledger and one chart of accounts is precisely what distinguishes an IFMIS from a collection of departmental applications, because it enforces the accounting equation across the whole of government and creates a single audit trail.

The relationship between IFMIS and enterprise resource planning deserves brief clarification, since the terms are often conflated. An IFMIS is functionally a government-specific ERP: it shares the ERP logic of a single database serving integrated business processes, but it substitutes appropriation control for the profit motive, fund accounting for cost accounting, and legislative reporting for shareholder reporting (Hendriks, 2013; Diamond & Khemani, 2006). The choice between adapting a commercial ERP, buying a government-purposed COTS product and building a custom system has generated its own literature, with the balance of evidence favouring COTS for low-capacity settings on grounds of proven functionality and vendor support, while noting the trade-off in dependence and licence cost that Sierra Leone's experience, examined in Section 12, illustrates (Dener et al., 2011; Peterson, 2006). Custom development, Rwanda's eventual path, demands sustained domestic engineering capacity but yields ownership and adaptability; the comparative analysis in Section 13 returns to this choice.

➤ *Drivers of Global Adoption*

Three forces propelled global diffusion. The first was the New Public Management movement, which imported private sector information disciplines into government and treated real-time financial information as a precondition for performance management (Hood, 1991; Pollitt & Bouckaert, 2017), reinforced by the broader e-government movement's promise of transformed state capability through information technology (Fountain, 2001; Bhatnagar, 2004; Ndou, 2004; World Bank, 2016). The second was the international financial institutions. The World Bank made treasury computerisation a standard component of structural adjustment and later of governance lending, financing 122 IFMIS projects in 87 countries by 2010 at a cost exceeding USD 2.2 billion (Dener et al., 2011), while the IMF's Fiscal Affairs Department promoted treasury single accounts, commitment control and fiscal reporting standards for which an IFMIS is the natural vehicle (Pattanayak & Fainboim, 2011; Uña et al., 2019). The third was the fiscal transparency agenda, embodied in the IMF Fiscal Transparency Code, the Open Budget Survey and the PEFA framework, all of which reward the timely, comprehensive and reliable fiscal data that only computerised systems can produce at scale (de Renzio & Wehner, 2017; PEFA Secretariat, 2020).

Africa's adoption wave came mainly in the 2000s, often as part of post-adjustment or post-conflict reconstruction.

Tanzania and Uganda were early movers in the late 1990s; Ghana, Kenya, Rwanda, Malawi, Zambia and Sierra Leone followed in the 2000s; and by the mid-2010s nearly every Sub-Saharan state operated some form of IFMIS, with FreeBalance, Oracle and Epicor the dominant platforms in anglophone countries (Hove & Wynne, 2010; Hendriks, 2013; Dener & Young, 2013).

➤ *The Emerging Frontier*

The current frontier extends the IFMIS concept in four directions. First, cloud and hybrid hosting reduces the capital cost of data centres and improves disaster recovery, though it raises data sovereignty and connectivity questions acute in low-income settings (Dener et al., 2021; Uña et al., 2023). Second, the analytical layer is thickening: business intelligence dashboards, big-data techniques applied to transaction records, and predictive analytics for cash forecasting and fraud detection are moving from pilot to practice in middle-income treasuries (Gupta et al., 2017; Uña et al., 2023). Third, artificial intelligence and machine learning are being tested for anomaly detection in payments, automated invoice matching and expenditure classification, with early applications in Brazil, Estonia and India (Engin & Treleven, 2019; OECD, 2022). Fourth, interoperability with digital identity, e-procurement, tax administration and mobile-money payment rails is turning the IFMIS from a back-office ledger into the financial core of a broader digital government stack (World Bank, 2021a; Dener et al., 2021; Mergel et al., 2019; OECD, 2020). Each of these developments features in Sierra Leone's stated ambitions, which makes a sober assessment of the existing foundation all the more necessary.

III. PUBLIC FINANCIAL MANAGEMENT REFORMS IN SIERRA LEONE

➤ *From Collapse to Reconstruction*

Sierra Leone's PFM history divides sharply at the end of the civil war in 2002. The pre-war and wartime decades left a treasury that was, by any functional test, broken: budgets bore little relation to outturns, the accounts of government were years in arrears, cash was managed through hundreds of uncoordinated bank accounts, and the audit function was moribund (World Bank, 2009; Tavakoli et al., 2013). Post-war reconstruction therefore treated PFM not as a technical refinement but as state-building. The first-generation reforms, roughly 2002 to 2009, rebuilt the basics: a Medium-Term Expenditure Framework introduced from 2001, the Government Budgeting and Accountability Act 2005 and its Financial Management Regulations 2007, the re-establishment of internal audit units, and the piloting of the IFMIS in 2005 within the Accountant General's Department (Government of Sierra Leone, 2005; World Bank, 2009). The first PEFA assessments of 2007 and 2010 recorded the low baseline against which subsequent progress must be judged, with most indicators at or near the bottom of the scale (PEFA Secretariat, 2007, 2010).

A second generation, roughly 2010 to 2017, consolidated and legislated. The Integrated Projects Administration Unit's donor-financed programmes were

succeeded by the multi-donor Integrated PFM Reform Project (IPFMRP, 2014 to 2018), financed by the World Bank, the United Kingdom, the European Union and the African Development Bank (World Bank, 2017). The Public Financial Management Act 2016 replaced the 2005 Act with a more comprehensive statute covering fiscal responsibility principles, commitment control, banking and cash management, in-year and annual reporting, and sanctions for breaches, supported by the PFM Regulations 2018 (Government of Sierra Leone, 2016, 2018). The Public Procurement Act 2016 modernised the 2004 procurement law and strengthened the National Public Procurement Authority (NPPA), while the Audit Service Act 2014 reinforced the independence of Audit Service Sierra Leone (ASSL).

A third generation, from 2018, has emphasised consolidation of the Treasury Single Account, payroll integrity, revenue mobilisation and digitalisation. Notable measures include the extension of the TSA to sub-vented agencies from 2019, biometric payroll verification exercises, the National Revenue Authority's rollout of the Integrated Tax Administration System (ITAS) and ASYCUDA World for customs, the Electronic Cash Register initiative for the goods and services tax, and successive PFM reform strategies (2018 to 2021, and 2023 to 2027) aligned with the Medium-Term National Development Plan 2019 to 2023 and the National Development Plan 2024 to 2030 (Government of Sierra Leone, 2019, 2024; Ministry of Finance, 2018, 2023; National Revenue Authority, 2022; IMF, 2021, 2024). The 2014 PEFA assessment, conducted as the Ebola epidemic broke, marked the mid-point of this trajectory, recording gains in accounting and reporting alongside static credibility scores (PEFA Secretariat, 2014).

➤ *The Institutional Architecture*

Responsibility for PFM is distributed across a small set of institutions whose interaction largely determines how well the IFMIS performs. The Ministry of Finance owns fiscal policy, budget preparation and the reform agenda, publishing the annual Fiscal Strategy Statement and Budget Statement required by the 2016 Act. The Accountant General's Department (AGD) is the operational custodian of the IFMIS: it manages the chart of accounts, processes payments, operates the TSA, produces the monthly and annual public accounts and superintends government banking (Accountant General's Department, 2022). The Bank of Sierra Leone holds the TSA and operates the real-time gross settlement and automated clearing systems through which electronic government payments flow (Bank of Sierra Leone, 2022). The National Revenue Authority administers domestic taxes and customs and remits collections to the consolidated fund. Audit Service Sierra Leone provides external audit of the annual financial statements and of MDAs, its reports examined by Parliament's Public Accounts Committee. The NPPA regulates procurement, whose records ought to reconcile with IFMIS commitments. Statistics Sierra Leone supplies the macroeconomic and demographic data that frame the budget (Statistics Sierra Leone, 2023). Local councils, re-established under the Local Government Act 2004 and now governed by the Local Government Act 2022, manage devolved functions with their own financial management

systems, historically PETRA, with ongoing efforts to bring them onto the central platform (Government of Sierra Leone, 2022; Ministry of Finance, 2023). Development partners, including the African Development Bank, remain significant financiers of the reform agenda (African Development Bank, 2020).

➤ *Reform Achievements and Their Limits*

Measured against the wreckage of 2002, the achievements are real. Sierra Leone has a modern PFM statute, a functioning treasury, regular budget documentation, annual financial statements produced within statutory deadlines, an active supreme audit institution and a parliamentary oversight process (PEFA Secretariat, 2018; Audit Service Sierra Leone, 2023). Yet successive diagnostics tell a consistent second story. The 2018 PEFA assessment scored budget credibility poorly, with aggregate expenditure outturns deviating substantially from approved budgets and expenditure composition shifting significantly in-year; extra-budgetary operations, arrears monitoring and fiscal risk oversight remained weak (PEFA Secretariat, 2018). The IMF's Article IV consultations and Extended Credit Facility reviews repeatedly flag unbudgeted spending, arrears accumulation and cash-flow pressures, alongside commendation for TSA progress and revenue reforms (IMF, 2022a, 2024). ASSL's annual reports quantify billions of

leones in unsupported, irregular or undocumented expenditure each year and record recurring failures of reconciliation and asset management (Audit Service Sierra Leone, 2022, 2023). The pattern matters for this article's argument: the reforms built systems faster than they built the incentives and enforcement needed to use them fully, a sequencing problem to which the analysis returns repeatedly.

➤ *IFMIS Implementation in Sierra Leone: A Case Study*

• *Motivation and Timeline*

The decision to computerise the treasury flowed directly from the post-war diagnosis. Donors and government alike concluded that manual processes could not deliver the expenditure control, payroll integrity and fiscal reporting that reconstruction financing required, and that a computerised system was also a fiduciary safeguard for the budget support on which the state then depended (World Bank, 2009; Tavakoli et al., 2013). Procurement selected the FreeBalance Accountability Suite, a COTS platform designed for government financials and already deployed in several post-conflict states, including Kosovo, Timor-Leste and Afghanistan (FreeBalance, 2019; Hendriks, 2013).

Table 1 summarises the implementation trajectory.

Table 1 Evolution of IFMIS in Sierra Leone, 2004 to 2026

Phase	Period	Key developments	Principal financiers
Preparation	2004 to 2005	System selection; new chart of accounts; pilot design within AGD	World Bank (IRCBP); DFID
Pilot	2005 to 2007	Go-live in AGD and Ministry of Finance; core GL, purchasing and expenditure modules	World Bank; DFID
First rollout	2008 to 2013	Extension to major spending MDAs; payroll module; move to accrual-capable platform version	World Bank (PFMICP); EU; AfDB
Consolidation	2014 to 2018	IPFMRP; TSA establishment (2017); EFT payments via BSL; PETRA in local councils	World Bank; DFID; EU; AfDB
Deepening	2019 to 2023	TSA extension to sub-vented agencies; payroll biometric cleansing; upgrade of FreeBalance version; wider MDA coverage	World Bank (PFMICP II); EU
Digital integration	2024 to 2026	Interfaces with ITAS and ASYCUDA under development; e-procurement piloting; council integration; NDP 2024 to 2030 digital agenda	World Bank; EU; AfDB; GoSL

Note. Compiled by the authors from World Bank (2009, 2017), Ministry of Finance (2018, 2023) and Accountant General's Department (2022). Dates for early phases vary slightly across sources.

• *Coverage, Architecture and Governance*

Coverage has widened steadily. From two pilot sites in 2005, the system now reaches the large majority of central government MDAs, and official reporting indicates that most central government expenditure other than some donor-funded project spending is processed through the platform, with the remaining MDAs and the 22 local councils the current frontier (Ministry of Finance, 2023; Accountant General's Department, 2022). Local councils have historically operated the lighter PETRA application, with consolidation into central fiscal reports performed at the AGD; full integration remains incomplete, a gap examined in Section 12.

The technical architecture follows the standard third-generation pattern shown in Figure 1. The FreeBalance suite provides budget controls, purchasing and commitments, expenditures, revenues, the general ledger and financial reporting, organised around a multi-segment chart of accounts compliant with the IMF's Government Finance Statistics classification.

The primary data centre sits in Freetown with a secondary site for disaster recovery, and a wide area network connects MDAs, though bandwidth and power reliability vary sharply outside the capital (World Bank, 2017; Ministry of Finance, 2023). Payments settle electronically through the Bank of Sierra Leone's real-time gross settlement system

against the TSA. Interfaces to the National Revenue Authority's ITAS and ASYCUDA systems and to the

emerging e-procurement platform are partial and remain work in progress.

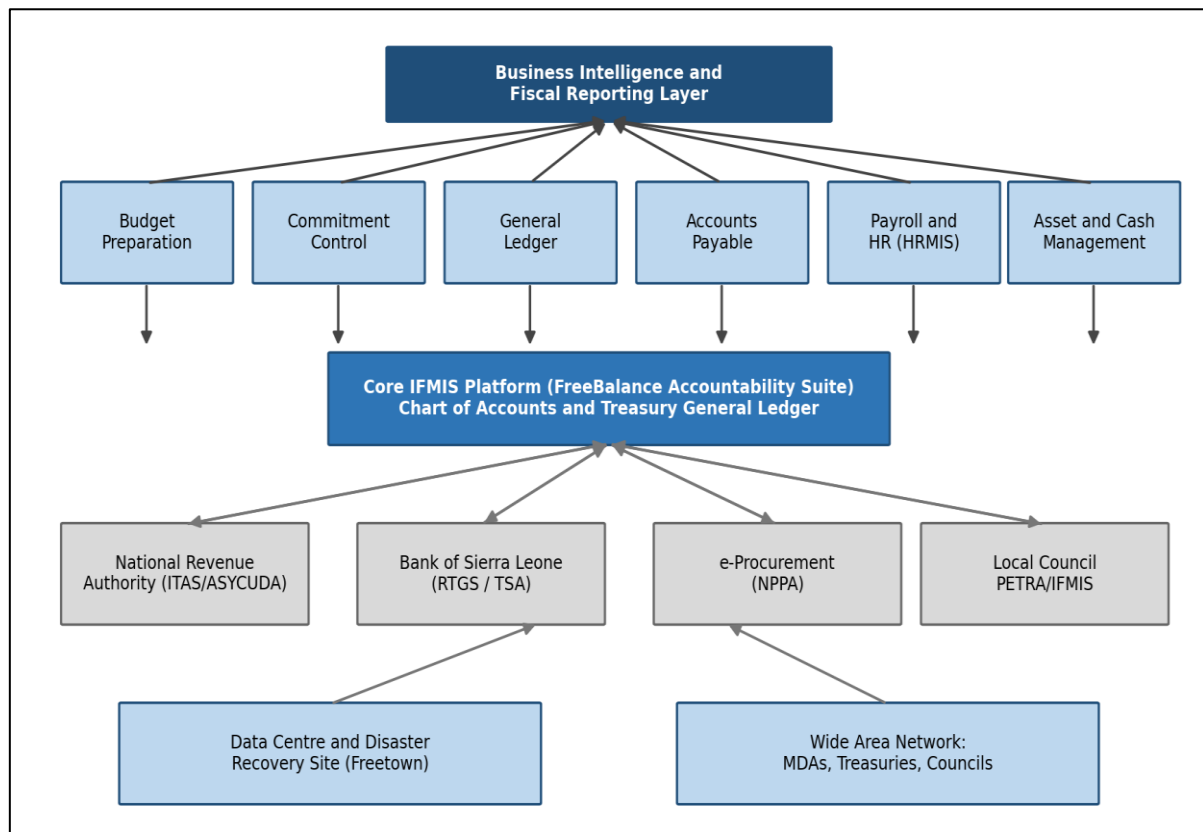


Fig 1 IFMIS System Architecture in Sierra Leone (Schematic).

Governance of the system rests with the Ministry of Finance's PFM reform directorate and the AGD, supported by an ICT unit responsible for administration, user management and security. Segregation of duties is enforced through role-based access: budget officers, vouching officers, approvers and payment processors hold distinct profiles, and every action is time-stamped in the audit log (Accountant

General's Department, 2022). Training has been delivered through donor-financed programmes and the Public Financial Management Academy concept, though turnover of trained staff remains a chronic drain, as Section 12 documents.

Table 2 sets out the principal modules and their functions.

Table 2 Major IFMIS Modules and Functions in Sierra Leone

Module	Core functions	Status
Budget controls	Loading of appropriations; allotments and warrants; virement processing	Operational
Purchasing and commitments	Requisitions; purchase orders; automatic funds checking against budget	Operational; discipline uneven
Expenditures (accounts payable)	Voucher processing; multi-level electronic approval; EFT payment files	Operational
Revenue (accounts receivable)	Recording of NRA remittances and non-tax revenue	Operational; interface to ITAS partial
General ledger	Double-entry postings on unified chart of accounts; period closing	Operational
Cash and treasury management	TSA position monitoring; bank reconciliation	Operational; forecasting weak
Payroll and HR interface	Salary processing; establishment control via HRMIS link	Operational; verification periodic
Asset management	Fixed asset registers	Partially implemented
Reporting	Monthly, quarterly and annual statements; management reports	Operational

Note. Authors' synthesis from Accountant General's Department (2022), Ministry of Finance (2023) and World Bank (2017).

• *The Public Financial Management Cycle and Budget Execution Flow*

Figures 2 and 3 place the system in its process context. Figure 2 shows the PFM cycle with the IFMIS as the digital backbone connecting planning, budgeting, execution, accounting, reporting and audit. Figure 3 traces a single expenditure transaction from appropriation to general ledger posting, with the commitment check and the electronic approval chain as the critical control points. The analytical significance of these flows is developed in Sections 8 to 10.

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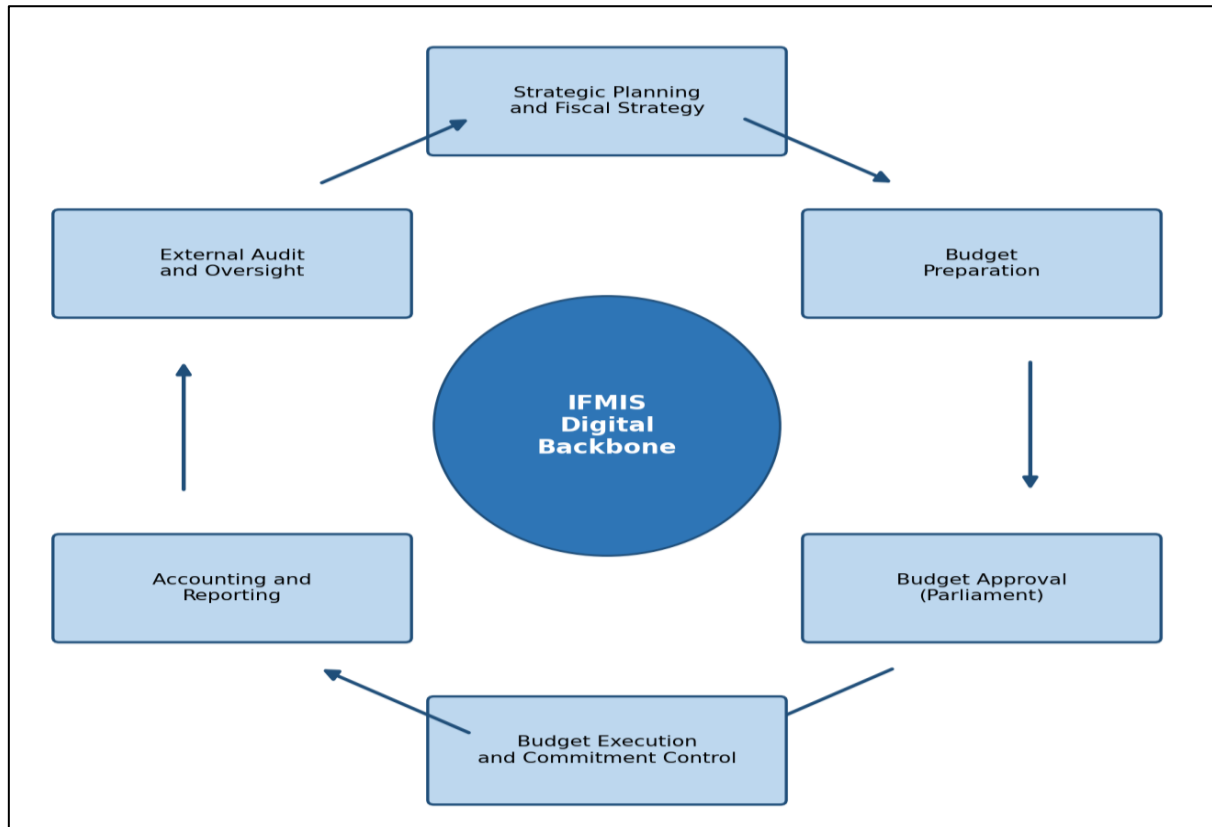


Fig 2 The Public Financial Management Cycle with IFMIS as Digital Backbone.

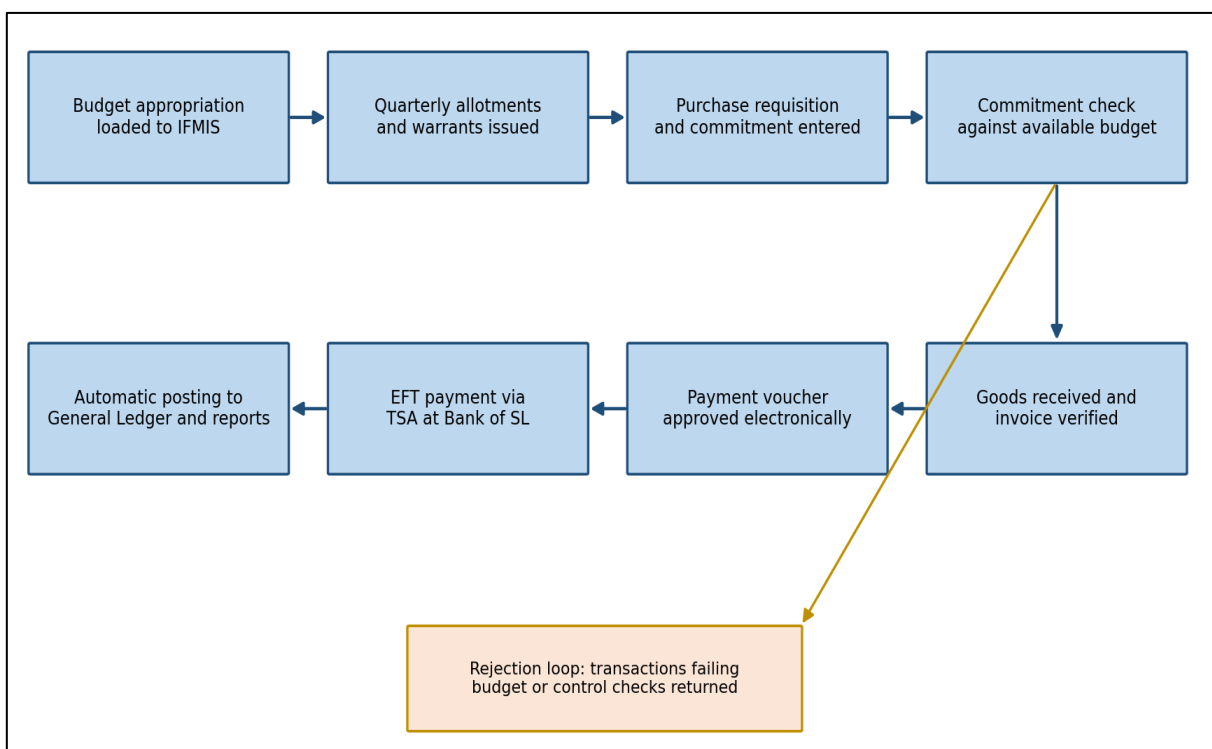


Fig 3 Budget Execution and Expenditure Processing Under IFMIS.

- *Costs, Achievements and Remaining Gaps*

Precise lifetime costs are difficult to isolate because IFMIS spending has been embedded within successive multi-component projects, but World Bank project documentation for the IRCBP, PFMICP and IPFMRP operations, together with parallel DFID, EU and AfDB financing, indicates cumulative donor investment in PFM systems and reform in the order of well over one hundred million US dollars since 2004, of which the IFMIS platform, infrastructure and training form a substantial share (World Bank, 2009, 2017). These figures should be verified against project completion reports before citation in policy documents.

The headline achievements are a functioning integrated ledger covering most of central government; commitment control embedded in the payment process; a TSA that has swept hundreds of dormant and fragmented accounts into a consolidated position at the central bank; electronic payment of salaries and suppliers; and annual financial statements submitted for audit within statutory deadlines (Accountant General's Department, 2022; Audit Service Sierra Leone, 2023; IMF, 2024). The principal gaps are equally clear: incomplete coverage of local councils and some donor-funded expenditure; partial interfaces to revenue, procurement and debt systems; underused asset and forecasting functionality; fragile infrastructure; and, above all, practices that bypass or override the controls the system provides. The following sections subject these claims to closer analysis.

➤ *Theoretical Framework*

No single theory explains why a treasury system succeeds or fails. This section reviews the principal candidates critically and then integrates them into the conceptual framework used in the analysis.

- *Technology Acceptance and Diffusion Theories*

The Technology Acceptance Model (TAM) holds that perceived usefulness and perceived ease of use drive individual adoption of information systems (Davis, 1989; Venkatesh et al., 2003). Applied to IFMIS, TAM predicts that accountants and budget officers will use the system to the extent that it makes their work easier and more effective. The model illuminates micro-level resistance: officers who find the interface cumbersome, or whose informal practices the system disrupts, will work around it where they can. Its weakness in a government setting is equally plain: use of an IFMIS is typically mandated, not voluntary, so acceptance operates through compliance quality rather than adoption choice, and TAM says little about the organisational politics that determine whether workarounds are tolerated (Heeks, 2002; Hendriks, 2013).

Rogers' Diffusion of Innovation Theory adds a system-level lens, explaining adoption through relative advantage, compatibility, complexity, trialability and observability, and through the behaviour of early adopters and change agents (Rogers, 2003). It usefully explains Sierra Leone's phased rollout, in which pilot sites within the AGD served as demonstration cases before extension to line MDAs, and it predicts the slower uptake observed in remote councils where

compatibility with existing skills and infrastructure is lowest. Yet diffusion theory, like TAM, treats the innovation as fixed and beneficial, whereas the Sierra Leonean record shows the system's value depends on whether its controls are enforced.

- *Institutional and Political Economy Theories*

Institutional Theory shifts attention from individuals to rules, norms and legitimacy. DiMaggio and Powell (1983) distinguish coercive, mimetic and normative isomorphism, all three of which are visible in African IFMIS adoption: coercive pressure from donors making financing conditional on treasury computerisation; mimetic copying of regional peers; and normative diffusion through professional accounting bodies and IMF technical assistance. The critical insight for this article is the danger of what Andrews (2013) calls isomorphic mimicry: states adopt the visible forms of reform, an installed system and a modern statute, to secure external legitimacy, while the underlying functions, actual commitment discipline and actual accountability, lag behind. Sierra Leone's combination of good systems and recurrent audit qualifications fits this description uncomfortably well.

Agency Theory frames PFM as a chain of principal-agent relationships: citizens to parliament, parliament to executive, ministry of finance to spending agencies, managers to accountants (Jensen & Meckling, 1976; Strøm, 2000). An IFMIS is, in this reading, a monitoring technology that reduces information asymmetry and constrains opportunism through automated controls and audit trails. The theory explains both the system's value and the resistance to it: those who benefit from opacity have incentives to bypass, delay or underfund it. Public Choice Theory generalises the point, treating politicians and officials as utility maximisers for whom discretionary, untracked spending is an asset (Buchanan & Tullock, 1962; Niskanen, 1971). The persistence of extra-budgetary expenditure alongside a capable control system is precisely what these theories predict where enforcement is weak.

New Public Management supplies the reform narrative within which IFMIS travelled: disaggregation, performance measurement, output focus and private-sector information disciplines (Hood, 1991; Pollitt & Bouckaert, 2017). Its critics note that NPM assumes administrative capacities that fragile states lack, that its accounting instruments can serve ritual as much as management, and that importing its tools without its preconditions produces form without function (Schick, 1998; Lapsley, 2009; Andrews, 2013). E-government scholarship adds a parallel caution against the mythology of technological transformation detached from organisational reality (Bekkers & Homburg, 2007; Ciborra, 2005). The Resource-Based View, drawn from strategic management, reads the same problem from inside the organisation: sustained performance requires bundles of complementary resources, technology plus skills plus processes plus culture, and an IFMIS deployed without the complementary human and organisational assets yields little advantage (Barney, 1991; Melville et al., 2004).

- *Public Value and Digital Government Theories*

Public Value Theory reorients evaluation from internal efficiency to the value citizens receive: better services, fairness, transparency and trust (Moore, 1995; O'Flynn, 2007). It asks of the IFMIS not merely whether payments are faster but whether budget information reaches citizens, whether audit findings produce consequences and whether fiscal discipline protects service delivery. Digital-era governance scholarship extends this to the technological present, arguing that digital government succeeds when it reintegrates services around user needs and treats data as a shared asset rather than a departmental possession (Dunleavy et al., 2006; Margetts & Dunleavy, 2013; Twizeyimana & Andersson, 2019). Heeks' (2002) design-reality gap model, developed specifically for information systems in developing countries, provides the bridging diagnostic: failure grows with the distance between the assumptions embedded in a system's design and the realities of infrastructure, skills, processes and politics in which it lands.

- *An Integrated Conceptual Framework*

Figure 4 integrates these strands. IFMIS adoption and use, shaped by system quality, coverage and module utilisation, produces intermediate outcomes, commitment control, reconciliation, audit trails and real-time information, which in turn drive financial performance, measured as budget credibility, reporting timeliness, expenditure control and fiscal transparency. Two moderating blocks condition every link: institutional and organisational factors, including political commitment, the legal framework, leadership and enforcement, drawn from institutional, agency and public choice theory; and technical and capacity factors, including power, connectivity, cybersecurity, skills and financing, drawn from the resource-based view and the design-reality gap model. TAM and diffusion theory operate at the micro level within the first block. The framework's central proposition, tested qualitatively in Sections 8 to 12, is that in Sierra Leone the first causal chain functions reasonably well while the moderating blocks systematically attenuate its effects.

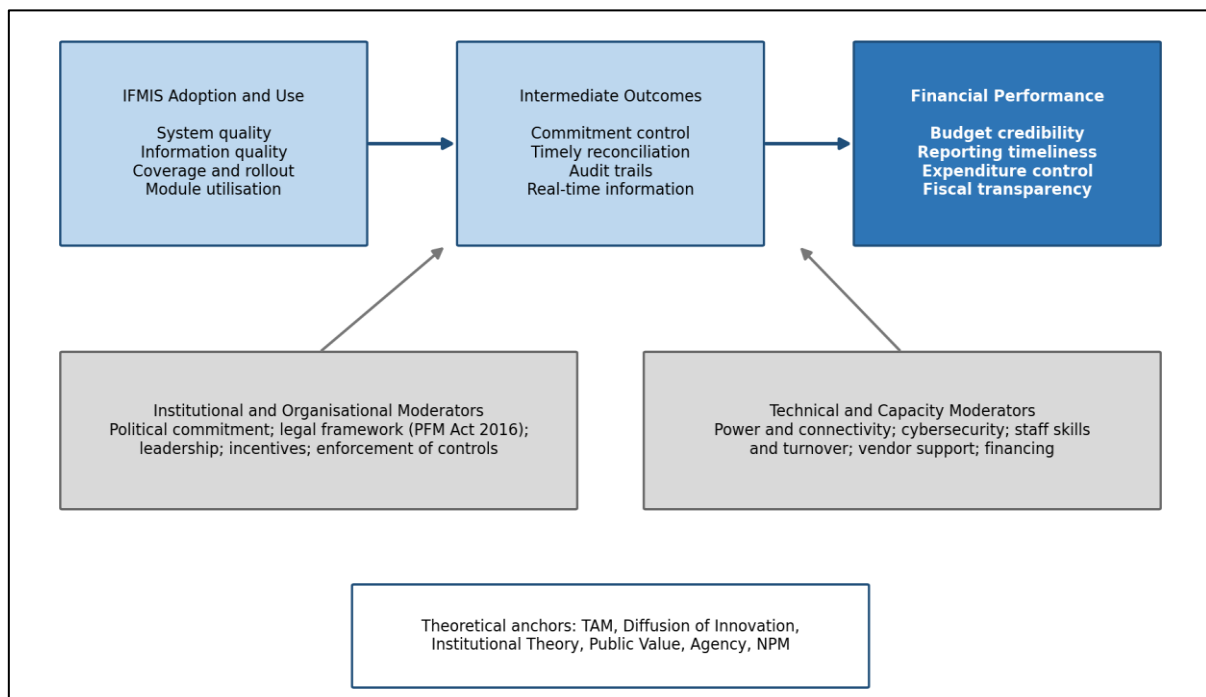


Fig 4 Integrated Conceptual Framework Linking IFMIS to Public Financial Performance.

IV. LITERATURE REVIEW

➤ *IFMIS and Public Financial Performance: The Global Evidence*

The foundational policy literature is cautious. Diamond and Khemani (2006), reviewing early developing-country experience, concluded that IFMIS projects were technically demanding, frequently delayed and dependent on prior reforms to budget classification and treasury organisation. Dener et al. (2011), in the most comprehensive World Bank stocktake, found that of 55 completed Bank-financed projects, most delivered operational systems but with long implementation periods averaging seven to nine years, and that sustainability after project closure was the weakest dimension. Dener and Young (2013) added that publication

of open budget data from these systems remained rare, weakening the transparency dividend. Hashim and Piatti-Fünfkirchen (2018) reframed evaluation around utilisation, arguing that the proper test is not whether a system exists but whether transactions actually flow through its controls, a distinction that proves central to the Sierra Leone case. Their diagnostic work in Malawi and elsewhere showed how coverage gaps, manual cheque payments and suspense accounts can hollow out an apparently functional system (Hashim et al., 2020).

Quantitative cross-country evidence is thin but suggestive. Studies associate IFMIS maturity with improved PEFA scores on accounting and reporting dimensions more strongly than on budget credibility dimensions, consistent

with the view that technology fixes information problems more readily than incentive problems (de Renzio et al., 2011; Fritz et al., 2017; Simson & Welham, 2014). IMF work on fiscal transparency similarly finds that systems investment improves the availability of fiscal data but that political institutions determine its use (Cangiano et al., 2013; Uña et al., 2019).

➤ *Regional Experience*

• *Africa*

The African literature is the richest for present purposes. Kenya's IFMIS re-engineering after 2011 attracted extensive study; researchers found positive associations between IFMIS use and expenditure control in national and county governments, but also chronic connectivity failures, procurement scandals conducted through the system, and capacity gaps at county level (Njonde & Kimanzi, 2014; Odoyo et al., 2014; Cheruiyot & Rotich, 2018). Ghana's GIFMIS, implemented from 2010 on an Oracle platform, improved payment processing and reporting but struggled with commitment control, arrears and incomplete coverage of internally generated funds (Betley et al., 2012; Ohemeng & Ofosu-Adarkwa, 2018). Tanzania and Uganda, early adopters on Epicor and Oracle respectively, recorded gains in reconciliation and reporting alongside recurrent problems of system downtime, payroll ghosts and budget indiscipline (Semakula & Muwanga, 2012; Mzenzi & Gaspar, 2015; Mkasiwa, 2020). Rwanda is the region's acknowledged success: a government-built system (IFMIS, later SmartFMS) rolled out with strong central leadership, near-universal coverage including subnational entities, and measurable improvements in reporting timeliness and audit outcomes (Karangwa et al., 2020; World Bank, 2020). Nigeria's GIFMIS and TSA reforms achieved dramatic consolidation of government cash, sweeping thousands of accounts into the central bank, but federal structure and enforcement gaps limited effects on budget credibility (Okerekeoti & Okoye, 2021; Eme et al., 2015). Hove and Wynne (2010) and Hendriks (2013) synthesise the continental pattern: systems are attainable; discipline is the scarce commodity.

• *Asia and Latin America*

Asian cases add nuance on sequencing and scale. Indonesia's SPAN and India's PFMS demonstrate that very large treasuries can be unified digitally, with measurable gains in payment speed and cash visibility (Hashim & Piatti-Fünfkirchen, 2018; Gupta et al., 2017). Latin America supplies the longest time series: Brazil's SIAFI and Chile's SIGFE show mature systems supporting credible fiscal rules and open data, and the region pioneered the transparency portals now emulated elsewhere (Dener et al., 2011; Pimenta & Pessoa, 2015). OECD experience, where integrated systems are assumed rather than debated, has shifted to analytics, accrual accounting and spending reviews, indicating the direction of travel for later adopters (OECD, 2022; Moretti & Youngberry, 2018).

➤ *Themes: Accounting, Transparency, Controls and Audit*

Several thematic literatures bear directly on the research questions. On government accounting, studies of IPSAS

adoption in Africa find cash-basis IPSAS attainable where an IFMIS supplies a unified ledger, but accrual migration obstructed by asset registers, valuation capacity and skills (Polzer et al., 2023; ACCA, 2017; Christiaens et al., 2015; IPSASB, 2022). On transparency and accountability, de Renzio and Wehner (2017) review evidence that fiscal transparency correlates with lower borrowing costs and reduced corruption, while noting that publication without accessibility yields little citizen accountability. A related quantitative literature finds that e-government maturity is associated with lower measured corruption, though effect sizes are modest and causality contested (Andersen, 2009; Shim & Eom, 2008; Lio et al., 2011), and case studies of systems such as Seoul's OPEN portal show how transaction transparency can deter rent-seeking when paired with citizen access (Kim et al., 2009; Bertot et al., 2010). On internal control and audit, research on African supreme audit institutions shows that computerised audit trails improve evidence quality but that the accountability loop closes only where legislatures act on findings (Wang & Rakner, 2005; Cordery & Hay, 2019; INTOSAI, 2019). On ICT adoption in low-income states, Heeks' (2002) design-reality gap and subsequent ICT4D scholarship document high failure rates where donor-designed systems assume infrastructure and incentives absent on the ground (Avgerou, 2008, 2010; Krishna & Walsham, 2005; Madon, 2009; Walsham, 2017).

➤ *Sierra Leone Studies and the Research Gap*

Sierra Leone-specific scholarship is sparse. Tavakoli et al. (2013) provide the fullest published account of the post-war PFM reform sequence, emphasising the productive interplay of government leadership and donor finance up to about 2011. World Bank project documentation, PEFA assessments (2007, 2010, 2014, 2018 and the 2021 follow-up work) and IMF reports supply rich but largely descriptive evidence (World Bank, 2017; PEFA Secretariat, 2018; IMF, 2022a, 2024). A small number of dissertations and local studies examine IFMIS user perceptions or TSA effects, but peer-reviewed, theoretically framed assessments of the system's contribution to financial performance are effectively absent. Three gaps follow: the absence of an integrated, theory-driven evaluation of Sierra Leone's IFMIS; the neglect of small post-conflict states in comparative IFMIS scholarship; and the lack of analysis connecting the country's persistent audit findings to the utilisation and enforcement questions raised by Hashim and Piatti-Fünfkirchen (2018). This article addresses each.

V. RESEARCH METHODOLOGY

➤ *Philosophy and Design*

The study adopts a pragmatist research philosophy, treating knowledge claims as warranted by their usefulness for explanation and policy rather than by allegiance to a single paradigm (Creswell & Creswell, 2018). Pragmatism suits a question that is simultaneously technical (does the system work?), institutional (do actors let it work?) and normative (what should be done?). The design is a qualitative single-country case study with embedded comparative elements (Yin, 2018). A single case is justified on revelatory and critical-case grounds: Sierra Leone combines two

decades of IFMIS operation with unusually rich diagnostic documentation, and it tests theory in the boundary conditions of a small, aid-dependent, post-conflict state where mainstream models are most likely to fail.

Within the case, the unit of analysis is the IFMIS as a socio-technical system, and the embedded units are the three performance domains specified in the research questions: budget execution, government accounting and financial reporting. The temporal frame runs from the 2005 pilot to early 2026, allowing before-and-after comparison against the pre-computerisation baseline documented in the 2007 PEFA assessment and early World Bank diagnostics. Comparative elements are embedded rather than fully symmetrical: six African countries are examined through a structured, focused comparison in Section 13, not as equal cases but as sources of analytical contrast on dimensions where Sierra Leone's trajectory requires explanation.

➤ *Data Sources*

The evidence base is documentary and secondary, comprising six streams: (a) government sources, including Ministry of Finance budget statements, fiscal strategy statements and PFM reform strategies, Accountant General's Department annual public accounts, and legislation and regulations; (b) oversight sources, principally Audit Service Sierra Leone annual reports 2015 to 2023 and Parliamentary Public Accounts Committee proceedings; (c) international diagnostic assessments, including PEFA reports for 2007, 2010, 2014 and 2018 and subsequent PEFA-related analysis, IMF Article IV consultations and programme reviews 2018 to 2024, and World Bank Public Expenditure Reviews and project documents for the IRCBP, PFMICP, IPFMRP and successor operations; (d) comparator-country diagnostics for Ghana, Rwanda, Kenya, Uganda, Tanzania and Nigeria; (e) peer-reviewed literature identified through Scopus, Web of Science, ScienceDirect, Emerald, Springer, Taylor and Francis and Wiley databases using combinations of the terms IFMIS, FMIS, public financial management, budget execution, government accounting, financial reporting and country names, prioritising 2018 to 2026 publications while retaining seminal earlier works; and (f) reputable institutional research from the OECD, IFAC, IPSASB, INTOSAI, Transparency International and the Open Budget Survey.

➤ *Analysis, Quality and Limitations*

A note on the evidential status of PEFA assessments is warranted, since they carry substantial weight in the analysis. PEFA is a standardised, indicator-based framework applied by trained assessors against published criteria, and Sierra Leone's four assessments constitute a rare repeated measure of PFM performance spanning the IFMIS era (PEFA Secretariat, 2020). The framework's limitations are acknowledged: indicators measure *de jure* and *de facto* process quality rather than fiscal outcomes, methodological revisions in 2016 complicate strict inter-temporal comparison, and scores compress complex realities into ordinal grades. These limitations are managed by using PEFA directionally, corroborated against audit and IMF evidence, rather than as precise measurement.

Analysis proceeded through qualitative content analysis. Documents were coded against the dimensions of the conceptual framework in Figure 4: adoption and utilisation; intermediate control outcomes; performance outcomes across budget execution, accounting and reporting; and institutional and technical moderators. Coding was iterative, with themes refined as contradictions between sources emerged. Triangulation across the six data streams served validity: a claimed achievement was accepted only where at least two independent source types corroborated it, and disconfirming evidence, particularly from audit reports, was sought deliberately to counter the optimism bias typical of project self-reporting (Bowen, 2009; Yin, 2018). Reliability was pursued through an audit trail of coded extracts and consistent application of the framework. The comparative element in Section 13 follows a structured, focused comparison logic, asking identical questions of each comparator (George & Bennett, 2005).

Limitations are acknowledged frankly. First, the study relies on secondary sources; no primary interviews or system log data were collected, so utilisation is inferred from diagnostics rather than measured directly. Second, official statistics in Sierra Leone contain known gaps and revisions, and figures cited from compiled sources are indicative and should be verified against primary publications. Third, single-case findings generalise analytically, to theory, rather than statistically, to a population of countries. Fourth, attribution is inherently difficult: financial performance responds to macroeconomic shocks, including the Ebola epidemic of 2014 to 2016, the COVID-19 pandemic and the 2022 to 2023 inflation surge, which the analysis controls for narratively rather than econometrically. Ethically, the study uses only public documents, involves no human subjects and presents institutional criticism in a professional register aimed at reform rather than blame.

➤ *IFMIS and Budget Execution Performance*

• *Commitment Control and Expenditure Processing*

The clearest operational change wrought by the IFMIS lies in the mechanics of spending. Under the manual regime, an MDA could raise obligations with no systematic check against available budget; arrears were discovered, not prevented. Under the IFMIS, the sequence in Figure 3 applies: appropriations are loaded at the start of the year, quarterly allotments released, and every purchase order and payment voucher passes an automatic funds check that rejects transactions exceeding available balances (Accountant General's Department, 2022). Payment approval is electronic and multi-level, and settlement occurs by electronic funds transfer through the Bank of Sierra Leone against the TSA, eliminating most cheque-based payments with their attendant float, loss and fraud risks. PEFA assessors and IMF staff consistently credit this architecture with faster payment processing and a real, if partial, hardening of the budget constraint at transaction level (PEFA Secretariat, 2018; IMF, 2022a).

The qualification is equally consistent: the control binds only what passes through it. Three leakage channels recur in

the evidence. First, extra-budgetary and unbudgeted expenditure: ASSL and IMF reports document spending commitments made outside the system, later regularised through supplementary appropriations or left as arrears, particularly in election years and during emergencies (Audit Service Sierra Leone, 2022; IMF, 2024). Second, cash rationing: when revenue underperforms, the Ministry of Finance restricts allotments below appropriation, so the binding constraint becomes cash availability rather than the approved budget, and MDAs respond by accumulating unrecorded obligations to suppliers (World Bank, 2021b; IMF, 2024). Third, overrides: senior authorisation can and does reprioritise payments in the queue, which is defensible in a cash crisis but corrodes the predictability the system is meant to supply. The theoretical reading is straightforward: the IFMIS reduced the information asymmetry between the treasury and spenders, exactly as agency theory predicts, but it could not by itself change the incentives of principals who benefit from flexibility.

- *Budget Credibility, Variance and Supplementaries*

Budget credibility indicators tell the resulting story. PEFA 2018 scored aggregate expenditure outturn and expenditure composition variance poorly, with in-year shifts between votes large enough to strip the approved budget of much of its allocative meaning, and subsequent IMF analysis records recurring overruns concentrated in wages, subsidies and domestically financed capital spending (PEFA Secretariat, 2018; IMF, 2022a, 2024). Supplementary budgets remain routine rather than exceptional. It would be wrong, however, to read these outcomes as evidence that the system failed. The counterfactual matters: without transaction-level control and a consolidated ledger, the same political pressures would have produced larger and later-discovered deviations, as the pre-2005 record shows. The system converts hidden indiscipline into visible indiscipline, which is a genuine, if unglamorous, contribution to accountability. What it cannot do is supply the political commitment to hold the line, a finding consistent with cross-country evidence that FMIS investment moves accounting indicators before credibility indicators (Fritz et al., 2017; Hashim et al., 2020).

- *Payroll, Monitoring and Project Expenditure*

Payroll is the largest single expenditure and the historic locus of ghost workers. Integration of payroll processing with the IFMIS, establishment control through the human resource management information system and periodic biometric verification exercises have removed thousands of irregular records over successive cleansing rounds and slowed re-entry, though ASSL continues to identify unverified staff and weak establishment discipline in some MDAs (Audit Service Sierra Leone, 2023; World Bank, 2021b). Budget monitoring has improved in frequency and detail: the AGD produces monthly and quarterly budget execution reports from the ledger, and the Ministry of Finance publishes in-year fiscal tables, giving managers and oversight bodies visibility that simply did not exist before computerisation. Domestically financed projects are tracked through the commitment chain, but donor-funded project expenditure executed through parallel project accounts remains only partially captured,

understating total spending in system reports and complicating fiscal analysis, a coverage gap flagged repeatedly by PEFA and the IMF (PEFA Secretariat, 2018; IMF, 2024).

Performance budgeting, finally, remains aspirational: the chart of accounts can carry programme segments, and budget documents present programme information, but expenditure is still managed and controlled on an input basis, so the analytical potential of the system for performance management is largely unexploited.

- *Revenue Management*

On the revenue side, the system's contribution is real but second-hand. Tax and customs administration run on the NRA's own platforms, ITAS and ASYCUDA World, supported by the electronic cash register programme for the goods and services tax, and these systems, not the IFMIS, drive collection performance (National Revenue Authority, 2022). The IFMIS contribution lies downstream: remittances to the consolidated fund post to the ledger and the TSA, giving the treasury a same-period view of revenue against budget that manual remittance reporting never supplied, and enabling the monthly revenue-versus-target monitoring now routine in fiscal management (Ministry of Finance, 2023). The cost of the incomplete interface is equally visible. Revenue arrives as summarised postings rather than transaction-level data, reconciliation between NRA records, BSL statements and the ledger consumes effort at each period end, and analytical questions that require joining taxpayer-level and expenditure data cannot be answered inside government systems at all. Non-tax revenue, collected across dozens of MDAs with uneven banking discipline, remains the weakest link, with ASSL regularly reporting under-banked and unreconciled collections (Audit Service Sierra Leone, 2023). Completing the revenue interfaces, Recommendation 7 in Section 14, is therefore among the highest-return integration investments available.

➤ *IFMIS and Digital Government Accounting*

- *From Manual Ledgers to a Unified Digital Ledger*

Government accounting is where the IFMIS has changed practice most completely. Before computerisation, the public accounts were assembled manually from MDA returns of uneven quality, posted to ledgers months in arrears and reconciled, when reconciled at all, against a sprawl of bank accounts. The IFMIS replaced this with a single double-entry general ledger organised on a unified, GFS-consistent chart of accounts applied across all connected MDAs (Accountant General's Department, 2022). Every processed transaction posts automatically and in real time; electronic journals replace manual vouchers for adjustments; period-end closing follows a defined system routine; and the accounting equation is enforced by software rather than by clerical diligence. The chart of accounts itself deserves emphasis as an unheralded reform: its segments for administrative unit, economic classification, function, programme and fund source are what allow one transaction entry to serve budgetary control, statistical reporting and financial

statement preparation simultaneously (Diamond & Khemani, 2006; Uña et al., 2019).

Subsidiary processes have digitalised around the ledger. Accounts payable operates through the voucher and EFT chain described in Section 8. Accounts receivable records NRA remittances and non-tax revenues, though the absence of a full interface with ITAS means much revenue detail still arrives as summarised postings rather than transaction-level data. Payroll posts through its dedicated module. Bank reconciliation, historically the system's Achilles heel across Africa, is now performed against TSA sub-accounts with central bank statements, monthly and with materially shorter lags than the pre-reform norm, although ASSL continues to report unreconciled items and stale suspense balances in particular accounts (Audit Service Sierra Leone, 2022, 2023).

The analytical significance of real-time posting extends beyond convenience. Under batch or manual regimes, the accounting record lags the economic event, and the interval is where errors compound and manipulation hides; month-end became an exercise in reconstruction. Automated, event-driven posting collapses that interval, so the ledger is a current statement of position rather than a delayed history, and control questions, is there budget, has this vendor been paid, what is today's cash position, become queries rather than investigations. Automation also changed the error profile: transcription and casting errors have largely disappeared, replaced by classification errors at data entry, which is why coding discipline and the suspense-account problem discussed below now dominate audit findings on accounting quality (Audit Service Sierra Leone, 2022). The residual manual territory is the adjustment journal, and here the system's electronic journal function, with mandatory approval and automatic audit trail, has replaced the loose-leaf journal voucher whose vulnerability to backdating and alteration auditors of the manual era knew well.

- *Treasury Operations, Cash Management and the TSA*

The Treasury Single Account, established in stages from 2017 and extended to sub-vented agencies from 2019, is analytically inseparable from the IFMIS: the system supplies the ledger view of the consolidated position that makes a TSA operable, and the TSA gives the system a single settlement point (Pattanayak & Fainboim, 2011; IMF, 2022a). The consolidation swept large numbers of fragmented commercial bank accounts into the Bank of Sierra Leone, reduced idle balances outside the treasury's sight and cut borrowing costs at the margin by netting government cash. Cash management, by contrast, remains the weaker twin. Cash forecasting is rudimentary, driven by short-horizon revenue projections of limited accuracy, and the cash rationing described in Section 8 substitutes for genuine active cash management. The system's forecasting and commitment-planning functionality exists but is thinly used, a utilisation gap rather than a technology gap (Hashim & Piatti-Fünfkirchen, 2018; IMF, 2024).

- *IPSAS, Asset Accounting and Internal Control*

Sierra Leone prepares its annual public accounts broadly on the cash basis consistent with Cash Basis IPSAS, with disclosure notes extending beyond pure cash information, and has stated ambitions of phased migration towards accrual IPSAS in line with regional and IFAC trajectories (ACCA, 2017; IFAC, 2021; Accountant General's Department, 2022). The IFMIS is accrual-capable, so the binding constraints are not technological: they are the incomplete fixed asset registers, the unvalued legacy assets, the skills required for accrual recognition and the audit implications of opening balances, obstacles that have slowed accrual adoption across the continent (Polzer et al., 2023). The asset management module is only partially implemented, and ASSL routinely qualifies findings on asset records, making this the most visible accounting gap.

Internal control, finally, has been strengthened structurally by the system: segregation of duties is enforced through user roles, every action is logged, and the audit trail converts investigations from archaeology into query-writing. Internal audit units, supported by the Internal Audit Department of the Ministry of Finance, increasingly use system reports in their work. Yet the annual audit findings of unsupported and irregular expenditure demonstrate that documentary discipline outside the system, contracts, delivery certificates, procurement records, has not kept pace with transactional discipline inside it (Audit Service Sierra Leone, 2023). Digital accounting integrity, in short, is necessary but not sufficient for financial integrity.

➤ *IFMIS and Financial Reporting Efficiency*

- *Timeliness, Accuracy and Completeness*

Reporting efficiency is the dimension on which the evidence for improvement is strongest and least contested. Under the manual regime, annual public accounts were produced years late; the backlog of unaudited accounts in the early 2000s stretched back through the war years. Under the IFMIS, the Accountant General's Department now submits annual financial statements to the Auditor-General within the statutory deadline of three months after year end set by the PFM Act 2016, and the audited accounts reach Parliament within the following statutory window, a transformation in cycle time that PEFA scores capture directly (Government of Sierra Leone, 2016; PEFA Secretariat, 2018; Audit Service Sierra Leone, 2023). Monthly and quarterly budget execution reports are generated from the ledger rather than compiled from returns, shrinking production lags from months to weeks and giving fiscal managers current-year visibility. Figure 5 presents the indicative trend, compiled from PEFA assessments and AGD reporting: a steady compression of the reporting lag as system coverage expanded.

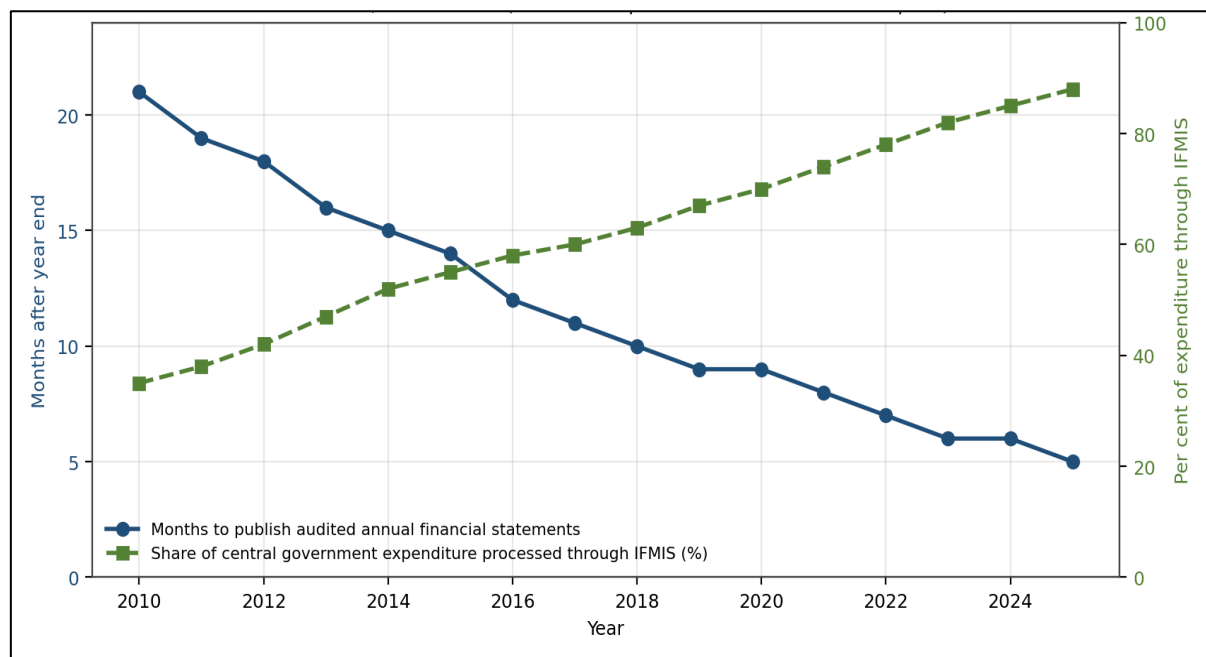


Fig 5 Indicative Trends in Financial Reporting Efficiency and IFMIS Coverage, Sierra Leone, 2010 to 2025.

The reporting suite now spans four tiers. Monthly reports cover budget execution by vote and economic classification, cash position and revenue against target, serving the treasury committee's operational management. Quarterly reports consolidate these for the Ministry of Finance's published fiscal tables and for reporting under IMF programme benchmarks. The annual financial statements, prepared to the Cash Basis IPSAS presentation with expanding disclosures, constitute the statutory account rendered to the Auditor-General and Parliament. Management reports, the fourth tier, are generated on demand for vote controllers and internal audit, from commitment ageing to vendor payment histories. Audit readiness has been transformed in parallel: where auditors once reconstructed populations from files, they now receive electronic transaction populations with complete audit trails, enabling sampling, analytical procedures and, increasingly, computer-assisted audit techniques, a shift ASSL's methodology documents acknowledge even as its findings fault the documentary support behind the transactions (Audit Service Sierra Leone, 2023; INTOSAI, 2019).

Accuracy and completeness have improved with automation, since ledger-generated statements eliminate transcription and aggregation errors, but both remain qualified. The completeness qualification is structural: statements cover what the system covers, so partially captured donor-project expenditure, incompletely integrated councils and thin asset records limit the picture of general government (PEFA Secretariat, 2018; IMF, 2024). The accuracy qualification is evidential: ASSL's recurring findings on unreconciled balances and unsupported expenditure mean the numbers, though internally consistent, do not always command full audit assurance (Audit Service Sierra Leone, 2022, 2023). Reliability, in the auditor's sense, thus lags timeliness, and the distinction matters for users.

• *Transparency, Openness and Decision Support*

Fiscal transparency has advanced measurably. Budget statements, fiscal strategy statements, in-year fiscal tables, annual accounts and audit reports are published, and Sierra Leone's Open Budget Survey scores, while modest in absolute terms, have improved on the availability of key documents, with citizens' budgets and public participation mechanisms added over successive rounds (International Budget Partnership, 2023; Ministry of Finance, 2023; IMF, 2018). Perceived corruption, as tracked by Transparency International's index, has moved only marginally over the same period, underscoring the distance between information availability and accountability outcomes (Transparency International, 2023). The IFMIS underwrites this openness: documents that once could not be produced on time can now be produced and published. Yet the public value test set out in Section 5 asks more. Publication is not accessibility; machine-readable open data from the system remains limited; and the accountability loop from audit finding to sanction closes weakly, with Public Accounts Committee recommendations implemented slowly and surcharge powers rarely applied (Audit Service Sierra Leone, 2023; de Renzio & Wehner, 2017). Transparency, in other words, has improved as output; its conversion into accountability remains institutional work in progress.

For internal decision support, the reporting layer supplies standard budget execution, cash position and vote-level reports, and these demonstrably inform allotment decisions and fiscal monitoring. What is largely absent is the analytical superstructure now common in more mature treasuries: interactive dashboards for managers, exception reporting driven by risk rules, and systematic use of transaction data for expenditure analysis and forecasting (Uña et al., 2023; OECD, 2022). The data exist; the analytics culture and tooling do not yet. Section 15 returns to this frontier.

➤ *Successes of IFMIS in Sierra Leone*

Weighing two decades of evidence, seven achievements stand out as genuine and material, each corroborated across at least two independent source streams.

First, automation of core treasury operations. Budget loading, funds checking, voucher processing, payment settlement and ledger posting are now electronic end to end for connected MDAs, eliminating most manual processing with its delays, transcription errors and physical vulnerabilities (Accountant General's Department, 2022; World Bank, 2017). The operational efficiency gain, measured in payment cycle times and reporting lags, is the least ambiguous return on the investment.

Second, embedded budget control. The automatic commitment check converted the approved budget from a reference document into an operative constraint at transaction level. However porous at the margins, this control prevented an unquantifiable but certainly large volume of over-commitment that the manual system would have passed silently (PEFA Secretariat, 2018; IMF, 2022a).

Third, cash consolidation through the TSA. The sweep of fragmented accounts into the Bank of Sierra Leone, operationally dependent on the IFMIS ledger, gave the treasury sight and use of government cash, reduced idle balances and improved the integrity of government banking (IMF, 2022a; Bank of Sierra Leone, 2022).

Fourth, payroll integrity. Integration of payroll with establishment control and biometric verification removed successive tranches of ghost and irregular records from the

largest expenditure line, with recurring savings that project documentation and audit reports both acknowledge, even while noting residual weaknesses (World Bank, 2021b; Audit Service Sierra Leone, 2023).

Fifth, audit trails and fraud deterrence. Every transaction now carries an electronic history of who initiated, approved and paid, which has shifted the evidential basis of internal and external audit, supported investigations by the Anti-Corruption Commission, and raised the expected cost of simple payment fraud. Electronic approvals and EFT settlement closed the classic cheque-interception and alteration channels (Audit Service Sierra Leone, 2022; Accountant General's Department, 2022).

Sixth, reporting transformation. As Section 10 documented, statutory accounts moved from years late to on time, in-year reports from compiled to generated, and fiscal transparency documents from unavailable to published, with corresponding gains in PEFA reporting scores and Open Budget Survey document availability (PEFA Secretariat, 2018; International Budget Partnership, 2023).

Seventh, decision-relevant visibility. Ministers, the treasury committee and oversight institutions now work from a current, consolidated fiscal picture: cash position, execution rates, arrears indications and revenue postings. Revenue monitoring, while constrained by the partial ITAS interface, is materially better informed than under manual remittance reporting (Ministry of Finance, 2023; IMF, 2024).

Table 3 sets these achievements against the constraints analysed in the next section.

Table 3 IFMIS in Sierra Leone: Benefits Realised Versus Persistent challenges

Dimension	Benefits realised	Persistent challenges
Budget execution	Automated commitment control; faster payments; EFT settlement	Extra-budgetary spending; cash rationing; overrides; arrears
Accounting	Unified ledger and chart of accounts; real-time posting; monthly reconciliation	Suspense balances; weak asset records; partial revenue detail
Reporting	Statutory statements on time; in-year reports from ledger; publication	Coverage gaps (councils, donor projects); audit qualifications
Cash and treasury	TSA consolidation; reduced idle balances	Weak forecasting; passive cash management
Payroll	Ghost removal; establishment control	Residual unverified staff; re-entry risk
Controls and audit	Segregation of duties; full audit trails; fraud deterrence	Documentary indiscipline outside system; slow sanctions
Institutional	Stronger AGD; professionalisation	Staff turnover; vendor dependence; underfunded maintenance

Note. Authors' synthesis from sources cited in Sections 8 to 12.

A methodological caution accompanies these claims. Few of the achievements can be quantified precisely from public sources: payment cycle times, rejection rates at the commitment check and reconciliation lags are held in the system but rarely published, so the assessment rests on triangulated qualitative evidence and directional PEFA scores rather than measured deltas. This opacity is itself a finding. A treasury that published a small dashboard of system performance indicators, transactions processed, average

payment time, rejections, downtime, would strengthen both accountability and the case for continued investment at trivial cost, and the absence of such publication two decades in suggests how weakly the system's custodians have needed to justify it publicly, a comfort donor financing provides and domestic financing would not.

The pattern across all seven successes is worth stating plainly: each is strongest where the gain depends on the

machine and weakest where it depends on sustained human and political discipline. That asymmetry frames the challenge analysis that follows.

VI. PERSISTENT CHALLENGES

The constraints limiting the system's effectiveness fall into five clusters: infrastructural, human, institutional, financial and technical-architectural. They interact, which is why partial fixes have repeatedly disappointed.

➤ *Infrastructure: Power, Connectivity and Continuity*

The system's physical preconditions remain fragile. National electricity access and reliability, though improving with EDSA's network investment and regional interconnection, still fall short of the always-on requirement of a transactional treasury system, forcing dependence on generators and uninterruptible power supplies whose fuel and maintenance are recurrent budget casualties (World Bank, 2021b; Ministry of Finance, 2023). Internet connectivity, despite the ACE submarine cable and expanding fibre, is uneven and expensive outside Freetown, so remote MDAs and councils experience latency and outages that interrupt transaction processing and push users back towards manual workarounds, the classic design-reality gap in action (Heeks, 2002). System downtime, whether from power, network or platform causes, is repeatedly cited in audit and project reporting as a driver of delayed processing and of the tolerated workarounds that erode control. Business continuity and disaster recovery arrangements exist on paper, with a secondary site, but testing is irregular and recovery objectives are not demonstrably met, an exposure that grows with every year of accumulated transaction data (Audit Service Sierra Leone, 2022; World Bank, 2017).

➤ *Human Capacity and Change*

Trained staff are the system's scarcest input. Donor projects have financed extensive training, yet turnover drains it continuously: IFMIS-skilled accountants and ICT specialists command premiums in banks, NGOs and international organisations that government pay scales cannot match, and each departure removes tacit knowledge that formal handover rarely captures (Hendriks, 2013; World Bank, 2017). Capacity gaps are sharpest at the periphery, in smaller MDAs and councils, where a single trained officer may be the entire local capability. Resistance to change persists in subtler forms than outright refusal: preference for manual records kept in parallel, delayed data entry that defeats real-time control, and reliance on a few super-users that concentrates both workload and fraud opportunity. TAM's variables, usefulness and ease of use, remain relevant here two decades after go-live, because each upgrade and each new module restarts the acceptance problem with a new cohort, and the organisational and managerial barriers to e-government adoption identified in the wider literature apply with full force (Savoldelli et al., 2014).

➤ *Institutional and Political Constraints*

The deepest constraints are institutional. Extra-budgetary expenditure and directive spending outside the commitment chain persist because the actors ordering them

face weak consequences; the PFM Act 2016 provides sanctions that are rarely invoked (Government of Sierra Leone, 2016; Audit Service Sierra Leone, 2023). Political interference manifests less as tampering with the system than as instructions that bypass it, particularly around elections and emergencies, and as pressure on payment prioritisation. Policy inconsistency compounds this: reform strategies succeed one another with shifting emphases, and the follow-through on prior commitments, council integration, interface completion, asset registers, is uneven. Procurement delays afflict the system's own upkeep, with licence renewals, hardware replacement and connectivity contracts caught in the very procedures they are meant to strengthen. Local councils present a compound institutional challenge: their separate PETRA environment, thin staffing and irregular connectivity leave subnational finances the least controlled and least visible segment of public money, despite devolution's growing expenditure share (Ministry of Finance, 2023; PEFA Secretariat, 2018).

➤ *Financial Sustainability and Vendor Dependence*

The system's recurrent costs, licences, vendor support, hardware refresh, connectivity, power and training, have been financed predominantly by donors, and the transition to sustainable domestic financing remains incomplete. When project financing gaps occur, maintenance is deferred, with consequences that surface later as downtime and obsolescence (Dener et al., 2011; World Bank, 2017). Dependence on a single foreign vendor for the core platform creates familiar risks: negotiating asymmetry over licence and support pricing, reliance on external expertise for configuration changes, and exposure to product roadmap decisions taken elsewhere. Rwanda's contrasting choice to build domestic ownership of its platform, discussed in Section 13, illustrates the alternative and its demands.

➤ *Technical Architecture, Data and Security*

Integration remains the principal architectural weakness. The interfaces between the IFMIS and ITAS, ASYCUDA, the e-procurement platform, the debt management system (CS-DRMS/Meridian) and council systems are partial or absent, so data re-entry persists at the seams, with the error and reconciliation burden that entails (IMF, 2024; Ministry of Finance, 2023). Legacy processes survive alongside the system wherever integration fails. Data quality suffers correspondingly: suspense account balances, miscoded transactions and unreconciled items recur in audit findings, and data governance, ownership, standards, retention and quality management, has no strong institutional home (Audit Service Sierra Leone, 2022). Cybersecurity, finally, is the growing exposure: a consolidated national payment and accounting system is a high-value target, national cybersecurity capability is nascent despite the Cybersecurity and Crime Act 2021, and the combination of privileged insider access, weak monitoring and untested recovery is precisely the profile in which serious incidents occur (Government of Sierra Leone, 2021; World Bank, 2021a). No catastrophic breach is on the public record; prudence counsels treating that as fortune rather than assurance.

➤ *Crisis Episodes as Stress Tests*

Two national emergencies tested the system and exposed the institutional cluster most sharply. The Ebola epidemic of 2014 to 2016 required rapid emergency spending through hastily created channels; subsequent audits of Ebola funds found large volumes of expenditure without adequate documentation and procurement outside normal procedures, demonstrating how quickly emergency exemptions dissolve controls that the system otherwise enforces (Audit Service Sierra Leone, 2022; Tavakoli et al., 2013). The COVID-19 response repeated the pattern in attenuated form, with dedicated audits again finding documentation and procurement lapses in emergency expenditure. The lesson is not that emergencies should wait for paperwork; it is that resilient control regimes pre-design their emergency procedures, with expedited but recorded workflows inside the system, rather than improvising outside it. Recommendation 2 in Section 14 draws directly on this experience. The 2022 to 2023 inflation and currency redenomination episode added a different stress, forcing reconfiguration of the ledger for the new leone and complicating inter-temporal comparison, handled competently by the AGD but at real capacity cost (IMF, 2024).

The five clusters reinforce one another. Weak infrastructure justifies workarounds; workarounds erode discipline; eroded discipline reduces the system's evident value; reduced value weakens the political case for financing maintenance and enforcement. Breaking that loop, rather than adding modules, is the reform problem properly stated.

➤ *Comparative African Experiences*

Placing Sierra Leone alongside six regional comparators sharpens the diagnosis. The comparison asks identical questions of each case: how was implementation governed, what technology strategy was chosen, how far did coverage and utilisation reach, and what happened to budget management and reporting.

• *Ghana*

GIFMIS, built on Oracle from 2010, achieved broad central government coverage, TSA consolidation and materially faster reporting, but commitment control has been chronically undermined by spending outside the system and by arrears accumulation, contributing to recurrent fiscal crises; the lesson is that a sophisticated platform coexists comfortably with weak aggregate discipline where political incentives point that way (Betley et al., 2012; Ohemeng & Ofosu-Adarkwa, 2018; IMF, 2023).

• *Rwanda*

The regional benchmark. Government developed and owns its platform, rolled it out to virtually all central and subnational entities including districts and schools, financed recurrent costs domestically, and paired the system with enforced accountability, including published audit action tracking. Reporting is timely, coverage near-universal and utilisation high; the case demonstrates that ownership, enforcement and political commitment, not procurement of superior software, distinguish success (Karangwa et al., 2020; World Bank, 2020).

• *Kenya*

A large, well-resourced IFMIS re-engineered after 2011 and extended to 47 counties. Gains in processing and reporting are real, but high-profile procurement frauds executed through the system, county capacity gaps and connectivity failures show that computerisation can channel corruption as well as constrain it when approval integrity fails; scale also multiplied training and support burdens (Njonde & Kimanzi, 2014; Cheruiyot & Rotich, 2018).

• *Uganda*

An early Oracle adopter with progressive extension to local governments and integration with a TSA. Uganda's notable strengths are programme-based budgeting integration and persistent, incremental interface building with payroll and revenue systems; its weaknesses mirror Sierra Leone's, with supplementary budgets and arrears recurring despite the controls (Semakula & Muwanga, 2012; IMF, 2022b).

• *Tanzania*

Two decades on Epicor with several major upgrades. Tanzania consolidated reporting and reconciliation gains and extended coverage subnationally, but repeated platform migrations proved costly and disruptive, warning against upgrade cycles driven by vendor roadmaps rather than functional need (Mzenzi & Gaspar, 2015; Hove & Wynne, 2010).

• *Nigeria*

GIFMIS plus a forcefully implemented TSA swept thousands of accounts and billions of dollars into the central bank, a striking demonstration of executive commitment applied to cash consolidation. Yet federal fragmentation, oil revenue volatility and weak sanction regimes left budget credibility largely unimproved, underlining that consolidation of cash and consolidation of discipline are separate achievements (Eme et al., 2015; Okerekeoti & Okoye, 2021).

Table 4 summarises the comparison.

Table 4 Comparative African IFMIS Experiences

Country	Platform and start	Coverage	Distinctive strength	Distinctive weakness	Core lesson for Sierra Leone
Ghana	Oracle, 2010	Central govt; TSA	Reporting speed	Arrears; bypass spending	Controls need political backing
Rwanda	Govt-built, 2000s	Near-universal incl. subnational	Ownership; enforcement	Few; capacity intensive	Own the system; fund it domestically

Kenya	Oracle re-eng., 2011	National and 47 counties	Scale; county rollout	Fraud through system; connectivity	Approval integrity is decisive
Uganda	Oracle, 1990s	Central and local	Incremental integration	Supplementaries; arrears	Persist with interfaces
Tanzania	Epicor, 1998	Central and subnational	Reconciliation gains	Costly migrations	Upgrade for function, not fashion
Nigeria	GIFMIS/Oracle, 2012	Federal; TSA	Cash consolidation	Credibility unimproved	Cash sweep is not discipline
Sierra Leone	FreeBalance, 2005	Most central govt	Post-conflict rebuild; TSA	Council gap; enforcement	Synthesis of the above

Note. Authors' compilation from sources cited in this section.

Read across the seven cases, the success factors sort into a consistent hierarchy. At the top sits sustained executive commitment expressed as enforcement: Rwanda's presidency and Nigeria's TSA directive show what concentrated political will achieves, in opposite ways, since Nigeria applied it to one instrument and Rwanda to the whole accountability chain. Next comes financing structure: systems whose recurrent costs enter the domestic budget survive donor cycles; systems financed project-to-project decay between projects. Third is the human resource model: a retained professional cadre, as Rwanda built, outperforms serial donor-funded training of staff who then leave. Fourth is architectural patience: incremental interface building and disciplined upgrade decisions beat platform churn. Technology choice itself, the variable procurement processes obsess over, ranks last: Oracle, Epicor, FreeBalance and custom builds all appear among both stronger and weaker performers, confirming that the platform is rarely the binding constraint (Hove & Wynne, 2010; Dener et al., 2011).

Three transferable lessons emerge. First, the success frontier is institutional: Rwanda's enforcement and domestic financing, not its software, explain its outcomes. Second, utilisation and coverage beat sophistication: every case that left significant expenditure outside the system, donor projects, subnational tiers, extra-budgetary funds, paid for it in credibility. Third, integration is a marathon: Uganda's patient interface building yielded more than Tanzania's platform migrations. Sierra Leone's next decade should be designed around these three findings.

VII. POLICY RECOMMENDATIONS

Twenty-five recommendations follow, grouped under nine headings and sequenced in the roadmap at Figure 6 (Section 15). Each is practical in the sense that it names an owner and a feasible instrument.

➤ *Institutional Reforms and Enforcement*

- Enforce the PFM Act 2016 sanctions regime: the Ministry of Finance and the Attorney-General should establish a standing mechanism to apply surcharge and disciplinary provisions to officers who commit expenditure outside the system, with outcomes published annually.
- Adopt a binding government policy that no payment obligation is recognised unless a system commitment

exists, closing the regularisation route for bypass spending except under a narrow, gazetted emergency procedure.

- Institutionalise an IFMIS governance board chaired at Financial Secretary level, with AGD, NRA, NPPA, BSL, ASSL and local government representation, owning the integration roadmap and reporting publicly on milestones.
- Strengthen the Public Accounts Committee's follow-up function with a tracked, published register of audit recommendations and implementation status, on the Rwandan model.

➤ *Coverage and Integration*

- Complete migration of all 22 local councils onto the central platform or a fully interfaced council module, with connectivity and training bundled into the same programme, by a fixed statutory date.
- Bring donor-financed project expenditure onto the system through a dedicated fund-source segment and standing agreements with development partners, eliminating parallel accounting where fiduciary conditions allow.
- Complete the ITAS and ASYCUDA interfaces so revenue posts at transaction level, and interface the debt management system so debt service and disbursements post automatically.
- Integrate the e-procurement platform with the commitment module so that contract award, purchase order and commitment are a single data flow, removing the procurement-to-payment seam where fraud concentrates.

➤ *Capacity Development*

- Create a professional IFMIS cadre within the civil service, with a defined scheme of service, certification requirements and retention allowances benchmarked against market comparators.
- Establish sustained, curriculum-based training through the Public Financial Management Academy and the Institute of Public Administration and Management, replacing episodic project workshops, with mandatory refresher certification for system roles.
- Build a documented knowledge base of configurations, procedures and interface specifications, reducing dependence on individual super-users and vendor staff.

➤ *Infrastructure and Continuity*

- Ring-fence a maintenance and infrastructure line in the domestic budget covering licences, hardware refresh, connectivity and power, ending reliance on project financing for recurrent costs.
- Contract redundant connectivity for all transaction sites and standardise solar-hybrid power backup for district treasuries and councils.
- Test disaster recovery to defined recovery-time and recovery-point objectives at least annually, with results reported to the governance board and the Auditor-General.

➤ *Cybersecurity and Data Governance*

- Establish a treasury security operations capability, with continuous monitoring of privileged access, mandatory multi-factor authentication for approvers and periodic independent penetration testing.
- Enact and enforce a government data governance framework assigning ownership, classification, retention and quality standards for fiscal data, anchored in the National Cybersecurity Coordination Centre's framework under the 2021 Act.
- Conduct an annual independent IT audit of the IFMIS, published with the Auditor-General's report.

➤ *Financial Management Practice*

- Build a genuine cash forecasting function in the AGD, using system transaction data and NRA collection profiles, and replace blunt cash rationing with published quarterly commitment ceilings.
- Complete the fixed asset register and valuation programme as the critical path to phased accrual IPSAS

adoption, with a realistic decade-long migration plan endorsed by ASSL.

- Eliminate aged suspense balances through a time-bound clearance exercise and prohibit new postings to suspense beyond a defined ageing limit.

➤ *Transparency and Public Value*

- Publish machine-readable, transaction-level or near-transaction-level expenditure data from the system through an open fiscal data portal, following the Open Budget Survey's participation and accessibility criteria.
- Produce citizen-oriented in-year execution summaries for health, education and infrastructure votes, linking allocations to facilities and districts.

➤ *Technology Trajectory*

- Adopt a cloud strategy on functional grounds: hybrid hosting with in-country primary processing and cloud-based disaster recovery and analytics, subject to data sovereignty rules, rather than wholesale migration driven by vendor cycles.
- Deploy business intelligence dashboards for budget managers and pilot machine-learning anomaly detection on payment streams, beginning with payroll and high-volume supplier payments.

➤ *Reform Management*

- Anchor all of the above in the successor PFM reform strategy with costed, sequenced actions, a small number of published outcome indicators (budget deviation, reporting lag, audit qualification trend, council coverage), and joint government-partner review twice yearly.

Table 5 summarises the matrix.

Table 5 Policy Reform Matrix

Cluster	Priority actions (nos.)	Lead institutions	Horizon
Enforcement and governance	1 to 4	MoF; AGD; Parliament; ASSL	2026 to 2028
Coverage and integration	5 to 8	AGD; NRA; NPPA; councils	2026 to 2031
Capacity	9 to 11	MoF; PSC; PFM Academy	2026 to 2030
Infrastructure and continuity	12 to 14	MoF; AGD; EDSA; NATCOM	2026 to 2030
Security and data	15 to 17	AGD; NC3; ASSL	2026 to 2032
Financial practice	18 to 20	AGD; MoF	2027 to 2033
Transparency	21 to 22	MoF; AGD	2027 to 2030
Technology	23 to 24	AGD; MoCTI	2029 to 2035
Reform management	25	MoF; partners	Continuous

Note. Authors' construction. Institutional abbreviations as in text.

➤ *The Future of IFMIS: Technology and the Next Decade*

The technological frontier described in Section 2 will reach Sierra Leone whether or not the country prepares for it;

the policy question is sequencing. Figure 6 proposes a roadmap for 2026 to 2035 that orders ambition behind foundations.

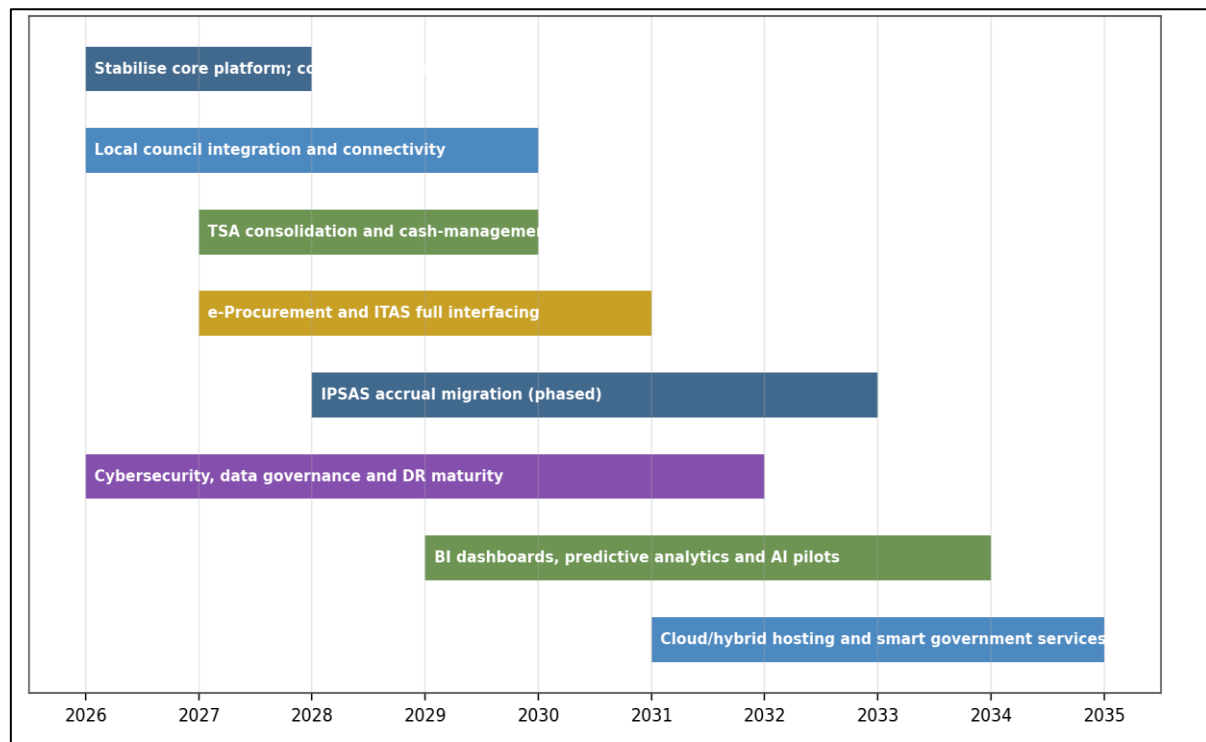


Fig 6 Proposed IFMIS Reform Roadmap for Sierra Leone, 2026 to 2035.

- *Artificial Intelligence and Machine Learning*

The nearest-term high-value application is anomaly detection: supervised and unsupervised models trained on the system's own transaction history can flag payments deviating from vendor, timing and amount patterns, focusing scarce audit attention where risk concentrates (Engin & Treleven, 2019; OECD, 2022; IMF, 2019). Payroll and high-volume supplier streams are the sensible pilots. Automated invoice matching and expenditure classification follow. The precondition is data quality; models trained on miscoded transactions detect miscoding, not fraud, which is why Recommendation 20 precedes Recommendation 24.

- *Big Data, Business Intelligence and Predictive Analytics*

Two decades of transaction data constitute an underused national asset. Dashboarding execution rates, cash positions and arrears indicators for managers is technically trivial on modern platforms; predictive cash forecasting from revenue and expenditure seasonality is the analytically valuable step beyond, addressing the cash management weakness documented in Section 9 (Uña et al., 2023; Gupta et al., 2017).

- *Blockchain and Digital Identity*

Distributed-ledger applications in PFM remain largely experimental, and the honest assessment is that Sierra Leone's control problems have cheaper conventional solutions; selective use in procurement record integrity or aid tracking may mature within the decade (World Bank, 2021a). Digital identity is different: the national digital ID programme, linked to payroll, pensions and social transfers, offers immediate integrity gains and should interface with the IFMIS payment chain as it scales.

- *Mobile Government and Payment Rails*

Interfacing government payments with mobile money extends the EFT revolution to citizens and small suppliers beyond the banked population, reduces cash handling in revenue collection and supports social protection delivery; the BSL's national switch developments make this a near-term, high-return integration (Bank of Sierra Leone, 2022; World Bank, 2021a).

- *Electronic Procurement and Integrated Revenue Management*

Two integrations dominate the near-term functional agenda. E-procurement integration closes the procure-to-pay loop: when tender award, contract, purchase order and commitment become one data flow, split contracting and retrospective regularisation, the procurement channels where audit findings concentrate, become structurally harder, and procurement analytics become possible on live data (Dener et al., 2021). Integrated revenue management completes the other half of the fiscal picture: transaction-level flow from ITAS, ASYCUDA and the electronic cash register network into the ledger would end summarised posting, automate revenue reconciliation and, joined with expenditure data, allow genuinely integrated fiscal analysis for the first time. Neither integration requires frontier technology; both require the governance, standards and institutional cooperation that Recommendation 3's board is designed to supply, which is why they precede the analytics agenda in the roadmap's sequence.

- *Cloud, Open Budgeting and Smart Government*

Hybrid cloud adoption on the terms of Recommendation 23 can cut infrastructure fragility at acceptable sovereignty risk. Open budgeting, publishing

machine-readable fiscal data by default, converts the system's information into public value at negligible marginal cost. The longer smart-government vision, in which the IFMIS operates as the financial core of an interoperable digital state alongside identity, procurement, revenue and service platforms, is the right decadal destination, consistent with the lean-government principle of building shared platforms rather than duplicated silos (Janssen & Estevez, 2013), provided the foundations of enforcement, integration and capacity are laid first. Technology, the Sierra Leonean record teaches, amplifies the institutions it lands in; it does not substitute for them.

VIII. CONCLUSION

This article set out to assess how the Integrated Financial Management Information System has influenced public sector financial performance in Sierra Leone, across budget execution, government accounting and financial reporting, and to explain why documented successes coexist with stubborn weaknesses.

The findings can be stated compactly. IFMIS implementation, motivated by post-war reconstruction and donor fiduciary requirements, delivered a functioning integrated treasury: automated commitment control, electronic payment through a consolidated TSA, a unified digital ledger, hardened payroll, comprehensive audit trails and a transformation of reporting timeliness from years-late to statutory compliance. These are real achievements, and against the 2002 baseline they amount to institutional reconstruction of the first order. Yet performance gains are systematically bounded. Budget credibility remains weak because spending can be commanded around the system and because cash rationing displaces the approved budget as the operative constraint. Accounting integrity is qualified by suspense balances, thin asset records and coverage gaps at councils and in donor projects. Reporting is timely but not yet fully reliable in the auditor's sense, and transparency outputs have not yet closed into accountability outcomes.

Theoretically, the case supports and extends the utilisation turn in the FMIS literature. The Sierra Leonean evidence confirms Hashim and Piatti-Fünfkirchen's (2018) proposition that systems create value only through the transactions and controls they actually carry, and it illustrates Andrews' (2013) isomorphic mimicry at the margin: forms adopted, functions lagging. The integrated framework developed here, in which institutional and capacity moderators condition every link from adoption to performance, fits the evidence better than technology-centred models alone, and the design-reality gap proved the single most economical explanation of workaround behaviour. For agency and public choice theory, the case is almost textbook: monitoring technology improved, incentives did not, and outcomes followed incentives.

For policy, the implication is a change of emphasis rather than of direction. Sierra Leone does not primarily need new software; it needs enforcement of the rules its software already embodies, completion of coverage and interfaces,

sustainable domestic financing of the platform, a retained professional cadre, tested continuity and security, and the conversion of fiscal data into public accountability. The twenty-five recommendations and the 2026 to 2035 roadmap operationalise that emphasis, and the comparative evidence, above all Rwanda's, shows it is attainable in a low-income African state.

For practice, the study offers treasury managers a usable diagnostic: measure utilisation, not installation; audit the seams between systems, where re-entry and fraud concentrate; and treat every workaround as a signal of a design-reality gap to be closed rather than a discipline failure to be deplored.

Future research should pursue what this documentary study could not: primary analysis of system log data to measure utilisation directly; interview-based study of workaround behaviour and incentives within MDAs; quantitative work linking system coverage to audit findings across MDAs and years; comparative study of small post-conflict adopters, Sierra Leone, Liberia, Timor-Leste, Kosovo, as a class; and evaluation of the council integration and AI pilot programmes as they mature.

Two decades ago, Sierra Leone rebuilt a treasury from the ashes of war and, in doing so, built one of the more complete digital financial platforms in its income class. The unfinished business is not digital. It is the older work of making rules bind the powerful, and the system's greatest contribution may be that it now makes every evasion of that work visible, recorded and, eventually, answerable.

➤ *Conflict of Interest Statement*

The authors confirm that this research was designed, conducted, and reported free of any conflict of interest, whether financial or non-financial. No individual or organisation with a commercial interest in the subject of this study provided either author with funding, employment, consultancy payments, shareholdings, honoraria, or fees for expert testimony. The study was undertaken independently; no commercial, institutional, or personal connection influenced the findings, the analysis, or the soundness of the manuscript. Every source of financial support connected with this work is disclosed in full in the acknowledgements. The authors attest that the manuscript represents impartial scholarly enquiry carried out in line with recognised standards of academic integrity and research ethics.

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