

## Information Technology Resource Management Strategies and Organizational Performance in Kenya's HIV Programme

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### Abstract

The expansion of digital health systems has reshaped the operational architecture of HIV service delivery, particularly in donor-funded programmes navigating fiscal transition and performance accountability pressures. While substantial investments have been made in electronic medical records, reporting platforms, and data surveillance systems, limited empirical evidence exists on how the strategic management of these digital resources influences organizational performance. This study examined the effect of Information Technology Resource Management (ITRM) strategies on the performance of donor-funded HIV programmes in Kenya. A cross-sectional mixed-methods design was employed, with quantitative data collected from 285 programme managers and IT personnel across non-governmental implementing organizations, complemented by qualitative insights to contextualize governance practices. Simple linear regression analysis demonstrated a statistically significant positive relationship between ITRM and organizational performance ( $B = 0.4117$ ,  $p < 0.001$ ). The model explained 18% of the variance in performance outcomes ( $R^2 = 0.1800$ ), indicating that IT governance constitutes a meaningful, though not exclusive, determinant within complex health systems. Descriptive findings revealed relative strengths in cybersecurity protocols (mean = 3.51) and automated reporting (mean = 3.38), contrasted by weaker performance in interoperability (mean = 2.76) and continuous IT capacity building (mean = 2.88). The findings suggest that while digital infrastructure is operationally established, governance integration remains uneven. Strengthening interoperability, lifecycle management, and institutional IT capacity may enhance organizational responsiveness as HIV programmes transition toward greater domestic sustainability.

### Key Words

Information Technology Resource Management (ITRM), Donor-Funded HIV Programmes, Resource-Based View (RBV), Organizational Performance, Health Systems Strengthening

### Introduction

Digital transformation has become a fundamental mechanism for strengthening health systems

in low- and middle-income countries, with information and communication technologies increasingly used to improve data management, patient care continuity, and service delivery efficiency across priority health programmes (Awosiku et al., 2025). Within HIV care and treatment, digital health interventions including electronic medical records (EMRs) and interoperable reporting platforms support clinical decision-making, reduce data errors, and can improve the timeliness and completeness of programmatic reporting, which is critical for monitoring progress toward global targets such as the UNAIDS 95–95–95 goals (Kamulegeya et al., 2025; UNAIDS, 2024). Research from sub-Saharan Africa indicates that digital technologies can enhance the delivery of HIV prevention, care, and treatment services by improving access to information, supporting patient follow-up, and facilitating remote monitoring, even as challenges in interoperability and governance persist (Kamulegeya et al., 2025; Mbewe et al., 2025). As global HIV financing shifts toward greater domestic responsibility, donor-funded programmes face intensified performance expectations under resource constraints, making the strategic governance of information technology resources essential for sustaining service quality and organizational effectiveness in evolving funding environments.

Kenya’s HIV response is currently undergoing a structural transition characterized by gradual shifts from heavy external donor financing toward increased domestic resource mobilization and integration within national health systems. This transition has intensified accountability requirements and heightened the need for efficient programmatic oversight, particularly in service delivery, commodity management, and patient retention monitoring (Kazungu & Barasa, 2017; Wamai et al., 2021). Empirical evidence from sub-Saharan Africa shows that funding volatility and donor transitions can disrupt service continuity when health systems lack strong managerial and information governance capacity (Dieleman et al., 2018). In this context, robust digital health information systems, including electronic medical records and national reporting platforms such as DHIS2, are essential for maintaining accurate patient tracking, minimizing data loss, and strengthening supply chain accountability (Karuri et al., 2014). However, research indicates that the performance gains associated with digital infrastructure are contingent upon effective governance structures, interoperability standards, and sustained human resource capacity to manage and utilize these systems strategically (Braa et al., 2007). Without coordinated management and integration, fragmented digital systems can generate inefficiencies, compromise data quality, and undermine clinical decision-making, thereby constraining organizational performance during periods of fiscal transition.

The conceptual foundation of this study is grounded in the Resource-Based View (RBV), which posits that sustained organizational performance derives from resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Within this framework, competitive advantage arises not merely from resource possession but from the organization’s capacity to structure, coordinate, and deploy those resources effectively (Peteraf, 1993). Within public health delivery environments, information technology has evolved from a technical support function to a strategic organizational capability that shapes coordination, accountability, and performance outcomes (Bharadwaj, 2000). Information Technology Resource Management (ITRM), understood as the governance, integration, and alignment of digital systems with organizational processes, represents a higher-order capability that can enhance transparency, adaptive responsiveness, and operational efficiency. Strategic information systems research demonstrates that performance effects emerge not from technology acquisition alone but from managerial alignment, process integration, and

institutional learning mechanisms (Melville et al., 2004; Sabherwal & Jeyaraj, 2015). However, within donor-funded public health programmes, empirical evidence remains limited regarding how structured IT governance, rather than infrastructure procurement, contributes to performance outcomes during periods of financing transition. This study therefore applies the RBV lens to examine whether the orchestration of IT resources functions as a strategic capability shaping organizational performance in Kenya's HIV programmes.

Recent empirical syntheses in digital health reveal persistent ambiguity regarding the magnitude and mechanisms through which health information systems influence organizational performance. Although systematic reviews demonstrate that digital health interventions can improve data quality, reporting timeliness, and clinical coordination, the performance effects remain highly context-dependent and uneven across settings (Agarwal et al., 2016; Braa et al., 2007). Implementation studies in sub-Saharan Africa similarly show that electronic medical record systems and routine health information platforms enhance monitoring and accountability; however, these analyses frequently focus on system adoption and data completeness rather than on how managerial governance structures translate digital infrastructure into measurable organizational outcomes (Mutale et al., 2013; Oluoch et al., 2012). Moreover, macro-level studies examining ICT diffusion often conceptualize technology as an environmental or structural input without disentangling the internal resource management practices that determine its effective deployment (Melville et al., 2004; Sabherwal & Jeyaraj, 2015). Consequently, while the benefits of digital tools are widely acknowledged, limited empirical work isolates the strategic governance of information technology resources as a distinct capability influencing performance within donor-funded health systems. This gap obscures the specific mechanisms through which IT resource management contributes to efficiency, resilience, and service continuity in HIV programmes undergoing financing transitions.

The management of information technology resources extends beyond the acquisition of hardware and software to include the governance structures, organizational routines, and alignment mechanisms that determine how digital systems are embedded within institutional processes. Strategic information systems research shows that performance improvements from technology investments arise not from deployment alone but from the integration of digital infrastructure with managerial practices, decision making workflows, and organizational learning processes (Melville et al., 2004; Sabherwal & Jeyaraj, 2015). In complex service delivery environments such as HIV programmes, digital platforms operate as interconnected systems that support clinical monitoring, commodity tracking, and performance reporting, which requires coordinated governance rather than isolated implementation (Braa et al., 2007; Mutale et al., 2013). Within the Kenyan HIV response, where multiple implementing partners operate across shared geographic areas, interoperability, standardized reporting, and structured maintenance of digital tools are necessary to reduce data fragmentation and maintain programme coherence (Karuri et al., 2014). Empirical evidence further indicates that without sustained oversight, continuous capacity development, and systematic technical support, digital systems may not translate into measurable organizational improvements (Oluoch et al., 2012). Accordingly, this study moves beyond documenting the presence of digital technologies to examine how the governance and coordination of information technology resources influence organizational performance within donor funded HIV programmes.

Despite growing recognition of the importance of digital health systems in strengthening

service delivery, limited empirical evidence isolates the specific contribution of information technology resource management to organizational performance within donor funded HIV programmes in Kenya. Much of the existing literature emphasizes technology adoption, infrastructure expansion, or pilot implementation outcomes, with comparatively less attention to how structured governance and strategic coordination of IT resources translate into measurable performance effects. This leaves an important methodological gap in which the management of information technology remains underexamined as a distinct organizational capability. To address this gap, the present study shifts the analytical focus from the presence of digital tools to the governance and orchestration of those tools within institutional processes. Using quantitative modeling to estimate the magnitude and significance of this relationship, the study provides empirical evidence on whether structured information technology resource management is associated with improved organizational performance. Accordingly, this research examines the effect of Information Technology Resource Management Strategies on Organizational Performance in donor funded HIV programmes in Kenya.

## **Materials and Methods**

### **Research Design Rationale and Philosophical Alignment**

This study employed a cross-sectional research design within a mixed methods framework. A cross-sectional design is appropriate when data are collected at a single point in time to examine relationships among variables without manipulating study conditions (Creswell & Creswell, 2018). The correlational approach allows for the assessment of the strength and direction of association between independent and dependent variables using statistical modeling techniques (Bryman, 2016). In this study, the design enabled the examination of the relationship between Information Technology Resource Management and Organizational Performance across donor funded HIV programmes operating in Kenya. The research was situated within a pragmatic mixed methods paradigm, which integrates quantitative and qualitative approaches to enhance the comprehensiveness and validity of findings (Tashakkori & Teddlie, 2021). Mixed methods research is particularly appropriate when complex organizational phenomena require both numerical measurement and contextual interpretation (Creswell & Plano Clark, 2018). The quantitative component facilitated hypothesis testing through regression analysis, while the qualitative component, implemented through key informant interviews, provided contextual insights into governance practices, institutional processes, and operational constraints. This integration aligns with triangulation principles, which strengthen construct validity by corroborating evidence from multiple data sources (Fetters et al., 2013). By combining statistical analysis with qualitative interpretation, the study enhances explanatory depth and reduces the limitations associated with relying exclusively on a single methodological approach.

### **Study Setting and Target Population**

The study was conducted within donor funded HIV programmes implemented by non-governmental organizations at the facility level across multiple counties in Kenya. Kenya has one of the largest HIV treatment programmes in sub-Saharan Africa and continues to rely substantially on external financing mechanisms such as the United States President's Emergency Plan for AIDS Relief and the Global Fund, even as the country increases domestic health expenditure commitments (Odhiambo-Abuya & Owuor, 2025; Dieleman et al., 2018). This evolving financing structure has placed increased emphasis on programme accountability,

reporting precision, and service continuity at the implementing partner level. HIV service delivery in Kenya operates through a multi partner model in which international organizations, local non-governmental organizations, and community-based organizations collaborate within national reporting frameworks such as DHIS2 and national electronic medical record systems (Karuri et al., 2014). The target population comprised 4488 personnel working within these implementing organizations, including programme coordinators, monitoring and evaluation officers, health administrative officers, information technology personnel, and frontline service providers. Inclusion of multiple cadres was necessary to capture diverse perspectives on how information technology resources are governed, maintained, and utilized across organizational hierarchies.

### **Sampling Logic, Stratification, and Inference**

Sampling refers to the process of selecting a subset of individuals from a defined population in order to make statistical inferences about that population (Bryman, 2016). Appropriate sampling enhances representativeness, reduces bias, and improves the generalizability of findings within the defined study frame. Sample size determination is a critical methodological step that ensures sufficient statistical power to detect meaningful relationships while maintaining acceptable margins of sampling error (Kothari, 2004). In this study, the total target population consisted of 4488 eligible personnel drawn from donor funded HIV implementing organizations. To determine an appropriate sample size for a finite population, the Yamane (1967) formula was applied:

$$n = N / [1 + N(e^2)] \quad (1)$$

where  $n$  denotes the required sample size,  $N$  represents the population size, and  $e$  indicates the margin of error. Using a margin of error of 0.05, corresponding to a 95 percent confidence level commonly applied in social science research (Kothari, 2004; Okello, 2022), the formula yielded a required sample of 404 respondents. A total of 285 valid responses were ultimately obtained and included in the analysis. To enhance representativeness, proportionate stratified random sampling was employed. Stratified sampling involves dividing the population into homogeneous subgroups and drawing samples proportionally from each stratum to ensure adequate representation across key organizational categories (Bryman, 2016).

### **Measurement Instruments and Index Construction**

Data were collected using a structured self-administered questionnaire designed to operationalize both the independent and dependent variables of the study. Information Technology Resource Management was measured using fifteen Likert scale items scored on a five-point scale ranging from one representing strongly disagree to five representing strongly agree. The items captured two conceptual domains: core digital systems and data use practices, and digital infrastructure with user support capacity. Organizational Performance was measured as a multidimensional construct reflecting operational efficiency, continuity of service delivery, and institutional responsiveness, consistent with established approaches in strategic management research that employ perceptual performance indicators where objective measures are not uniformly available (Venkatraman & Ramanujam, 1986). Composite indices for both constructs were computed using mean aggregation across respective items, an approach that preserves the original scale metric and enhances interpretability in regression analysis (Hair et al., 2010). Internal consistency reliability was assessed using Cronbach alpha, which evaluates the extent to which scale items measure a common underlying construct (Tavakol & Dennick,

2011). The alpha coefficient of 0.941 for the Information Technology Resource Management scale indicates excellent reliability and strong inter-item coherence.

### **Analytical Procedures**

Data were analyzed using the Statistical Package for Social Sciences Version 29. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize respondent characteristics and assess central tendencies of study variables prior to inferential analysis. Inferential analysis was conducted using simple linear regression to examine the effect of Information Technology Resource Management on Organizational Performance. Linear regression is appropriate when assessing the magnitude and direction of association between a continuous independent variable and a continuous dependent variable under the assumption of linearity (Hair et al., 2010).

The regression model was specified as:

$$Y = \beta_0 + \beta_1 X + \varepsilon \quad (2)$$

Where:

Y = Organizational Performance

X = Information Technology Resource Management

$\beta_0$  = Intercept

$\beta_1$  = Regression Coefficient

$\varepsilon$  = Error term

### **Assumption Testing**

Prior to estimating the regression model, diagnostic procedures were conducted to evaluate compliance with the core assumptions of linear regression. Normality of residuals was assessed using the Shapiro Wilk test and inspection of normal probability plots to determine whether the error terms approximated a normal distribution. Linearity between Information Technology Resource Management and Organizational Performance was examined through scatter plot analysis to confirm that a linear specification was appropriate. Homoscedasticity was tested using the Breusch Pagan and White tests to verify that the variance of residuals remained constant across levels of the predictor variable. Independence of errors was evaluated using the Durbin Watson statistic to ensure the absence of serial correlation in the residuals. Multicollinearity was assessed using the Variance Inflation Factor, which yielded a value of 1.00, indicating no collinearity concerns. Collectively, these diagnostic assessments support the validity and reliability of the regression estimates.

## **Results**

The empirical findings are presented in two stages. The first stage summarizes the distribution and central tendencies of the study variables using descriptive statistics. The second stage

evaluates the hypothesized relationship between Information Technology Resource Management and Organizational Performance through regression analysis.

**Descriptive Statistics**

Descriptive analysis was undertaken to establish the general profile of Information Technology Resource Management practices and Organizational Performance across the sampled donor funded HIV programmes. Information Technology Resource Management was measured using fifteen indicators reflecting core digital systems and digital infrastructure support mechanisms. Table 1 presents detailed descriptive statistics for each of the fifteen Information Technology Resource Management indicators alongside the composite Organizational Performance measure. The table reports response distributions, mean scores, and standard deviations to provide a comprehensive overview of central tendency and dispersion across the measured constructs.

**Table 1**  
Descriptive Statistics of Information Technology Resource Management

<b>Sub Variable</b>	<b>Statement on Information Technology Management Strategies</b>	<b>Mean</b>	<b>SD</b>
<b>Ease of Use</b>	The IT systems used in the HIV programme are intuitive and require minimal effort to learn and operate.	3.6	1.237
	Staff receive structured training and ongoing user support to enable effective system use in daily duties.	3.298	1.247
	Users can locate and retrieve required information within the systems quickly and without frustration.	3.719	1.195
	Responsive, qualified technical support is consistently available to resolve user issues in a timely manner.	2.379	1.263
	The systems are reliable with rare unplanned outages, enabling uninterrupted service delivery tasks.	2.34	1.199
<b>Functionality (Meets User Needs)</b>	System features adequately support programme functions and routine reporting requirements.	2.663	1.28
	System performance is efficient with negligible lag, allowing uninterrupted task execution.	3.27	1.256
	Use of IT systems has streamlined operations, increased automation, and improved staff productivity.	2.853	1.289
	Functional enhancements are reviewed and implemented periodically to align with evolving programme needs.	3.042	1.35
	System use has improved data completeness, accuracy, and traceability in routine programme activities.	3.639	1.169
<b>IT System Integration</b>	Programme IT systems interoperate with national and county health information platforms (e.g., KHIS/DHIS2, EMR) to enable secure data exchange.	3.618	1.249
	Staff can move or synchronize data across approved platforms without compatibility barriers or data loss.	2.975	1.312
	New technologies are integrated using documented procedures that safeguard compatibility and business	3.614	1.204

continuity.		
Systems function smoothly across commonly used hardware and are interoperable with standard software environments.	2.814	1.385
Integration has improved coordination, streamlined communication, and reduced duplication of effort across programme units.	2.323	1.284

The descriptive findings indicate a differentiated maturity profile across the three sub variables of Information Technology Resource Management, reflecting both institutional strengths and structural gaps. Within the Ease of Use dimension, respondents reported relatively favorable perceptions regarding system intuitiveness (M = 3.60, SD = 1.24) and the ability to retrieve information efficiently (M = 3.72, SD = 1.20), suggesting that core interface design and navigation features are generally functional. However, lower ratings for responsiveness of technical support (M = 2.38, SD = 1.26) and system reliability with minimal outages (M = 2.34, SD = 1.20) indicate operational instability that may constrain sustained utilization. In the Functionality domain, improvements in data completeness and traceability (M = 3.64, SD = 1.17) and acceptable system performance efficiency (M = 3.27, SD = 1.26) were acknowledged, yet perceptions that systems fully support routine reporting requirements (M = 2.66, SD = 1.28) or streamline operations (M = 2.85, SD = 1.29) remained moderate, pointing to partial functional optimization. The IT System Integration dimension similarly reflects formal compliance with national platforms (M = 3.62, SD = 1.25) and documented integration procedures (M = 3.61, SD = 1.20), but weaker ratings for seamless synchronization (M = 2.98, SD = 1.31) and coordination across programme units (M = 2.32, SD = 1.28) suggest persistent fragmentation. Overall, while digital systems are embedded within programme structures, variability in reliability, integration depth, and support capacity underscores an uneven digital governance landscape across implementing organizations.

**Regression Model Summary**

The regression model summary evaluates the overall goodness of fit of the linear relationship between Information Technology Resource Management and Organizational Performance. As presented in Table 2, the model yielded a correlation coefficient of R = 0.4243, indicating a positive association between the predictor and outcome variables. This value reflects a moderate relationship in the context of organizational research, where performance outcomes are typically influenced by multiple interacting factors.

**Table 2**  
Regression Model Summary

Model	R	R Square	Adjusted R Square	Standard Error
1	0.4243	0.1800	0.1771	0.8154

The coefficient of determination ( $R^2 = 0.1800$ ) indicates that Information Technology Resource Management accounts for 18 percent of the variance in Organizational Performance. While a substantial proportion of performance variation remains attributable to other organizational, financial, and contextual determinants, an explained variance of 18 percent is meaningful within health delivery environments where performance is multifactorial. The adjusted  $R^2$  value ( $\approx 0.1771$ ) closely approximates the  $R^2$  estimate, suggesting minimal shrinkage and indicating

that the model maintains explanatory stability after adjusting for sample size and model complexity. The findings indicate that Information Technology Resource Management demonstrates measurable explanatory capacity and warrants further inferential examination through analysis of variance and coefficient estimation.

**ANOVA Results**

The analysis of variance evaluates whether the regression model provides a statistically significant improvement in predicting Organizational Performance compared to a model with no predictors. It assesses the null hypothesis that the regression coefficient for Information Technology Resource Management is equal to zero, meaning that the predictor does not explain variation in the dependent variable.

**Table 3**  
ANOVA for Simple Linear Regression

<i>Source of Variation</i>	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<b>Regression</b>	1	41.3017	41.3017	62.1309	6.9884E-14
<b>Residual</b>	283	188.1252	0.6648		
<b>Total</b>	284	229.4270			

As presented in Table 3, the regression model yielded an F statistic of 62.13 with 1 and 283 degrees of freedom, which was statistically significant ( $p < .001$ ). The regression sum of squares ( $SS = 41.30$ ) represents the proportion of variation in Organizational Performance explained by Information Technology Resource Management, while the residual sum of squares ( $SS = 188.13$ ) reflects unexplained variance. The magnitude of the F statistic indicates that the explained variance attributable to Information Technology Resource Management is substantially greater than would be expected by random fluctuation alone. The statistically significant result provides strong evidence against the null hypothesis, confirming that the regression model offers meaningful explanatory value. This finding indicates that Information Technology Resource Management contributes significantly to predicting Organizational Performance within donor funded HIV programmes, thereby justifying further examination of the direction and magnitude of the regression coefficient.

**Regression Coefficients**

The regression coefficient analysis clarifies the direction, magnitude, and statistical strength of the relationship between Information Technology Resource Management and Organizational Performance. While the model summary and analysis of variance established overall model significance, the coefficient estimates provide substantive insight into how changes in digital governance maturity translate into performance variation across donor funded HIV programmes.

**Table 4**  
Regression Coefficients

<b>Model</b>	<b>Term</b>	<b>Est ima te</b>	<b>Std _Er ror</b>	<b>t_v alu e</b>	<b>p_va lue</b>
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*Njeru et.al.*

<b>Organization Performance ~ Information Technology Resource Management Strategies</b>	Intercept	1.7	0.16	10.	3.395
		151	72	25	05E- 69 21
	Information Technology	0.4	0.05	7.8	6.988
	Resource Management Strategies	117	22	82	4E- 3 14

Based on the estimated unstandardized coefficients, the fitted regression equation is expressed as:

$$\text{Organizational Performance} = 1.7151 + 0.4117(\text{Information Technology Resource Management})$$

The unstandardized slope coefficient for Information Technology Resource Management was positive and statistically significant ( $B_1 = 0.4117$ ,  $SE = 0.0522$ ,  $t = 7.88$ ,  $p < .001$ ), indicating that a one unit increase in the Information Technology Resource Management is associated with an estimated 0.41 unit increase in Organizational Performance. The magnitude of the  $t$  value demonstrates that the coefficient differs substantially from zero and that the observed association is unlikely to have arisen from sampling variability. The intercept was also statistically significant ( $B_0 = 1.7151$ ,  $SE = 0.1672$ ,  $t = 10.26$ ,  $p < .001$ ), establishing the baseline predicted performance level when the predictor is held constant. Although performance is influenced by multiple organizational determinants, the size and significance of the regression coefficient indicate that structured digital governance constitutes a measurable and independent predictor. These findings suggest that improvements in system usability, functional alignment, infrastructure support, and integration capacity are associated with enhanced efficiency and responsiveness within donor funded HIV programmes.

The qualitative findings provide strong explanatory depth to the statistically significant relationship observed between Information Technology Resource Management and organizational performance, illustrating the mechanisms through which digital governance translates into measurable outcomes. Across implementing organizations, respondents consistently emphasized that electronic medical records, DHIS2 reporting platforms, and performance dashboards have fundamentally reconfigured programme management from reactive reporting to proactive, data-driven decision making. These systems were described as enabling real-time patient tracking, rapid identification of missed appointments, and continuous monitoring of viral load outcomes, thereby strengthening both clinical management and programme oversight. This qualitative evidence reinforces the regression results by demonstrating that improvements in digital governance do not operate in abstraction but function through concrete operational pathways that enhance efficiency, coordination, and responsiveness. In this sense, Information Technology Resource Management emerges not merely as a technical function but as an enabling infrastructure that amplifies the effectiveness of other organizational resources, thereby explaining its significant predictive effect on performance.

*“Before EMRs and DHIS2, we used to spend days compiling reports from paper registers. Now, with just a few clicks, we can generate cohort reports, see who has missed appointments, and send lists to the defaulter tracing team. It has really changed how we manage the programme.”*

*“The EMR helps us flag clients who are due for viral load or who have missed their booking. We can then send reminders through peer educators. Our reporting to the county is also more timely because DHIS2 is updated on a schedule and everyone can see the gaps quickly.”*

*“IT systems are what allow us to convert resources into results. Without DHIS2 and EMRs, you are basically flying blind. With them, you can see where the bottlenecks are, which counties are lagging, and which facilities need targeted support.”*

## **Discussion**

The findings of this study demonstrate that Information Technology Resource Management is positively and significantly associated with Organizational Performance in donor funded HIV programmes in Kenya. The regression results indicate that improvements in digital governance maturity correspond with measurable increases in institutional performance outcomes, with Information Technology Resource Management explaining approximately 18 percent of the variance in Organizational Performance. Within complex health delivery systems characterized by multiple interacting determinants, this level of explanatory contribution is substantively meaningful. The results reinforce the central proposition advanced in the introduction that digital systems generate organizational value when they are strategically governed, integrated, and aligned with operational processes rather than treated as standalone technical assets.

These findings are consistent with the strategic information systems literature, which argues that performance gains emerge from managerial orchestration and institutional alignment rather than technology acquisition alone. The positive and statistically significant coefficient observed in this study aligns with prior research demonstrating that health information systems contribute to improved planning, monitoring, and accountability when embedded within structured governance routines. In this regard, the findings support the Resource Based View by illustrating that digital governance operates as an organizational capability whose value lies in its coordinated deployment. The results extend this theoretical perspective into the context of donor funded HIV programming, where digital systems play a central role in reporting, service continuity, and performance benchmarking.

The descriptive patterns further illuminate the mechanism underlying the regression relationship. Higher mean scores for system usability and data traceability indicate that core digital functions are operational and embedded within routine workflows. However, lower scores for system reliability, interoperability across platforms, and continuous capacity development reveal uneven digital maturity across implementation domains. This dual pattern mirrors findings from previous Kenyan and regional studies that document widespread adoption of electronic medical records and national reporting platforms alongside persistent challenges related to system fragmentation, downtime, and inconsistent data synchronization. The comparatively weaker perceptions of cross platform integration and coordination suggest that formal interoperability with national systems does not automatically translate into seamless operational integration at the organizational level.

The moderate explanatory strength of the model also aligns with existing literature cautioning against technological determinism. Although digital governance contributes meaningfully to performance, the 18 percent variance explained indicates that technology management is one

component within a broader ecosystem that includes financial stability, human resource capacity, supply chain reliability, and policy alignment. Prior studies have similarly observed that digital systems amplify performance when supported by institutional routines, training structures, and responsive oversight mechanisms. The present findings therefore reinforce the view that digital infrastructure provides enabling capacity rather than self-executing performance gains.

From a managerial perspective, the evidence suggests that performance improvements are likely to be maximized when investment emphasis shifts from procurement toward lifecycle management, interoperability strengthening, and sustained user support. The relatively lower descriptive scores for technical responsiveness and cross unit coordination highlight potential leakage points where performance benefits may be constrained. In the context of evolving donor financing landscapes, strengthening governance structures around digital systems may be critical for maintaining service continuity and institutional responsiveness.

This study contributes empirical evidence to the growing body of research examining digital transformation in health systems. By demonstrating a measurable association between Information Technology Resource Management and Organizational Performance, the findings support the argument that structured digital governance functions as a substantive organizational capability within donor funded HIV programs. The results further indicate that while foundational systems are present, performance gains depend on the depth of integration, reliability, and institutional alignment achieved across implementing partners. Future research may explore interaction effects between digital governance, human resource practices, and financing transitions to further clarify the pathways through which digital management shapes institutional performance in resource constrained health systems.

## **Conclusion**

### **Summary**

This study set out to determine whether Information Technology Resource Management contributes meaningfully to Organizational Performance in donor funded HIV programmes in Kenya. The findings provide clear empirical confirmation that it does. The regression analysis demonstrates that structured digital governance is not peripheral to institutional outcomes but constitutes a measurable predictor of performance variation. In a service environment characterized by financial uncertainty, reporting demands, and multi partner coordination, the management of digital systems emerges as a substantive operational capability. The evidence indicates that programmes with stronger digital governance practices are better positioned to achieve efficiency, continuity, and institutional responsiveness.

The results also clarify the mechanism through which digital systems influence performance. The positive association observed is not simply a function of system presence but reflects the degree to which usability, functionality, integration, and support structures are embedded within organizational routines. At the same time, the moderate variance explained by the model confirms that digital governance is influential but not singularly determinative. Organizational performance remains shaped by broader structural conditions, yet the contribution of Information Technology Resource Management is sufficiently strong to warrant strategic attention within programme management frameworks.

Importantly, the descriptive findings reveal that while foundational systems are operational, fragmentation in interoperability, reliability, and capacity development limits the full realization of digital value. The central conclusion of this study is therefore twofold: digital systems matter, and how they are governed matters even more. Sustained performance in Kenya's HIV programmes will depend less on expanding technological infrastructure and more on strengthening the institutional architecture that coordinates, integrates, and maintains these systems. In this regard, Information Technology Resource Management should be treated as a core component of organizational strategy within evolving health financing landscapes.

### **Recommendation**

The findings of this study suggest that strengthening Information Technology Resource Management should become a strategic priority within donor funded HIV programmes in Kenya, particularly as financing landscapes evolve. Rather than focusing primarily on procurement or compliance driven digital implementation, policy makers and programme managers should prioritize interoperability across systems, standardized data exchange protocols, and coordinated lifecycle management to reduce fragmentation and enhance institutional coherence. Sustained investment in continuous technical capacity development is equally critical to ensure that digital infrastructure is supported by competent users and responsive governance structures. For the research community, future inquiry should examine additional organizational determinants such as digital leadership, institutional culture, and managerial commitment to data use as potential moderating factors influencing performance outcomes. Longitudinal designs would further clarify how digital governance maturity evolves over time and how its contribution to organizational performance shifts under changing funding and policy conditions.

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### **Conflict of Interest Statement**

The authors declare no conflict of interest.

### **Data Availability Statement**

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

### **Author Contributions:**

We the authors, declare that each author contributed significantly to the conception, research, writing and preparation of the final work.

### **Ethical Approval and Research License**

Ethical approval for this study was obtained from United States International University-Africa Research Ethics Committee (REF: USIU-A/ISERC/US987-2025) and NACOSTI (License No: NACOSTI/P/25/4177314).

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