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Evaluating the contribution of management information systems to organizational performance in Higher Education Institutions in Uganda: Evidence from Kampala International University

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Abstract

This study evaluates the contribution of Management Information Systems (MIS) to organizational performance in higher education institutions, with specific reference to Kampala International University, Uganda. The research examined the influence of MIS on three key dimensions of organizational performance: organizational survival, organizational effectiveness, and service quality. A descriptive cross-sectional survey design with a mixed-methods approach was adopted. Data were collected from 168 valid respondents comprising administrative staff and postgraduate students using a structured questionnaire. Descriptive statistics and multiple regression analysis were employed to analyze the data. The findings revealed that MIS has a significant positive effect on organizational performance. Specifically, MIS explained 80.6% of the variation in organizational survival ($R^2 = 0.806$), 81.5% in organizational effectiveness ($R^2 = 0.815$), and 82.4% in service quality ($R^2 = 0.824$), all statistically significant at $p < 0.05$. The results indicate that effective MIS enhances decision-making, coordination, and service delivery within the institution. The study concludes that strengthening MIS infrastructure, integration, and staff capacity is essential for improving institutional performance and sustaining competitiveness in higher education.

Keywords: Management Information Systems, Organizational Performance, Organizational Effectiveness, Service Quality, Higher Education Institutions, Uganda.

1. Introduction

Management Information Systems (MIS) integrate technology, processes, and people to support decision-making, planning, and control in organizations (Laudon & Laudon, 2017; Lahar et al., 2015). Beyond basic data processing, MIS enhances efficiency and performance by providing timely, accurate

information (Melville et al., 2004). Their evolution began with early computing for transactions like payroll and accounting, evolving into sophisticated systems amid technological advances (Lee, 2007). Pre-digital eras relied on manual records, but ICT growth has amplified MIS's role amid business complexity (Zayed & Sinha, 2019). Defined as

interrelated components collecting, processing, storing, and distributing data for decisions and coordination (Petter et al., 2013), MIS blends management, IT, and operations research (Palvia et al., 2003). Studies confirm MIS boosts organizational performance through resource capabilities (Ravichandran & Lertwongsatien, 2005; Tashtoush, 2021). This study adopts a resource-based perspective, positing MIS as key assets driving competitive advantage (Bharadwaj, 2000; Chapman & Kihn, 2008). Literature underscores MIS's impact: In universities, it aids decision-making (Ajayi & Omirin, 2007; Jehad et al., 2009; Samer & Rawan, 2018); in public sectors, it improves efficiency (AL-Gharaibeh & Malkawi, 2013; Altaany, 2013); and in firms, it correlates with performance (Khresat, 2015; Omiunu, 2015). Information Systems (IS) deliver right data at the right time (Radovic-Markovic & Omolaja, 2009), with success hinging on quality (Narasimhaiah et al., 2010). MIS, as an IS subset, optimizes higher education operations (Antono et al., 2018). Organizational performance gauges strategy execution, effectiveness, and sustainability (Almatrooshi et al., 2016).

Determinants include IS resources and capabilities (Furneaux & Wade, 2010). In Uganda, the National Council for Higher Education (NCHE) regulates universities, emphasizing standards amid private sector autonomy. Competitiveness relies on performance. Focusing on Kampala International University (KIU), a top private institution (Webometrics, 2020, 2021), challenges like delayed complaints, missing results, and communication gaps reveal gaps. MIS deployment could enhance effectiveness, mirroring findings in similar contexts (Ajayi & Omirin, 2007).

1.1 Statement of the Problem

Despite the widely acknowledged potential of Management Information Systems (MIS) to enhance decision-making, operational

efficiency, and strategic alignment (Melville, Kraemer, & Gurbaxani, 2004; Bharadwaj, 2000; Laudon & Laudon, 2017), empirical evidence regarding their tangible contribution to organizational performance within Sub-Saharan African higher education institutions remains fragmented and contextually limited. While prior studies have examined MIS efficacy in governmental sectors (AL-Gharaibeh & Malkawi, 2013; Altaany, 2013), Nigerian universities (Ajayi & Omirin, 2007), and Jordanian academic settings (Jehad, Jadara, & Fayez, 2009; Samer & Rawan, 2018), there is a conspicuous scarcity of rigorous, institution-specific investigations focusing on private universities in Uganda. At Kampala International University (KIU), significant investments have been made in digital infrastructure and academic management platforms; however, persistent challenges, including data fragmentation, inconsistent system utilization across departments, and ambiguous linkages between MIS deployment and key performance indicators such as graduate employability, research output, and administrative responsiveness, suggest a critical implementation, impact gap (Petter, DeLone, & McLean, 2013; Narasimhaiah, Somers, & Betty, 2010). Without empirically grounded insights into how MIS capabilities (technical, human, and organizational) mediate performance outcomes in this specific context (Tashtoush, 2021; Almatrooshi et al., 2016), university leadership risks misallocating resources and overlooking strategic leverage points for digital transformation. Consequently, this study addresses the problem of insufficient evidence on the measurable contribution of MIS to organizational performance at KIU, aiming to generate contextually relevant knowledge that informs evidence-based policy, optimizes technology investment, and advances scholarly discourse on ICT-enabled institutional effectiveness in emerging higher education ecosystems.

1.2 Objectives

- i. To identify the effect of the management information system on organizational survival in Kampala International University
- ii. To identify the effect of the management information system on organizational effectiveness
- iii. To identify the effect of the management information system on organizational service quality

1.3 Conceptual Framework

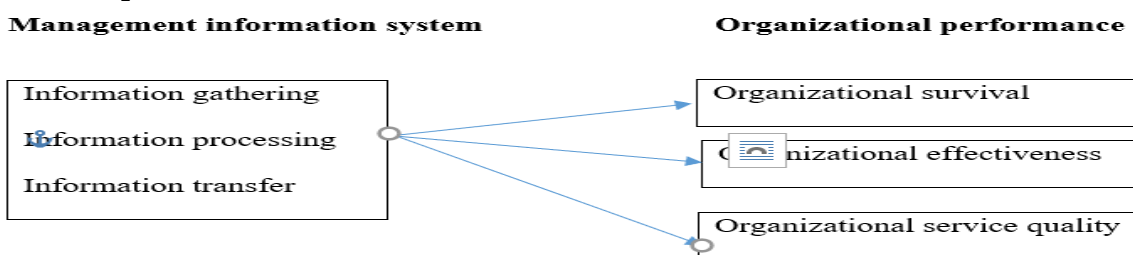


Figure 1. The Relationship between MIS Capabilities and Organizational Performance Dimensions

2. Literature Review

Management Information Systems (MIS) have emerged as strategic enablers of organizational performance across sectors, with growing empirical attention in higher education contexts. The literature consistently positions MIS as a critical infrastructure for enhancing organizational survival, effectiveness, and service quality, three interdependent dimensions that collectively define institutional sustainability and competitiveness (Almatrooshi et al., 2016; Melville, Kraemer, & Gurbaxani, 2004). MIS contributes to institutional longevity by facilitating evidence-based strategic adaptation. As O'Brien (1999) and Laudon and Laudon (2017) assert, MIS enables real-time monitoring of internal operations and external environmental shifts, allowing institutions to anticipate disruptions and recalibrate strategies proactively. In higher education, where enrollment volatility, funding constraints, and regulatory changes pose existential threats, MIS-supported data analytics enhance scenario planning and risk

1.4 Hypothesis

H₀₁ Management information system does not have a significant effect on organizational survival.

H₀₂ Management information system does not have a significant effect on organizational effectiveness.

H₀₃ Management information system does not have a significant effect on organizational service quality

mitigation (Ajayi & Omirin, 2007). However, most survival-focused studies originate from corporate or public-sector contexts (AL-Gharaibeh & Malkawi, 2013; Altaany, 2013), with limited empirical validation in private African universities, a gap this study addresses.

Effectiveness hinges on the alignment of information flows with decision-making cycles. Rahman (2014) and Savoie (2016) emphasize that MIS optimizes the "right information–right person–right time" paradigm, reducing informational asymmetry and enhancing coordination across academic and administrative units. Laudon and Laudon (2017) further link MIS to improved planning, monitoring, and evaluation capabilities, critical for accreditation, resource allocation, and performance benchmarking in universities. Yet, effectiveness metrics remain inconsistently operationalized; while some studies use financial or administrative indicators (Jehad et al., 2009), others prioritize academic outcomes (Samer & Rawan, 2018). This study adopts a multi-dimensional effectiveness framework (Almatrooshi et al.,

2016) to capture both operational and strategic performance at Kampala International University (KIU).

Service quality in higher education is increasingly mediated by digital interfaces. Lapiedra and Devece (2012) and O'Brien (1999) note that MIS reduces processing errors, accelerates service delivery (e.g., registration, transcript issuance), and enhances stakeholder communication. Laudon and Laudon (2017) extend this by highlighting how integrated systems foster transparency and responsiveness, key drivers of student and staff satisfaction. Empirical work by Antono et al. (2018) and Soyemi et al. (2014) demonstrates measurable gains in service efficiency following MIS adoption. Nevertheless, few studies examine how system quality, information quality, and service quality (DeLone & McLean, 2003; Petter, DeLone, & McLean, 2013) interact within resource-constrained university settings, a theoretical nuance this research explores.

2.1 Gaps and Conceptual Integration

While the reviewed literature establishes a robust theoretical foundation linking Management Information Systems to organizational performance, three critical contextual and methodological gaps limit its applicability to private higher education institutions in East Africa: first, a pronounced geographic bias, with empirical evidence predominantly drawn from Jordanian, Nigerian, and developed-economy contexts, thereby constraining generalizability to Uganda's unique institutional and regulatory environment (Ajayi & Omirin, 2007; Jihad et al., 2009; AL-Gharaibeh & Malkawi, 2013); second, measurement heterogeneity, wherein inconsistent operationalization of "organizational performance", spanning financial, administrative, academic, and service-quality indicators, impedes cross-study comparison and cumulative knowledge building (Almatrooshi et al., 2016; Petter,

DeLone, & McLean, 2013); and third, an implementation–impact disconnect, as few studies empirically examine how the interplay of technical, human, and organizational MIS capabilities translates into tangible performance outcomes in resource-constrained university settings (Tashtoush, 2021; Narasimhaiah, Somers, & Betty, 2010). To address these gaps, this study integrates the Resource-Based View (Bharadwaj, 2000; Ravichandran & Lertwongsatien, 2005) with the DeLone & McLean IS Success Model (Petter et al., 2013) to develop a context-sensitive analytical framework that explicitly links MIS capabilities to the tripartite performance dimensions, organizational survival, effectiveness, and service quality, at Kampala International University.

3. Methodology

This study employed a descriptive cross-sectional survey design with a convergent mixed-methods approach to examine the contribution of Management Information Systems (MIS) to organizational performance at Kampala International University (KIU). A sample of 183 respondents was drawn from a target population of 336 administrative staff and postgraduate students using Slovin's formula ($e = 0.05$); administrative staff ($n = 56$) were selected via convenience sampling, while postgraduate students ($n = 127$) were selected through simple random sampling to enhance representativeness. Primary data were collected using a structured questionnaire comprising 30 Likert-scale items (1 = Strongly Disagree to 5 = Strongly Agree) measuring MIS capabilities (information gathering, processing, transfer) and organizational performance dimensions (survival, effectiveness, service quality). Instrument validity was established through expert review (Content Validity Index = 1.0), and reliability was confirmed via Cronbach's alpha ($\alpha = 0.82$; subscales: 0.76–0.89), exceeding the 0.70 threshold for internal consistency (Mugenda & Mugenda, 1999). Ethical clearance was

obtained from the University's Directorate of Higher Degrees, with assurances of confidentiality and voluntary participation. Data were analyzed using descriptive statistics and multiple regression analysis ($\alpha = 0.05$) to test hypothesized relationships, while qualitative responses were thematically coded to contextualize quantitative findings. This methodological triangulation strengthens internal validity and supports robust, context-sensitive inferences regarding MIS, performance linkages in East African higher education.

4. Findings

N = 168 respondents

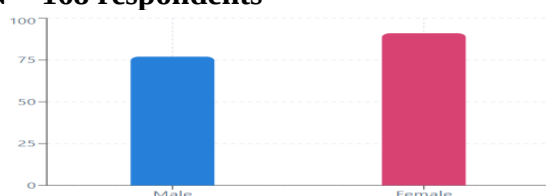


Figure 2: Gender Distribution

Table 1: Response Rate of the Respondents

Gender	Frequency	Percentage
Male	77	45.8%
Female	91	54.2%
Total	168	100%

Source: Field Survey, 2026

The results indicate that female respondents constituted 54.2% of the sample while males represented 45.8%. This suggests that both genders were fairly represented in the study, although females slightly dominated the sample.

4.2 Staff vs Students

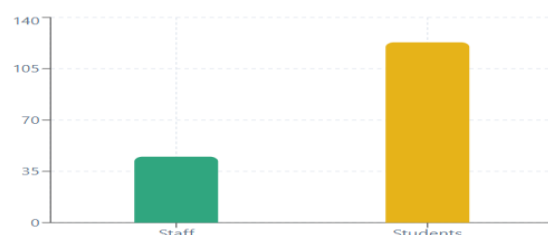


Figure 3: Status of Respondents

4.1 Response Rate

A total of 183 questionnaires were distributed to the targeted respondents. Out of these, 12 questionnaires were not returned, while 3 questionnaires were incomplete and therefore excluded from analysis. Consequently, 168 questionnaires were considered valid for analysis, representing a response rate of 91.8%. This response rate is considered adequate for statistical analysis because it exceeds the minimum acceptable threshold of 70% for survey-based studies. Therefore, the data collected was sufficient to support the study findings

Table 2: Status of Respondents

Status	Frequency	Percentage
Staff	45	26.8%
Students	123	73.2%
Total	168	100%

Source: Field Survey, 2026

The results show that 73.2% of the respondents were students while 26.8% were staff members. The dominance of student respondents is important because students are the primary consumers of university services and are therefore better positioned to assess institutional performance.

4.3 Frequency by role category

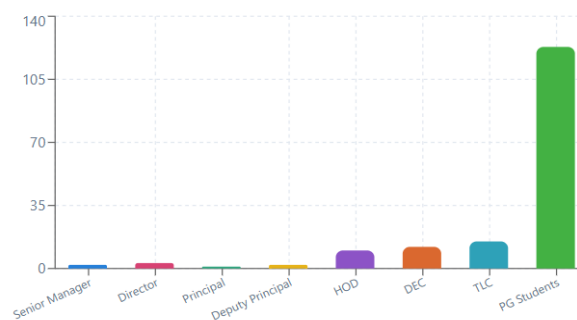


Figure 3: Position of Respondents

Table 3: Position of Respondents

Position	Frequency
Senior Manager	2
Director	3
Principal	1
Deputy Principal	2
Head of Department	10
DEC	12

TLC	15
Postgraduate Students	123
Total	168

Source: Field Survey, 2026

4.4 Descriptive Statistics for Organizational Performance

Organizational performance was operationalized through three composite indicators: organizational survival, organizational effectiveness, and service quality, each measured using five Likert-scale items (1 = Strongly Disagree to 5 = Strongly Agree). Table 4 presents the descriptive statistics (mean, standard deviation, and interpretation) for each construct based on responses from 183 participants.

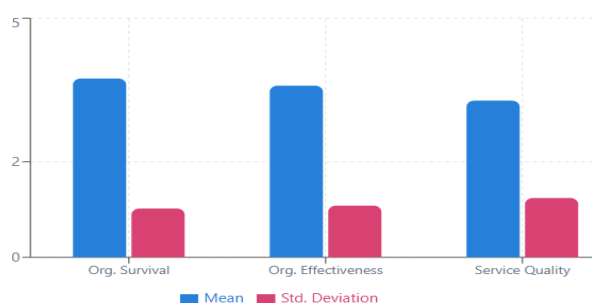


Figure 4: Descriptive Statistics

Table 4: Descriptive Statistics

Indicator	Mean	Std. Deviation
Organizational Survival	3.74	1.02
Organizational Effectiveness	3.59	1.08
Service Quality	3.28	1.24

Source: Field Survey, 2026 Mean scores (1-5 Likert scale)

The results suggest that respondents generally agreed that MIS contributes to institutional performance, particularly in terms of organizational survival and effectiveness. However, service quality recorded the lowest mean, indicating areas where improvements may be required.

4.5 Regression Analysis Based on Study Objectives

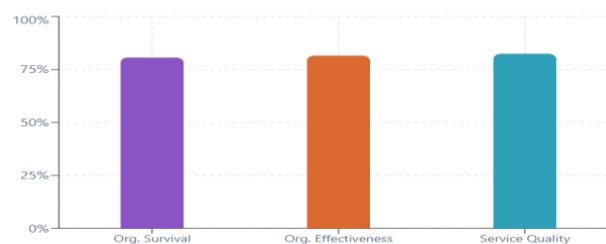


Figure 5: R² Values, Variance Explained by MIS

Table 5: Regression Analysis

Statistic	Value
R	0.898
R²	0.806
F-value	447.749
Significance	0.000
Beta	0.880

Source: Field Survey, 2026

Proportion of variance explained ($p < 0.001$)

The R² value of 0.806 indicates that 80.6% of the variation in organizational survival is explained by MIS. The significance level ($p = 0.000$) confirms that the relationship is statistically significant. The positive beta coefficient ($\beta = 0.880$) suggests that improvements in MIS significantly enhance organizational survival.

4.6 Hypothesis Decision

Effect of MIS on Organizational Effectiveness

Table 6: Effect of MIS on Organizational Effectiveness

Statistic	Value
R	0.903
R²	0.815
F-value	476.823
Significance	0.000
Beta	0.791

The R² value of 0.815 shows that 81.5% of the variation in organizational effectiveness is explained by MIS. The significance level ($p = 0.000$) confirms that the relationship is statistically significant. The null hypothesis was rejected. MIS significantly improves organizational effectiveness. Regression

results also indicated a strong relationship between MIS and organizational effectiveness

Table 7: Effect of MIS on Service Quality

Statistic	Value
R	0.908
R²	0.824
F-value	504.468
Significance	0.000
Beta	0.782

Figure 5: R² Values, Variance Explained by MIS

The R² value of 0.824 indicates that 82.4% of service quality variation is explained by MIS. The significance level ($p = 0.000$) confirms that MIS significantly affects service delivery in the institution. The null hypothesis was rejected. MIS has a significant positive effect on service quality.

4.7 Discussion

The purpose of this study was to evaluate the contribution of Management Information Systems (MIS) to organizational performance in higher education institutions, with specific reference to Kampala International University. The study examined three dimensions of organizational performance: organizational survival, organizational effectiveness, and service quality. The findings of the study indicate that Management Information Systems significantly influence organizational survival at Kampala International University. The regression results showed a strong positive relationship between MIS and organizational survival ($R^2 = 0.806$, $\beta = 0.880$, $p < 0.05$), suggesting that approximately 80.6% of the variation in organizational survival can be explained by the use of MIS. This implies that effective information systems play a critical role in ensuring institutional sustainability and strategic adaptability.

These findings support the arguments of Laudon and Laudon (2017), who assert that MIS enables organizations to monitor internal operations and external environmental changes in real time, thereby supporting strategic

planning and risk management. Similarly, Ajayi and Omirin (2007) noted that universities that utilize integrated information systems are better able to anticipate operational challenges and make timely decisions that support institutional survival. The findings also align with the Resource-Based View theory, which considers information technology resources such as MIS as strategic assets capable of generating sustainable competitive advantage (Bharadwaj, 2000). In the context of Kampala International University, the results suggest that MIS contributes to improved planning, data management, and institutional coordination. These capabilities are particularly important in higher education institutions where competition, regulatory requirements, and stakeholder expectations continue to increase.

The study also found that Management Information Systems significantly influence organizational effectiveness ($R^2 = 0.815$, $\beta = 0.791$, $p < 0.05$). This indicates that MIS explains approximately 81.5% of the variation in organizational effectiveness within the institution. The results suggest that effective information management systems improve decision-making processes, coordination among departments, and overall operational efficiency. These findings are consistent with the work of Rahman (2014) and Savoie (2016), who emphasized that MIS supports the delivery of the right information to the right individuals at the right time, thereby improving organizational coordination and decision-making quality. Furthermore, Jehad et al. (2009) observed that universities that adopt integrated management information systems demonstrate improved administrative performance and resource utilization.

The results therefore indicate that MIS enhances institutional effectiveness by supporting planning, monitoring, and evaluation processes within the university. Access to accurate and timely information

enables administrators and academic leaders to make informed decisions that improve institutional performance. The study further revealed that MIS has a significant positive effect on service quality ($R^2 = 0.824$, $\beta = 0.782$, $p < 0.05$). This suggests that approximately 82.4% of the variation in service quality can be explained by the use of MIS. However, the descriptive statistics indicated that service quality recorded the lowest mean among the three performance dimensions, suggesting that although MIS contributes positively to service delivery, there are still areas requiring improvement.

These findings support previous research by Lapiedra and Devece (2012) and O'Brien (1999), which indicates that integrated information systems improve service efficiency by reducing administrative errors, accelerating service processes, and enhancing communication between institutions and their stakeholders. Similarly, Antono et al. (2018) found that universities implementing robust MIS platforms experienced improvements in student service delivery and administrative responsiveness.

In the context of Kampala International University, MIS appears to support services such as student registration, result processing, and information dissemination. However, the relatively lower mean score suggests that challenges such as delays in communication, limited system integration, or inconsistent system usage across departments may still affect service quality.

4.8 Implications

From a theoretical perspective, the study reinforces the relevance of the Resource-Based View and the Information Systems Success Model in explaining how technological resources such as MIS contribute to organizational performance. The results demonstrate that MIS capabilities can serve as strategic resources that enhance institutional

sustainability and competitiveness in higher education institutions.

From a practical perspective, the findings highlight the importance of effective MIS implementation in improving institutional operations. University administrators should recognize information systems not merely as technological tools but as strategic enablers that support decision-making, coordination, and service delivery.

From a policy perspective, the study suggests that higher education institutions in Uganda should strengthen their digital transformation strategies. Investments in MIS infrastructure, staff training, and system integration are necessary to maximize the performance benefits associated with information systems.

5. Conclusion

The study sought to evaluate the contribution of Management Information Systems to organizational performance at Kampala International University. The results demonstrated that MIS significantly influences organizational survival, organizational effectiveness, and service quality. The findings indicate that MIS plays a crucial role in supporting institutional sustainability by facilitating strategic planning and effective decision-making. The systems also enhance organizational effectiveness by improving coordination, monitoring, and administrative efficiency. Additionally, MIS contributes to service quality by improving information accessibility and streamlining institutional processes.

However, despite the positive influence of MIS, the findings suggest that service quality improvements are still needed in certain areas. This indicates that while MIS infrastructure may be available, its full potential may not yet be realized due to factors such as limited system integration, inconsistent usage, or communication gaps.

5.1 Recommendations

- i. Higher education institutions should invest in modern and integrated MIS platforms to ensure efficient data management and seamless information flow across departments. Improved infrastructure will enhance institutional coordination and operational efficiency.
- ii. Universities should provide continuous training for staff and administrators to improve their ability to effectively utilize MIS tools. Capacity building initiatives will help ensure that information systems are used efficiently to support decision-making and service delivery.
- iii. Institutions should focus on integrating different information systems across departments to reduce data fragmentation and improve information sharing. Integrated systems will enhance coordination between academic and administrative units.
- iv. Universities should leverage MIS to improve student-centered services such as registration, academic records management, and communication platforms. This will enhance service quality and improve stakeholder satisfaction.

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