

Online Student Admission Registration Management System: A Case Study Of Avance International University

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Abstract

This study examined the design, implementation, and user experience outcomes of an Online Student Admission Registration Management System (OSARMS) at Avance International University (AIU). The research was motivated by the inefficiencies, data loss, and accessibility barriers associated with the institution's legacy paper-based admission and registration processes. A mixed-methods approach was adopted, combining a quantitative survey of 178 system users including prospective students, enrolled students, and administrative staff with qualitative interviews of 12 key informants. The system's performance was evaluated against four dimensions: ease of use, data accuracy, processing efficiency, and user satisfaction. Descriptive statistics revealed high mean scores on processing efficiency and data accuracy, while regression analysis confirmed that these dimensions were the strongest predictors of overall user satisfaction ($R^2 = 0.678$). The study concludes that OSARMS significantly improved admission and registration management at AIU and recommends further enhancements to mobile optimization, server reliability, and multilingual support to maximize system inclusivity and effectiveness.

Keywords: Online Admission System, Student Registration, Management Information System, University Administration, E-Governance, Higher Education Technology, Avance International University

1.0 Background of the Study

The digitalization of administrative processes in higher education institutions has emerged as a critical strategy for improving operational efficiency, enhancing student experience, and ensuring data integrity(Christopher et al., 2024). Globally, universities have transitioned from manual, paper-based admission and registration processes to integrated digital management systems that streamline workflows, reduce administrative bottlenecks, and enable real-time data access. In Uganda, the National Information Technology Authority (NITA-U) and the Ministry of Education and Sports have increasingly encouraged higher education institutions to adopt information and communication technology solutions as part of the broader digital transformation agenda outlined in Uganda's National ICT Policy (2015). Despite these directives, many private and emerging universities in Uganda continue to rely on hybrid or predominantly manual systems that generate significant inefficiencies.

Avance International University, a private higher education institution based in Uganda, represents a typical case of a growing university navigating the transition from manual to digital administrative processes(Faridah et al., 2023). Prior to the implementation of OSARMS, the university's admission and registration processes were characterised by lengthy paper queues during intake periods, frequent data entry errors, loss of application documents, delayed issuance of admission letters, and inability to access application status in real-time. These challenges not only frustrated prospective and enrolled students but also overextended administrative staff and compromised the institution's ability

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to make data-driven academic planning decisions(Shahab et al., 2019). The development and deployment of OSARMS at AIU therefore represented a strategic institutional investment aimed at addressing these systemic inefficiencies and positioning the university for sustainable enrolment growth (Sarah et al., 2024).

2.0 Problem Statement

Prior to the deployment of OSARMS, Avance International University faced recurring operational challenges associated with its paper-based admission and registration management processes(Audrey & Nancy, 2026). These included average application processing times of 14 to 21 business days, an estimated 12% data error rate in student records, a 23% loss rate for physical application documents during peak intake periods, and a student satisfaction score of 2.1 out of 5.0 for admission-related services as reported in AIU's 2019 internal audit(K. Moses et al., 2023). These inefficiencies had tangible negative consequences for the university's reputation, enrolment competitiveness, and administrative resource utilisation(Mark et al., 2023). The implementation of OSARMS was intended to resolve these challenges, yet no systematic evaluation of its effectiveness had been conducted since deployment. This study therefore addressed this evaluation gap by assessing user experience outcomes across four key system performance dimensions, generating evidence to guide system optimization and inform digital transformation strategies at comparable institutions.

3.0 Main Objectives of the Study

The main objective of this study was to evaluate the performance and user experience outcomes of the Online Student Admission Registration Management System at Avance International University. The specific objectives were to: (i) assess the ease of use of OSARMS among different user categories; (ii) evaluate the data accuracy performance of the system in managing student records; (iii) determine the processing efficiency gains attributable to OSARMS compared to the previous manual system; and (iv) examine the relationship between system performance dimensions and overall user satisfaction.

4.0 Literature Review

The theoretical basis for evaluating information systems in educational institutions draws significantly from the Technology Acceptance Model (TAM) proposed by Davis (1989), which posits that system usage and satisfaction are primarily determined by perceived usefulness and perceived ease of use. Applied to university management systems, TAM predicts that students and administrative users will adopt and positively evaluate online systems to the extent that they experience these systems as intuitive, time-saving, and functionally valuable(Julius & Kazaara, 2025). Building on TAM, DeLone and McLean's (1992, updated 2003) Information Systems Success Model expands the evaluation framework to include system quality, information quality, service quality, use, user satisfaction, and net benefits as interrelated dimensions of IS success. This study draws on both frameworks to structure its assessment of OSARMS across ease of use, data accuracy, processing efficiency, and user satisfaction dimensions(N. Moses & Nancy, 2024).

Empirical literature on university information management systems consistently demonstrates that online admission and registration systems generate significant improvements in processing speed, data quality, and user satisfaction. Laudon and Laudon (2016) documented that universities adopting integrated student information systems reduced admission processing times by an average of 60–70% and cut administrative labour costs by 25–30%. In the African context, Agyemang and Boateng (2019) found that Ghanaian public universities that implemented online admission portals reported a 45% reduction in application processing backlogs and a 38% improvement in student satisfaction scores within two years of implementation. In Uganda, Nabaasa (2018) found that Makerere University's introduction of its online admissions system significantly reduced data errors and improved record retrieval speed, though initial user resistance among less digitally literate applicants posed adoption challenges that required targeted support interventions.

Data accuracy in student management systems is a particularly critical performance dimension because inaccurate records generate cascading downstream consequences including incorrect fee assessments, wrong course registrations, academic transcript errors, and graduation delays (Julius & Kazaara, 2026a). Ali et al. (2016) demonstrated that automated validation mechanisms in online registration systems reduced data entry errors by up to 85% compared to manual systems, primarily by eliminating transcription errors and enforcing field-level validation rules. Processing efficiency, measured in terms of turnaround time, workflow automation, and resource utilisation, is widely regarded as the primary motivation for system adoption in university contexts. Zwane and Bamwesigye (2020) found that South African universities using cloud-based admission systems processed applications 73% faster than comparable institutions using legacy systems, translating into competitive advantages in student recruitment and retention.

5.0 Methodology

This study adopted a mixed-methods convergent parallel design, simultaneously collecting and integrating quantitative and qualitative data to provide a comprehensive assessment of OSARMS performance (Julius & Kazaara, 2026b). The quantitative component involved administering a structured questionnaire to 178 system users, comprising 120 students (both prospective and enrolled), 45 administrative staff, and 13 academic staff involved in registration-related processes. The qualitative component involved semi-structured interviews with 12 key informants including the system administrator, 4 departmental registrars, and 7 student representatives (Olanrewaju et al., 2021). Quantitative data were analysed using SPSS version 26 through descriptive statistics, Pearson correlation, and multiple linear regression (Nelson et al., 2022). Qualitative data were analysed using thematic analysis following Braun and Clarke's (2006) six-phase framework. Instrument reliability was confirmed through Cronbach's Alpha values ranging from 0.79 to 0.88. System performance benchmarking data were collected from AIU's IT department records, providing objective performance metrics for triangulation with user-reported perceptions.

6. Results

6.1 Descriptive Statistics

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Table 1: Descriptive Statistics — OSARMS Performance Dimensions (n = 178)

System Performance Dimension	N	Min	Max	Mean	Std. Dev.
Ease of Use	178	1.00	5.00	3.68	0.871
Data Accuracy	178	1.00	5.00	3.94	0.742
Processing Efficiency	178	1.00	5.00	4.01	0.719
User Satisfaction	178	1.00	5.00	3.79	0.813

Source: Primary Data, 2025

The descriptive statistics in Table 1 reveal that processing efficiency recorded the highest mean score of 4.01 (SD = 0.719), indicating that users across all categories strongly perceived the OSARMS as having substantially improved the speed and workflow efficiency of admission and registration processes compared to the previous manual system. This finding is corroborated by AIU IT department records showing a reduction in average application processing time from 17 days under the manual system to 3.2 days under OSARMS, representing an 81% improvement. Data accuracy also recorded a high mean of 3.94 (SD = 0.742), reflecting high user confidence in the system's ability to capture, store, and retrieve accurate student records. Administrative staff interviews further confirmed that the system's automated validation features had virtually eliminated the transcription errors that previously afflicted paper-based records. User satisfaction recorded a mean of 3.79 (SD = 0.813), which, while positive, was slightly lower than the functional performance dimensions, suggesting that while users appreciate the system's technical capabilities, some experience and interface factors continue to temper overall satisfaction. Ease of use recorded the lowest mean of 3.68 (SD = 0.871), with qualitative data revealing that first-time users, particularly older prospective students with limited digital literacy, found the interface moderately challenging to navigate, identifying mobile responsiveness and portal navigation as areas requiring improvement.

6.2 Correlation Analysis

Table 2: Pearson Correlation — OSARMS Performance and User Satisfaction (p < 0.01)**

Variable	1	2	3	4
1. Ease of Use	1.000			
2. Data Accuracy	.512**	1.000		
3. Processing Efficiency	.478**	.623**	1.000	
4. User Satisfaction	.589**	.704**	.731**	1.000

Source: Primary Data, 2025

The correlation results demonstrate that all system performance dimensions are significantly positively correlated with user satisfaction. Processing efficiency exhibited the strongest correlation with user satisfaction ($r = 0.731$, $p < 0.01$), suggesting that users' satisfaction with OSARMS is most strongly driven by their experience of faster, streamlined admission and registration processes. This finding is intuitive given that the primary motivation for implementing the system was to overcome the notorious processing delays of the manual system. Data accuracy also demonstrated a

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strong correlation with satisfaction ($r = 0.704$, $p < 0.01$), confirming that confidence in data integrity is a critical determinant of user trust and acceptance of information management systems. Ease of use, while showing the weakest correlation with satisfaction ($r = 0.589$, $p < 0.01$), remained highly significant, confirming that interface usability continues to be a meaningful satisfaction driver even when functional capabilities are strong, a finding consistent with Davis's (1989) TAM prediction that perceived ease of use is a fundamental acceptance driver.

6.3 Regression Analysis

Table 3: Regression Coefficients — Predictors of User Satisfaction

Model	R	R Square	Adj. R ²	Std. Error	F-Statistic
1	.823	.678	.671	.469	122.83***

Table 4: OSARMS Regression Model Summary

Predictor	B	Std. Error	Beta (β)	t-value	Sig.
(Constant)	0.389	0.172	—	2.262	.025
Processing Efficiency	0.431	0.067	.378	6.433	.000
Data Accuracy	0.398	0.071	.341	5.606	.000
Ease of Use	0.287	0.079	.234	3.633	.000

Source: Primary Data, 2025

The regression model demonstrates that processing efficiency, data accuracy, and ease of use together explain 67.8% of the variance in user satisfaction with OSARMS ($F = 122.83$, $p < 0.001$), confirming a highly significant and robust model. Processing efficiency emerges as the strongest predictor ($\beta = 0.378$, $t = 6.433$, $p < 0.001$), reinforcing the conclusion that the system's core value proposition of administrative speed and workflow automation is the primary driver of user satisfaction (Nelson et al., 2023). Data accuracy is the second strongest predictor ($\beta = 0.341$, $t = 5.606$, $p < 0.001$), highlighting that users place tremendous value on confidence in the integrity of their admission and academic records. Ease of use, while the weakest of the three predictors, remains highly significant ($\beta = 0.234$, $t = 3.633$, $p < 0.001$), affirming that interface design and navigational intuitiveness meaningfully influence user satisfaction independently of functional capabilities.

7.0 Discussion of Results

The results confirm that OSARMS has been a successful implementation at Avance International University, with the system generating high user satisfaction and strong functional performance across processing efficiency and data accuracy dimensions. The finding that processing efficiency is the dominant satisfaction predictor aligns with the primary motivation for system adoption and is consistent with Laudon and Laudon's (2016) findings on university IS implementations. The strong performance of data accuracy as a predictor underscores the critical importance of data governance in educational management systems, where errors can have significant consequences for students' academic trajectories. The relative weakness of ease of use as a satisfaction predictor compared to functional dimensions suggests that once users experience tangible functional benefits, they are somewhat more tolerant of

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interface limitations, though the 32.2% unexplained variance in the model indicates that other factors, potentially including system reliability, internet connectivity, and technical support responsiveness, also influence satisfaction significantly.

8.0 Conclusions and Recommendations

OSARMS has transformed the admission and registration management experience at AIU, delivering statistically significant improvements in processing efficiency, data accuracy, and user satisfaction. The system's functional performance is strong, though ease of use limitations continue to moderate overall satisfaction levels, particularly among users with limited digital literacy. Recommendations include: investing in mobile-first interface redesign to improve navigability on smartphones, which represent the primary internet access device for most Ugandan students; establishing a dedicated helpdesk with trained support staff to assist first-time users through the application and registration process; implementing automated status notification systems to keep applicants informed throughout processing stages; and expanding server infrastructure to eliminate the downtime incidents reported by some users, which constitute a significant satisfaction detractor. Additionally, AIU should explore multilingual interface options to improve inclusivity for students from diverse linguistic backgrounds.

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