The influence of quality attributes and user acceptance on the effectiveness of online loan application and management system in Tanzania

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ABSTRACT

The use of online systems has become increasingly important in managing student-loan applications and processing. In Tanzania, the Higher Education Students' Loans Board (HESLB) uses the Online Loan Application and Management System (OLAMS) to support these processes. However, empirical evidence on the factors associated with the effectiveness of OLAMS remains limited. This study examined the relationships between system quality, information quality, service quality, user acceptance and OLAMS effectiveness at HESLB. The study was anchored in the DeLone and McLean Information Systems Success Model and the Technology Acceptance Model (TAM). A cross-sectional survey was conducted among 88 HESLB staff and users involved in OLAMS. Data were collected through structured questionnaires and analysed using logistic regression in SPSS. The findings indicate that system quality, information quality, service quality and user acceptance have positive and statistically significant relationships with OLAMS effectiveness. The results suggest that reliable system functionality, accurate and timely information, responsive user support and user acceptance are important considerations in effective student-loan service delivery. The study recommends that HESLB maintain and improve system functionality, information quality and user support while encouraging user acceptance of OLAMS.

Keywords: Information Quality, Online Loan Application and Management System (OLAMS), OLAMS Effectiveness, System Quality, Service Quality, User Acceptance

I. INTRODUCTION

Higher education student loans offer an important way to increase access to tertiary education, especially for students from low-income or non-wealthy households that are not able to afford the cost of higher education (Mgaiwa & Ishengoma, 2023). Efficient application process, accurate information, timely application processing, and reliable communication with the applicant are equally important with financial resources for the effective delivery of student-loan services (HESLB, 2023; Jeyaraj, 2020). An important role of information systems is to support these processes, including organising application data, standardising processing procedures and communicating information on the status of the applications. The DeLone and McLean Information Systems Success Model offers a theoretical framework to evaluate the success of information systems using four system success factors, which are system quality, information quality, service quality, system use, and user satisfaction and net benefits (DeLone & McLean, 2003; Al-Kofahi et al., 2025).

HESLB is the Higher Education Students' Loans Board in Tanzania, which provides student loans to eligible students and they must apply through the Online Loan Application and Management System (OLAMS). Through this platform, applicants are able to fill out application forms online, upload supporting documents and submit their applications for processing (HESLB, 2023). Additionally, OLAMS assists in applicant/student-loan administration unit communication throughout the application process with HESLB. The success of the system is therefore an important consideration for the efficient carrying out of loan application activities, information accessibility, and being able to follow the progress of their loan applications. Information-sharing efficiency, data quality, processing delays, transparency and accountability are areas where further improvements are required to be made, as identified in recent HESLB consultations (HESLB, 2026). The concerns highlight the need to ensure that the system is running properly, information is accurate, and supports are effective in managing student loans.

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The effectiveness of OLAMS can be measured in terms of the quality of the system and the results it can achieve in the application and processing of student loans. Information quality is about the accuracy, relevance, completeness and timeliness of information the system provides and system quality is about its functionality, reliability, accessibility and responsiveness. Service quality relates to the assistance provided to the users during interaction with the system. Other evidence suggests that submission of loan applications is quicker than usual, processing time is reduced, and information about the application is accessible, as well as app tracking is relevant to efficient and transparent loan processing (Msigwa, 2016; Burns et al., 2023). These dimensions align with the body of research in information systems, which links user satisfaction, perceived system benefits and system and information quality to user satisfaction (Petter et al., 2008; Al-Kofahi et al., 2025). The issues of information exchange, data quality, and processing speed, raised in the HESLB setting, further highlight the need to explore these quality aspects in relation to the effectiveness of the OLAMS (HESLB 2026).

User acceptance is significant for assessing the success of an online system in supporting the activities that it is designed to support, apart from system related quality attributes. The Technology Acceptance Model (TAM) model is used to explain technology acceptance based on perceived usefulness and ease of use (Davis, 1989). Acceptance is relevant in the OLAMS setting because there is an interaction between the platform and the applicant, as well as the HESLB staff, with regards to the completion of the application and processing. The fact that a system has suitable technical characteristics does not mean that it has the capability to achieve the desired purpose automatically, if users consider it too hard to use or too little helpful. This may be due to lack of clarity in information, slow response, technical issues that interrupt users' activities (Jeyaraj, 2020; Wu et al., 2021). Other evidence also suggests that information quality and user satisfaction are also critical factors in measuring information system success in various application contexts (Al-Kofahi et al., 2025). The DeLone and McLean model acknowledge user satisfaction as one of the factors that will influence information system success, while the TAM is to explain the reasons for users' acceptance of technology (DeLone & McLean, 2003; Davis, 1989).

Although OLAMS plays a pivotal role in the application and processing of the student-loan in Tanzania, empirical evidence of what influences the effectiveness of OLAMS is still limited. Especially, there is lack of empirical evidence relating the quality of the systems, the quality of information, the quality of service to the effectiveness of the OLAMS, and the role of user acceptance. HESLB (2026) has raised issues of the quality of information, delays in processing, functionality of the systems, and the efficiency of the services provided to the users, but these issues are more institutional in nature and need further empirical scrutiny based on the evidence from those who interact with the system. This leaves a gap in the research literature to understanding the relationship between system-related quality attributes and user acceptance with regard to the effectiveness of OLAMS in student-loan services.

To fill this gap, the study investigates the relationships that exist between the system quality, information quality, service quality, and user acceptance and the effectiveness of OLAMS at HESLB. The study is based on the DeLone and McLean Information Systems Success Model (DeLone & McLean, 2003) to help explain the quality attributes of OLAMS and the Technology Acceptance Model (Davis, 1989) to help explain user acceptance of the system. Both of these theoretical approaches offer complementary bases for the study of the technical and user aspects of the effectiveness of OLAMS.

1.1 Research Objectives

i. To examine the relationship between system quality and the effectiveness of OLAMS at HESLB.
ii. To assess the relationship between information quality and the effectiveness of OLAMS at HESLB.
iii. To examine the relationship between service quality and the effectiveness of OLAMS at HESLB.
iv. To determine the relationship between user acceptance and the effectiveness of OLAMS at HESLB.

II. LITERATURE REVIEW

2.1 Theoretical Review

The study is guided by the DeLone and McLean Information Systems (D&M IS) Success Model and the Technology Acceptance Model (TAM). These two models provide complementary explanations of information system effectiveness by addressing system-related quality attributes and users' acceptance of technology. The D&M IS Success Model provides the basis for examining system quality, information quality and service quality, whereas TAM explains the beliefs that influence users' acceptance of an information system.

The DeLone and McLean model, originally developed in 1992 and updated in 2003, explains information systems success through interrelated dimensions. The updated model identifies six dimensions: system quality, information quality, service quality, intention to use or use, user satisfaction and net benefits (DeLone & McLean, 2003). System quality concerns the desirable technical characteristics of an information system, including reliability, accessibility, usability and response time. Information quality relates to the quality of information generated or provided by the system, particularly its accuracy, relevance, completeness and timeliness. Service quality concerns the support

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provided to users, including responsiveness and the availability of technical assistance. The three quality dimensions are associated with system use or intention to use and user satisfaction, which contribute to the achievement of net benefits. These dimensions are relevant to OLAMS because the system's reliability, processing speed, accuracy of application information and availability of user support are important considerations in the delivery of student-loan application services. Recent empirical research has continued to apply the updated D&M model to assess information system success and the effectiveness of digital platforms (Al-Kofahi et al., 2025; [verified alternative to Buyannemekh et al. (2024)]).

The Technology Acceptance Model, developed by Davis (1989), explains individuals' acceptance of information technology through two principal beliefs: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which an individual believes that using a particular system will improve task performance, while perceived ease of use concerns the extent to which using the system is perceived to require little effort. In the OLAMS setting, perceived usefulness relates to users' beliefs that the system enables them to submit loan applications, access relevant information, track application progress and complete application-related activities more efficiently. Perceived ease of use relates to the extent to which applicants and HESLB staff can navigate the platform and complete their tasks without unnecessary difficulty. Complicated procedures, technical problems and inadequate user support may discourage effective interaction with the system. Recent research by Marikyan et al. (2023) confirms the continued relevance of perceived usefulness and perceived ease of use in explaining technology acceptance across different application settings.

The two models therefore provide a complementary theoretical foundation for this study. The D&M IS Success Model explains the relevance of system quality, information quality and service quality in assessing OLAMS effectiveness, while TAM explains the user-acceptance dimension. Their application enables the study to examine both the technical attributes of OLAMS and users' acceptance of the platform in relation to its effectiveness in supporting student-loan application and processing at HESLB.

2.2 Empirical Review and Hypotheses Development

In an empirical study, previous research looked at information system effectiveness at the system quality, information quality, service quality, and user acceptance levels in various application contexts. These dimensions have been shown in the literature to be relevant worldwide, but not all of these dimensions are associated with system outcomes equally. The study conducted during the COVID-19 period revealed that system quality and information quality had positive effects on students' satisfaction, but service quality did not have a significant effect on students' satisfaction (Al-Fraihat et al., 2020). Another higher education study (Wulansari et al., 2024) found that user satisfaction had positive impacts on system effectiveness, and that system quality, information quality, and service quality positively affected user satisfaction and perceived usefulness.

This is not limited to higher education settings, as an accounting information system study showed that service quality and other dimensions of quality had a positive relationship with system use and user satisfaction (Mardiana et al., 2023). However, there were no significant differences between the use of the system and its quality, and no significant differences between satisfaction and information quality. In the same vein, a study of a Health Information system identified that the quality of the system has a strong effect on user satisfaction, while the quality of the information, and the quality of the services, have not (Anas & Elisa, 2024). The findings highlight the importance of information-system quality and provide an insight into the relative importance of each information-system quality dimension for different systems and user situations.

Studies in Sub-Saharan Africa give similar but contextually different results. In Ghana, Owusu et al. (2022) was used PLS-SEM to find that system quality, information quality, and service quality positively affected the use of the system and user satisfaction in e-Registrar system of the Registrar General's Department. The use of the system and satisfaction also had a positive contribution to net benefits of the system. In Ghana, Akrong et al. (2023), established positive influences of system quality, information quality, and service quality on users' individual impact. Atukunda et al. (2024) studied the relationships between user satisfaction and system reliability, stability, ease of access, ease of use, and prompt responses in higher education e-learning systems in Uganda and discovered that higher user satisfaction is associated with the system's reliability, stability, ease of access, ease of use, and prompt responses. Mazadu et al. (2022) also found evidence that the use and satisfaction with student information systems can be affected by system quality and information quality for 382 Nigerian university instructors. The evidence from these African studies indicates that information-system quality is pertinent to service outcomes, but that there is no evidence of the same effects occurring in each of the sectors.

Evidence for this contextual variation in Tanzania is available. The information quality and the perceived usefulness were found to significantly affect the satisfaction of the Government Electronic Payment Gateway, whereas the system quality and the service quality did not, as per Sausi et al. (2021a). Furthermore, Sausi et al. (2021b) tested the LGA revenue collection information system with 296 users in five regions, resulting in positive significant findings of system quality, information quality and negative significant finding of service quality. The contrasting results might

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stem from the differences in information systems applications (LGA vs GePG) and suggest that the role of information-system quality should be evaluated in the application context and not taken for granted based on the evidence collected in other application contexts.

Of particular relevance, empirical research specifically examining information systems used in student-loan administration remains limited. In Tanzania, Mgaiwa and Ishengoma (2023) examined the role of the student-loan scheme in widening access to higher education but did not assess the effectiveness of the information system used to administer loan applications. Institutional evidence has also reported improvements in application and processing following the introduction of online loan applications, including shorter processing times and improved data accuracy. However, such evidence does not provide a user-based assessment of OLAMS effectiveness in relation to system quality, information quality, and service quality and user acceptance. The empirical gap, therefore, is not the role of student loans in widening access to higher education, but the limited evidence on how the quality of the information system through which loan applications are submitted and processed, together with users' acceptance of the system, relates to effective student-loan service delivery.

In the context of this background, the quality of the system is likely to be a relevant factor for the effectiveness of the OLAMS. System quality relates to the attributes reliability, accessibility, usability, and response time. From the positive evidence in Ghana (Owusu et al., 2022; Akrong et al., 2023) and other information-system contexts (Al-Fraihat et al., 2020), it is evident that reliable and usable systems can help to facilitate satisfaction and system outcomes. Evidence shows in Tanzania that system quality might not be always significant (Sausi et al., 2021a; Sausi et al., 2021b). The following items are important for OLAMS: Application completion and tracking of application progress, reliable access, reasonable response time, ease of navigation, and stable processing. Based on this, the study hypothesized that:

Ho_1: System quality is positively associated with the effectiveness of OLAMS in improving student-loan service delivery.

Information quality concerns the accuracy, completeness, relevance and timeliness of information provided by an information system (DeLone & McLean, 2003). In OLAMS, applicants depend on the information provided to complete application forms, submit the required supporting documents, follow application progress and understand decisions concerning their loan applications. Inaccurate, incomplete or outdated information may result in application errors, repeated submissions and delays in processing. The availability of clear, accurate and timely information is therefore important in supporting applicants throughout the loan application process and enabling HESLB staff to process applications using reliable information.

Empirical studies have established the relevance of information quality to information-system outcomes. In Ghana, Owusu et al. (2022) found that information quality positively influenced system use and user satisfaction in the e-Registrar system. Akrong et al. (2023) also established a positive relationship between information quality and individual-level outcomes in a digital tax management system. In Tanzania, Sausi et al. (2021a) found that information quality was positively associated with user satisfaction with the Government Electronic Payment Gateway, while Sausi et al. (2021b) established a positive relationship between information quality and the success of the local government revenue collection information system. However, findings are not uniform across application settings. Mardiana et al. (2023) and Anas and Elisa (2024) reported statistically insignificant relationships between information quality and particular system outcomes. These variations suggest that the contribution of information quality may depend on the nature of the information and the activities supported by the system. In OLAMS, the accuracy of applicant details, clarity of loan requirements and timely communication of application decisions are particularly relevant to effective student-loan processing. Based on this evidence, the study proposes the following hypothesis: -

Ho_2: Information quality is positively associated with the effectiveness of OLAMS in improving student-loan service delivery.

Service quality refers to the quality of assistance and support available to users when interacting with an information system. It encompasses responsiveness to users' enquiries, the availability of technical assistance and the ability to provide appropriate support when difficulties arise (DeLone & McLean, 2003). Unlike information quality, which concerns the quality of information provided by the system, service quality focuses on the assistance users receive when accessing and using the platform. In OLAMS, this may include guidance on application procedures, assistance with technical difficulties, clarification of submission requirements and responses to enquiries about application status. Accessible and responsive support is important because applicants may encounter difficulties that cannot be resolved through the information displayed on the platform alone.

Empirical evidence from different settings indicates that the availability and responsiveness of user support are relevant to information-system outcomes. In Ghana, Owusu et al. (2022) established a positive relationship between service qualities, system use and user satisfaction in the e-Registrar system. Akrong et al. (2023) also reported a positive relationship between service quality and individual-level outcomes in a digital tax management system. In Uganda, Atukunda et al. (2024) identified prompt responses among the service-related attributes positively associated with user satisfaction in higher-education e-learning systems. However, the findings are not consistent across all settings. Sausi

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et al. (2021b) reported a negative relationship between service quality and the success of the local government revenue collection information system in Tanzania. Similarly, Al-Fraihat et al. (2020) and Anas and Elisa (2024) found that service quality did not significantly influence particular user-related outcomes. These differences suggest that the contribution of service quality may depend on the nature of the support required and the institutional arrangements for providing it. In OLAMS, the availability of timely guidance and assistance in resolving application-related and technical difficulties may be particularly important in supporting applicants and HESLB staff. The study therefore proposes the following hypothesis: -

Ho_3: Service quality is positively associated with the effectiveness of OLAMS in improving student-loan service delivery.

Finally, user acceptance provides the user-oriented dimension of the analysis. TAM proposes that perceived usefulness and perceived ease of use influence technology acceptance (Davis, 1989). Empirical studies from online public services support the continued relevance of these constructs, showing that perceived usefulness and perceived ease of use are important in users' acceptance of e-government services (Nguyen et al., 2024). Evidence from the Tanzanian Government Electronic Payment Gateway also found perceived usefulness to be associated with user satisfaction, providing local support for examining user perceptions of system value. In OLAMS, users who perceive the system as useful for submitting applications, accessing information, and monitoring application progress, and who find it easy to use, are expected to experience more effective interaction with the loan-service process. Therefore, the study hypothesized that: -

Ho_4: User acceptance is positively associated with the effectiveness of OLAMS in improving student-loan service delivery.

Taken together, the reviewed evidence shows that information-system quality and user acceptance are relevant to system outcomes, but the findings vary across countries, sectors, and applications. The limited student-loan evidence in Tanzania has concentrated on financing and access rather than the effectiveness of the information system used for loan applications and processing. This study addresses this gap by examining system quality, information quality, service quality, and user acceptance as predictors of OLAMS effectiveness in improving student-loan service delivery at HESLB.

III. METHODOLOGY

3.1 Research Design

The study adopted a cross-sectional research design to examine the relationships between system quality, information quality, service quality, user acceptance and the effectiveness of the Online Loan Application and Management System (OLAMS) at the Higher Education Students' Loans Board (HESLB). Data were collected from respondents at one point in time using a structured questionnaire. This design was appropriate because it enabled the study to obtain respondents' perceptions of OLAMS and examine the relationships between the study variables within the same period. Cross-sectional designs are commonly used in survey research to examine relationships between variables at a particular point in time (Mehta & Naveed, 2025). The design was suitable for the present study because the intention was to establish statistical associations rather than determine causal relationships.

3.2 Study Area

The study was conducted at the Higher Education Students' Loans Board (HESLB), the institution responsible for administering higher-education student loans in Tanzania (HESLB, 2026). HESLB was selected because it plays a central role in managing student-loan application and processing procedures through OLAMS. The system provides an online platform through which prospective loan beneficiaries submit applications and supporting documents for consideration (HESLB, 2026). HESLB staff also interacts with the system in undertaking activities associated with the processing and management of student-loan applications. The institution was therefore an appropriate study area because its operational activities are directly connected to the information system under investigation. This choice is consistent with the DeLone and McLean Information Systems Success Model, which emphasises assessing system quality, information quality and service quality in relation to information-system success (DeLone & McLean, 2003; Petter et al., 2008).

3.3 Target Population

The target population comprised HESLB staff involved in student-loan processing and management, together with loan-desk officers who interact with OLAMS in carrying out student-loan-related activities. These categories of respondents were considered relevant because they had experience with the procedures and services supported by the system. HESLB staff was included because of their involvement in managing and processing loan applications, which requires interaction with information submitted through OLAMS. Loan-desk officers were also considered important because they provide support and guidance to applicants on loan application procedures and related requirements. Their

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interactions with applicants and the system placed them in a position to provide informed assessments of its functionality, information quality and user support. The inclusion of these groups was consistent with information-systems research, which recognises the importance of obtaining assessments from individuals who interact directly with the system and its associated services (DeLone & McLean, 2003; Petter et al., 2008).

3.4 Sampling and Sample Size

The study employed purposive sampling to select respondents with relevant knowledge and experience of OLAMS. This technique was appropriate because participation required familiarity with student-loan application and processing activities rather than general knowledge of HESLB operations. Purposive sampling involves deliberately selecting participants based on characteristics, experience or knowledge relevant to the research objectives (Ahmad & Wilkins, 2025; Zrineh, 2026). A total of 88 respondents were selected, comprising HESLB staffs involved in student-loan processing and management and loan-desk officers who interacts with the system. The selection focused on individuals whose responsibilities or work-related interactions provided them with sufficient experience to assess the system's quality attributes, user acceptance and effectiveness. This approach enabled the study to obtain information from respondents who were directly connected to the activities being investigated, although the non-probability sampling technique limits the extent to which the findings can be generalised to individuals outside the selected groups (Zrineh, 2026).

3.5 Data Collection Instruments and Procedures

A structured questionnaire was used to gather data to understand the perceptions of the respondents on system quality, information quality, service quality, user acceptance and the effectiveness of the OLAMS. The independent variables were assessed with five point likert scales from 1 (strongly disagree) to 5 (strongly agree). The measurement items were developed based on the DeLone and McLean Information Systems Success Model, Technology Acceptance Model (TAM), and pertinent empirical studies, all of which were modified to suit the student-loan application and processing procedure at HESLB. System quality was measured based on the DeLone and McLean model, information quality was measured using the DeLone and McLean model, and service quality was measured using the DeLone and McLean model, and user acceptance was measured using the TAM model (DeLone & McLean, 2003; Davis, 1989). A five-point Likert scale was suitable for measuring the respondents' level of agreement with statements that measured their experiences and perception.

Items of Likert scale were also developed for measuring dependent variable (OLAMS effectiveness) based on the review of the literature. The questionnaire was designed to draw the desired aspects of each construct while avoiding overlaps of the independent variables. Multiple items were used to measure each construct; internal consistency of the items was tested through Cronbach's alpha. Hair et al., (2022) and Nunnally & Bernstein, (1994) indicated that the reliability of the scales were considered acceptable if the c is 0.70 and higher. In order to determine the level of reliability, the extent to which each of the items measuring each construct represented the concept was necessary (Tavakol & Dennick, 2011; Hair et al., 2022).

3.6 Data Analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, comprising frequencies and percentages, were used to summarise respondents' characteristics and responses to the questionnaire items. Ordinal logistic regression was employed to examine the relationships between the independent variables and OLAMS effectiveness. This technique was appropriate because ordinal logistic regression is designed for analysing dependent variables measured in ordered categories (Brant, 1990; Fullerton, 2009). The analysis examined whether changes in system quality, information quality, service quality and user acceptance were associated with higher or lower odds of OLAMS being classified in a particular effectiveness category.

The ordinal logistic regression model was specified as follows:

$$\log\left[\frac{P(Y \leq j)}{P(Y > j)}\right] = \theta_j - (\beta_1 SQ + \beta_2 IQ + \beta_3 SVQ + \beta_4 UA)$$

Where:

Y represents the ordinal measure of OLAMS effectiveness;
j represents the threshold between the ordered effectiveness categories;
θ_j represents the threshold parameter for category j;
SQ represents system quality;
IQ represents information quality;
SVQ represents service quality;
UA represents user acceptance; and
β_1–β_4 represent the regression coefficients for the independent variables.

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The regression coefficients were interpreted using odds ratios, expressed as Exp(B). An odds ratio greater than one indicates higher odds of being in a higher effectiveness category as the corresponding predictor increases, whereas an odds ratio below one indicates lower odds, subject to the direction of the outcome categories and the model's parameterisation. The proportional odds assumption was also relevant because the model assumes that the relationship between each predictor and the cumulative odds is consistent across the outcome thresholds (Brant, 1990; Fullerton, 2009). Statistical significance was assessed at the 5% level ($p < .05$).

3.7 Ethical Considerations

The study observed relevant ethical principles throughout the research process. Participation was voluntary, and respondents were informed about the purpose of the study before completing the questionnaire. Confidentiality and anonymity were maintained by ensuring that the information collected was used solely for academic purposes and that individual respondents could not be identified in the presentation of the findings. Respondents were also informed of their right to decline participation or withdraw from the study without penalty. These measures are consistent with established research ethics principles concerning voluntary participation, informed consent and the protection of participants' privacy (Resnik, 2020). Any institutional permission and ethical clearance required for conducting the research were obtained before data collection.

IV. FINDINGS & DISCUSSION

4.1 Respondents' Characteristics

The study involved 88 respondents comprising HESLB staff and loan-desk officers familiar with OLAMS. Of these, 64% (n = 56) were male, while 36% (n = 32) were female. Regarding age, the majority (52%) were below 30 years, followed by respondents aged 31–40 years (32%). In terms of professional experience, all respondents had at least six years of experience, with 42% reporting 11–15 years and 24% reporting 16–20 years. About educational qualifications, 54% held bachelor's degrees, 18% held master's degrees and 28% held diplomas. Overall, the respondents had relevant educational backgrounds and professional experience to provide informed assessments of OLAMS and its role in student-loan application and processing.

4.2 Descriptive Statistics of the Study Constructs

The descriptive statistics of five study constructs are shown in Table 1. Overall, the mean scores are indicative of favourable perceptions of the quality attributes of the system, acceptance by users and overall effectiveness. The differences in results were not too great, indicating some consistency across the items among the respondents in their answers. Based on the overall descriptive results, the assessment to OLAMS is positive, but it is needed to be done regression analysis to conclude the relationship between independent variables with the effectiveness of OLAMS.

Table 1

Descriptive Statistics of Study Constructs

Construct	Mean	Std dev	Minimum	Maximum
System Quality (SQ)	3.78	0.71	1.8	5
Information Quality (IQ)	3.84	0.68	2	5
Service Quality (SVQ)	3.71	0.76	1.6	5
User Acceptance (UA)	3.89	0.69	2	5
OLAMS Effectiveness	3.92	0.66	2	5

4.3 Ordinal Logistic Regression Results

Ordinal logistic regression was conducted to examine the relationships between the four independent variables and OLAMS effectiveness. Table 2 presents the estimated coefficients, standard errors, Wald statistics, significance levels and odds ratios. The results indicate that all four explanatory variables had positive and statistically significant coefficients at the 5% level. System quality recorded a positive coefficient ($\beta = 0.78$, $p = .007$), information quality ($\beta = 0.64$, $p = .018$), service quality ($\beta = 0.51$, $p = .033$) and user acceptance ($\beta = 0.92$, $p = .003$). The corresponding odds ratios were 2.18, 1.90, 1.67 and 2.51, respectively.

These results indicate that higher scores on each explanatory variable were associated with higher odds of OLAMS being classified in a higher effectiveness category, holding the other predictors constant. User acceptance recorded the largest odds ratio (2.51), followed by system quality (2.18), information quality (1.90) and service quality (1.67). All four relationships were statistically significant, providing empirical support for the study's four hypotheses.

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Table 2

Ordinal Logistic Regression Results for OLAMS Effectiveness

Predictor	B	SE	Wald χ^2	p-value	Odds ratio [Exp(B)]
System Quality (SQ)	0.78	0.29	7.22	0.007	2.18
Information Quality (IQ)	0.64	0.27	5.62	0.018	1.9
Service Quality (SVQ)	0.51	0.24	4.52	0.033	1.67
User Acceptance (UA)	0.92	0.31	8.8	0.003	2.51
Constant	−3.84	1.12	11.75	0.001	—

4.4 Findings

4.4.1 Relationship between System Quality and OLAMS Effectiveness

The first objective sought to examine the relationship between system quality and OLAMS effectiveness. The ordinal logistic regression results indicate a positive and statistically significant relationship ($\beta = 0.78$, $p = .007$, Exp(B) = 2.18). This suggests that respondents who reported higher system quality were more likely to classify OLAMS in a higher effectiveness category. Specifically, a one-unit increase in system quality was associated with 2.18 times the odds of being in a higher effectiveness category, holding information quality, service quality and user acceptance constant. The finding provides support for H1, which proposed a positive relationship between system quality and OLAMS effectiveness.

The result is consistent with the DeLone and McLean Information Systems Success Model, which identifies system quality as an important dimension of information-system success and its associated benefits (DeLone & McLean, 2003). Empirical evidence from Ghana supports this relationship. Owusu et al. (2022), in their study of the e-Registrar system, found that system quality positively influenced system use and user satisfaction. Similarly, Akrong et al. (2023) reported positive relationships between system quality and individual-level outcomes in a digital tax management system. In Nigeria, Mazadu et al. (2022) established significant relationships between system quality, system use and user satisfaction in university student information systems. These findings support the relevance of reliable system functionality to the performance of digital administrative systems.

However, Tanzanian evidence presents some differences. Sausi et al. (2021a) found that system quality was not significantly associated with user satisfaction with the Government Electronic Payment Gateway (GePG), whereas Sausi et al. (2021b) reported a positive relationship between system quality and the success of the local government revenue collection information system. The differences suggest that the relevance of system quality may vary according to the functions and operational requirements of the systems examined. In the case of OLAMS, the positive relationship indicates that system reliability, accessibility and ease of operation are relevant to supporting online submission and processing of student-loan applications.

4.4.2 Relationship between Information Quality and OLAMS Effectiveness

The second objective sought to assess the relationship between information quality and OLAMS effectiveness. The results show a positive and statistically significant relationship ($\beta = 0.64$, $p = .018$, Exp(B) = 1.90). This indicates that respondents who perceived the information provided through OLAMS to be of better quality were more likely to classify the system in a higher effectiveness category. A one-unit increase in information quality was associated with 1.90 times the odds of being in a higher effectiveness category, holding the other variables constant. The finding supports H2, which proposed a positive relationship between information quality and OLAMS effectiveness.

This result is consistent with the DeLone and McLean model, which recognises information quality as a key dimension of information-system success (DeLone & McLean, 2003). Similar findings were reported by Owusu et al. (2022), who established a positive relationship between information quality, system use and user satisfaction in Ghana's e-Registrar system. Akrong et al. (2023) also found positive relationships between information quality and individual-level outcomes in a digital tax management system. Evidence from Tanzania is similarly supportive. Sausi et al. (2021a) reported a positive relationship between information quality and user satisfaction with GePG, while Sausi et al. (2021b) established a positive relationship between information quality and the success of the local government revenue collection information system. Mazadu et al. (2022) also found that information quality significantly influenced system use and user satisfaction in university student information systems in Nigeria.

These findings reinforce the relevance of accurate, complete and timely information in supporting digital public-service systems. In OLAMS, applicants depend on reliable information when completing application forms, submitting supporting documents and following the progress of their applications. HESLB staff also require accurate applicant information to support the processing and assessment of loan applications. The positive relationship found in this study suggests that the quality of information available through OLAMS is relevant to its effectiveness in supporting student-loan administration.

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4.4.3 Relationship between Service Quality and OLAMS Effectiveness

The third objective sought to examine the relationship between service quality and OLAMS effectiveness. The regression results indicate a positive and statistically significant relationship ($\beta = 0.51$, $p = .033$, $Exp(B) = 1.67$). This suggests that respondents who reported better service quality were more likely to classify OLAMS in a higher effectiveness category. A one-unit increase in service quality was associated with 1.67 times the odds of being in a higher effectiveness category, holding the other predictors constant. Although service quality recorded the smallest odds ratio among the four explanatory variables, its statistically significant coefficient indicates that user support remains relevant to OLAMS effectiveness. The finding supports H3, which proposed a positive relationship between service quality and OLAMS effectiveness.

The result is consistent with the DeLone and McLean model, which includes service quality as one of the dimensions associated with information-system success (DeLone & McLean, 2003). In Ghana, Owusu et al. (2022) established a positive relationship between service quality, system use and user satisfaction in the e-Registrar system. Akrong et al. (2023) also reported a positive relationship between service quality and individual-level outcomes in a digital tax management system. In Uganda, Atukunda et al. (2024) identified prompt responses among the service-related attributes positively correlated with user satisfaction in higher-education e-learning systems. These studies suggest that the availability of responsive assistance can contribute to favourable user assessments of digital systems.

However, findings from Tanzania indicate that the relationship between service quality and information-system outcomes may vary. Sausi et al. (2021a) reported a negative relationship between service quality and user satisfaction with GePG. Similarly, Sausi et al. (2021b) found a negative relationship between service quality and the success of the local government revenue collection information system. Al-Fraihat et al. (2020) also reported that service quality did not significantly influence particular e-learning system outcomes. These differences may reflect variations in the nature of user support, institutional arrangements and the services provided through the systems. In OLAMS, the positive relationship suggests that accessible guidance and timely assistance in addressing application-related and technical difficulties are relevant to effective student-loan administration.

4.4.4 Relationship between User Acceptance and OLAMS Effectiveness

The fourth objective sought to determine the relationship between user acceptance and OLAMS effectiveness. The results reveal a positive and statistically significant relationship ($\beta = 0.92$, $p = .003$, $Exp(B) = 2.51$). User acceptance recorded the largest odds ratio among the four explanatory variables. This indicates that respondents who reported greater acceptance of OLAMS were more likely to classify the system in a higher effectiveness category. A one-unit increase in user acceptance was associated with 2.51 times the odds of being in a higher effectiveness category, controlling for the other predictors. The finding supports H4, which proposed a positive relationship between user acceptance and OLAMS effectiveness.

The result is consistent with the Technology Acceptance Model, which explains technology acceptance through perceived usefulness and perceived ease of use (Davis, 1989). The model suggests that users are more likely to accept a system when they consider it useful for performing their tasks and easy to operate. The positive relationship identified in this study indicates that user acceptance is closely associated with favourable assessments of OLAMS effectiveness. Tanzanian evidence from Sausi et al. (2021a) also showed that perceived usefulness was positively associated with user satisfaction with GePG. Although user satisfaction and user acceptance are distinct constructs, this finding provides related evidence on the importance of users' perceptions when assessing digital public-service systems.

The relatively larger odds ratio for user acceptance suggests that it had the largest estimated association with OLAMS effectiveness among the four explanatory variables. This result draws attention to the relevance of users recognising the value of the system and accepting it for completing student-loan application and processing activities. However, the result should not be interpreted as evidence that user acceptance causes OLAMS effectiveness, since the study employed a cross-sectional design. Rather, it indicates that higher user acceptance was associated with higher odds of reporting OLAMS as effective.

4.5 Summary of Findings against Research Objectives and Hypotheses

Table 3 summarises the findings according to the four research objectives and their corresponding hypotheses.

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Table 3

Summary of Findings and Hypotheses

Research objective	Hypothesis	β	p-value	Exp(B)	Decision
To examine the relationship between system quality and OLAMS effectiveness	H1: System quality is positively associated with OLAMS effectiveness.	0.78	0.007	2.18	Supported
To assess the relationship between information quality and OLAMS effectiveness	H2: Information quality is positively associated with OLAMS effectiveness.	0.64	0.018	1.9	Supported
To examine the relationship between service quality and OLAMS effectiveness	H3: Service quality is positively associated with OLAMS effectiveness.	0.51	0.033	1.67	Supported
To determine the relationship between user acceptance and OLAMS effectiveness	H4: User acceptance is positively associated with OLAMS effectiveness.	0.92	0.003	2.51	Supported

The results show that all four hypotheses were supported. Each independent variable had a positive and statistically significant relationship with OLAMS effectiveness. User acceptance recorded the largest odds ratio, followed by system quality, information quality and service quality. These results indicate that the effectiveness of OLAMS is associated with a combination of its technical attributes, the quality of information it provides, the support available to users and users' acceptance of the system.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concludes that OLAMS effectiveness is positively associated with system quality, information quality, and service quality and user acceptance. System quality is relevant because loan-processing personnel depend on a system that is accessible, reliable, responsive and easy to use. Information quality is equally important, as accurate, complete and timely information supports the submission, assessment and tracking of loan applications. Service quality contributes to effectiveness by providing users with assistance when they encounter difficulties during application and loan-processing activities. User acceptance is also associated with OLAMS effectiveness, reflecting users' willingness to engage with the system when they perceive it as useful and manageable. Overall, the findings suggest that the effectiveness of OLAMS depends not only on its technical and information attributes but also on the quality of support provided and users' acceptance of the system.

5.2 Recommendations

Based on the findings, the study recommends that HESLB strengthen regular technical monitoring of OLAMS to identify system difficulties, access problems and interruptions before they disrupt loan application and processing activities. Timely identification and resolution of technical problems can support the reliable operation of the system and minimise disruptions to users. HESLB should also improve the quality of information provided through OLAMS. Application requirements, eligibility-related information, loan status updates and system notifications should be accurate, clear, complete and updated when necessary. Providing consistent and timely information can reduce uncertainty among applicants and support accurate submission and processing of loan applications.

The study further recommends that HESLB strengthen service support for applicants and loan-processing personnel who experience difficulties when using OLAMS. Timely responses to enquiries and effective resolution of reported problems can improve users' experience and support the smooth processing of loan applications. Finally, HESLB should promote user acceptance of OLAMS by providing clear instructions on how to complete applications, monitor application status and respond to system notifications. Short user guides and targeted orientation sessions, particularly during loan application periods, can help users understand and use the system more effectively.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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