

# The Effects of Students' Information System on Students' Satisfaction in Higher Learning Institutions in Tanzania: A Case of Tanzania Institute of Accountancy, Mwanza Campus

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## **Abstract**

*Students Information System (SIS) is a management information system that is essentially used to manage students' data. The application of SIS in Higher Learning Institutions (HLIs) must satisfy students because satisfaction determines the continued use of the system efficiently and effectively. Therefore, this study adapted the Delone and Mclean Information System Success (ISS) model with system quality, information quality, service quality, system use, and net benefit variables to gauge students' satisfaction with the use of SIS at the Tanzania Institute of Accountancy (TIA) Mwanza campus. Data were gathered using structured questionnaires from 214 second and third-year students. The researcher believed that since these students had used the SIS for more than a year, they had sufficient experience with its functionality, hence they could provide reliable responses to the research questions. The Binary Logistic Regression Model was used to analyze the data using SPSS. Findings revealed that students' satisfaction with the use of SIS at the TIA Mwanza campus was found to be insignificant to service quality, with a P value greater than 0.05. However, information quality, system use, system net benefit, and system quality, all had P values less than 0.05, which proved that these hypotheses were positive and significant.*

**Keywords:** *Students Information System (SIS), Tanzania Institute of Accountancy (TIA), Delone and Mclean Model, Students Satisfaction*

## **1.0 INTRODUCTION**

Students' Information System (SIS) is very vital in both private and public higher learning institutions. SIS can be used as a measure of the quality of HLIs, the better the system the better the service delivery from HLIs. The application of SIS in HLIs in the current world of competition is inevitable for the well-being of the institutions. The main activities performed in HLIs include admission of

students, student data management, module registrations, fee payments, and examination handling. The access to module content and materials can be optimally completed with the application of SIS (Agama et al., 2021). The application of SIS in HLIs accelerates smooth and effective academic operations and hence satisfies students. Islamic (2021), argued that the effectiveness of SIS is linked with students' satisfaction with the use of SIS.

Student satisfaction has evolved into a benchmark for measuring the efficiency and effectiveness of SIS (Muslim Diekola & Ahmad Yusni, 2018). The level of satisfaction of students in HLIs is influenced by the caliber of the information system. Paying close attention to students as customers is paramount because providing students with high-quality services at an appropriate time will reduce complaints and boost student satisfaction which will ultimately increase student retention rates (Macailao, 2023; Kobero & Swallehe, 2022; Chandra *et al.*, 2018). HLIs need to devote adequate funds to support the highest-quality services that satisfy students and achieve the finest service performance (Darwis et al., 2021; Pham et al., 2019). Satisfied students are more likely to be retained for longer years in HLIs and this will enable the latter to mobilize resources in terms of tuition fees for developmental and expansion purposes. This will have a trickle-positive effect on the advancement of the whole economy at large (Twum & Pephrah, 2020).

Most of the HLIs worldwide utilize SIS to simplify institutional operations and enhance student satisfaction. Findings from Cyprus International University suggested that SIS features such as output quality, result demonstrability, system image, perceived ease of use and perceived usefulness strengthen student's satisfaction with the application of SIS (Kavuta & Nyamanga, 2018; Ismail, Celebi, & Nadiri, 2019). Conversely, a study conducted at the School of Economics in Kendari Indonesia confirmed that students will naturally be satisfied if the SIS is in line with their activities and provides them with accurate and timely information that meets their expectations (Abbas et al., 2021).

Kenyan universities are highly affected by system quality, system functionality, information quality, system availability, and perceived ease of use of SIS usage (Nelima et al., 2016). In Tanzania, HLIs have deployed SIS to assist their daily operations. The system is used by these institutions to assist their students with a variety of tasks including the registration process, examination handling, tracking of fees paid by students, and allocation of accommodation (Naway *et al.*, 2018; Irfan, Jaya Putra and Ali Ramdhani, 2019; Kayanda, Busagala and Tedre, 2020). Tanzania Institute of Accountancy (TIA) is one of the public HLI in Tanzania. Currently, the institute has seven campuses located in Dar es Salaam, Mwanza,

Mbeya, Singida, Kigoma, Mtwara, and Zanzibar. The institute is using SIS to handle various students' tasks hence simplifying the institute's operations. Kobero and Swallehe (2022), revealed that at TIA students are dissatisfied with the modern tools and equipment available with a score of -0.25 which implied that TIA management should upgrade their modern tools and equipment to enhance the satisfaction level of students.

Several studies have been conducted in the area of automation of operations in higher learning institutions in Tanzania, (Kavuta & Nyamanga, 2018; Kayanda et al., 2020; Magambo et al., 2020; Mtani, 2022; Mwandosya et al., 2020; Reza et al., 2020). Most of the reviewed literature in Tanzania did not focus on linking SIS and student satisfaction. Additionally, the reviewed empirical studies used regression analysis, structural equation modeling, and empirical literature review as methods of analyzing the data. In that regard, this study focused on two fundamental issues: linking the relationship between SIS and student satisfaction and using the binary logistic model as the method of analysis of the sourced data.

## **2.0 LITERATURE REVIEW**

### **2.1 Theory Underpinning the Study**

Several theories, frameworks, and models have been used to study the automation of operations in HLIs from various empirical literatures. These theories, models, and frameworks include Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), the individual-focused model, the organizational-focused model, the Technology Organization Environment (TOE), and the DeLone and McLean model (Ghazal, Aldowah and Umar, 2018; Martins *et al.*, 2019; Kayanda, Busagala and Tedre, 2020; Mtani, 2022; Macailao, 2023). For this study, the DeLone and McLean model was adapted and variables from the model were used to test students' satisfaction with SIS use in HLIs. The model was adapted because it focused on the success of an Information System (IS) in an organization that guarantees user satisfaction with its use.

### **2.2 DeLone and McLean Model**

DeLone and McLean (1992) developed a model of information system success with six dimensions: system quality (SQ), information quality (IQ), system utilization (SU), user satisfaction (US), individual impact (II), and organizational effect (OI). System quality relates to the architecture of information systems, including how simple they are to use, get, and learn. The information quality metric evaluates the performance of an information system in terms of appearance, content, correctness, and usefulness. The phrase system usage relates to identifying how information systems are used, including the quantity of

information retrieved or accessed and the functions carried out. User satisfaction metrics is used to measure if the information system meets user's expectations. After users have used the system, individual impact is used to gauge their responses followed by organizational impact.

Later, DeLone and McLean (2003) updated DeLone and McLean (1992) by adding three dimensions: service quality (RQ), intention to use (IU), and net benefit (NB). Service quality was added to the model to affect user satisfaction and system usage. Intention to use was added as a substitute for system usage, and net benefit was formed by combining individual and organizational effects.

### **2.3 SIS in HLIs**

HLIs rely heavily on SIS, which facilitates the effective management of students' information. The system enables students to perform registration, access examination results, fee payments, and accommodation services. The SIS improves the efficiency of service providers through computerized and automated operations while operating across a network of computers with a centralized database. Many HLIs have integrated SIS into their operations to improve students' record-keeping and management (Gürkut and Nat, 2018; Abubakar *et al.*, 2019; Kayanda, Busagala & Tedre, 2020). The success of knowledge management programs and applications depends on investment in information technology (Maggay, 2017). Studies conducted by Naway *et al.* (2018) and Irfan *et al.* (2019) revealed that the automation of operations in HLIs is inevitable since it supports their daily operations. The automation of operations in HLIs highly contributes to enhancing and creating a good learning environment and ultimately leads to the satisfaction of students.

### **2.4 Students' Satisfaction with SIS in HLIs**

Student satisfaction with SIS refers to students' evaluation and effective response to the SIS's overall user experience. It is the fulfillment of all the benefits from the SIS that students had hoped to receive. Students' perceptions of service satisfaction may be strengthened if they are familiar with SIS. Individuals experience satisfaction if they receive service that meets their expectations (Abbas *et al.*, 2021; Ismail *et al.*, 2019; Macailao, 2023). Additionally, Ghazal *et al.* (2018) insisted that students will be more satisfied with the system and find it more valuable if the system functionality meets their expectations. This has been aligned with the model adapted which outlined that if SIS meets user's expectations, then user satisfaction will be achieved.

Students' satisfaction with HLIs is influenced by several factors, one of which is the quality of the SIS which is a crucial component in the development of overall

service quality, allowing HLIs to concentrate efforts and allocate resources to obtain the best service performance and identify the service quality that results in the most students' satisfaction. If the information system does not satisfy students, the system's quality should be improved to raise student satisfaction levels (Darwis et al., 2021; Pham et al., 2019; Saputri & Mulyani, 2022). This is consistent with other studies that found that the effectiveness and usability of an information system have a substantial impact on user satisfaction (Juhriyansyah et al., 2020; Jumardi et al., 2019; Meilani et al., 2020).

## **2.5 Quality of SIS and Students' Satisfaction**

System quality is a measure of the information processing by the system that includes software, data components, and technical soundness of the system. The characteristics of system quality include usability, responsiveness, adaptability, and reliability. It is concerned with whether there are bugs in the system, the consistency of the user interface, the ease of use, the quality of the documentation, and sometimes the quality and maintainability of the program code. The key performance indicators of the quality of SIS reflect the functionality, simplicity, dependability, and convenience of the system (Macailao, 2023).

On the other hand, the adapted model measured the system's quality in terms of ease of use, functionality, reliability, flexibility, data quality, portability, integration, and importance. The model concluded that system quality relates to the architecture of SIS and measures the simplicity of SIS to students which will automatically satisfy the students (DeLone and McLean, 2003). Likewise, Hidayah, Fetrina, and Taufan (2020), commented that technological factors namely ease of system usage result in user satisfaction. Furthermore, previous studies have shown that features under system quality greatly lead to user satisfaction (Darwis et al., 2021; Juhriyansyah et al., 2020; Jumardi et al., 2019; Meilani et al., 2020).

## **2.6 SIS Information Quality and Students' Satisfaction**

Information quality in SIS refers to the standard of the content of information systems made available to students. The SIS that HLIs desire must meet all functional criteria and deliver information of a high caliber. The quality of information output from a system determines its performance. Information quality serves as a gauge for how well an information system produces its results. A good information system should display findings that are pertinent to the goal (Macailao, 2023; Mavetera et al., 2017; Olatokun & Mala, 2012).

Regarding information quality, Ghazal, Aldowah, and Umar (2018) opined accuracy, completeness, sufficiency, accessibility, understandability, timeliness,

and format are some of the broad benefits of high-quality information while DeLone and McLean (2003) connoted the key indicators of information quality as accuracy, completeness, timeliness, relevance, and consistency. Numerous research has demonstrated a solid link between user pleasure and information quality (Ghazal et al., 2018; Macailao, 2023; Meilani et al., 2020; Olatokun & Mala, 2012; Rachmat et al., 2022). On top of that, Gürkut and Nat (2018) concluded that the total satisfaction of SIS users is impacted by information quality.

### **2.7 SIS Service Quality and Students' Satisfaction**

According to DeLone and McLean (2016), service quality refers to how well users of a system are supported by the IT support staff and information systems organization. The technical proficiency, accuracy, dependability, empathy, and responsiveness of the IT team can all be used to gauge the quality of a service. Poor user support will result in a loss of customer goodwill and a bad reputation for the organization.

HLIs' primary clientele is students. To boost student satisfaction, HLIs must ensure that all of their facilities and services are accessible to students at all times and in all locations. Both public and private HLIs strive to provide outstanding service to students. Student satisfaction affects how HLIs evolve and serves as a barometer for an institution's quest for competitive advantage. (Ghazal et al., 2018; Le, 2020). In higher education, (Mbazor, 2021) claims that knowledge and prior experiences are the two most significant predictors of service quality and that poor service has a direct impact on satisfaction. Jose Martin further asserted that service quality plays a significant role in determining student happiness as well as the ongoing use of the Education Management Information System (EMIS) (Martins et al., 2019).

### **2.8 System Use and Students' Satisfaction**

DeLone and McLean (2016) defined system use as how extensively customers and staff make use of an information system's features. Features like usage frequency, nature of use, usage appropriateness, amount of use, usage goal, and usage scope determine the extent of Information system use in an organization. System use needs users to have knowledge of computer operations and associated technology. knowledge and ability to navigate and utilize the system's features is crucial for users to have a positive experience and meet their goals. Users meet their expectations about the system before the system is used. Effective system use has a positive impact on the level of satisfaction of users. When users are equipped with the required technical skills and understand how to operate SIS, they are more likely to experience higher satisfaction levels (Yakubu and Dasuki,

2018;Mailizar, Almanthari and Maulina, 2021; Macailao, 2023). However, a study done in 2018 revealed that students' satisfaction with using the information system has a beneficial effect on the link between user satisfaction and actual use of the system (Yakubu & Dasuki, 2018)

## **2.9 Net Benefits and Students' Satisfaction**

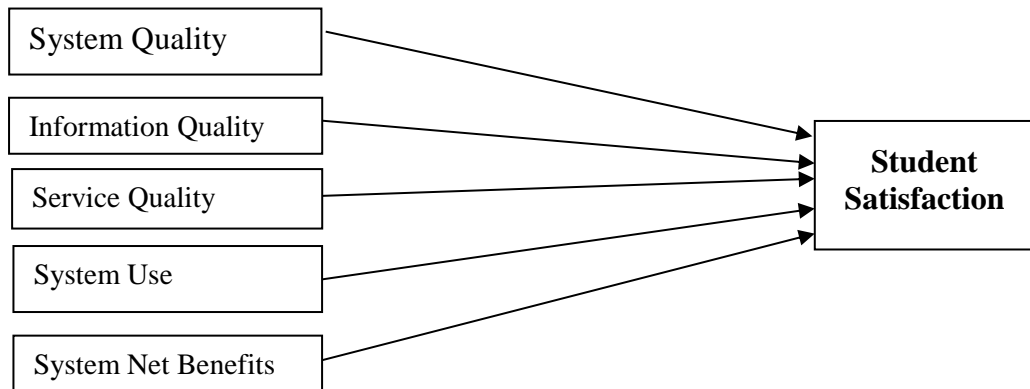
Net benefits describe how information systems contribute (or do not contribute) to the prosperity of certain individuals, groups, organizations, businesses, and nations. better decision-making, increased productivity, higher sales, lower costs, higher profits, improved market efficiency, improved customer welfare, more employment created, and economic growth are all net benefits. Net benefits include both individual and organizational impacts (DeLone & McLean, 2016).

The DeLone and McLean (1992) model defines individual impact as a sign that an information system has improved the user's decision-making making, understanding of the context of the decision, changed user behavior, and altered the decision maker's perception of the significance of information system. The model further implies that user satisfaction with the information system usage influences individual impact. The approach also demonstrated how individual effect affects organizational impact. The net benefit is the benefit an individual experience while using the system. User satisfaction with system usage can be considered as an indicator of individual benefit, which helps individuals and organizations perform better.

According to Juhriyansyah *et al* (2020), the net benefit is one of the key elements for the success of information systems in higher learning institutions. This has been supported by numerous studies that found a correlation between user satisfaction with information system use and the advantages associated with the system's high performance (Martins et al., 2019; Meilani et al., 2020; Ojo, 2017; Rachmat et al., 2022; Wahyudi et al., 2017). This suggests that more net advantages will increase students' contentment with using SIS in higher learning institutions.

## **2.10 Conceptual framework**

This study was guided by the conceptual framework (depicted in Figure 1). This conceptual framework shows the relationship between the five explanatory variables used in this study which are system quality, information quality, service quality, system use, and System Net benefit, and their influence on student level of satisfaction from SIS usage.



**Figure 1: Conceptual Framework**

### 2.11 Hypotheses guiding this study

Thus, from various empirical literature reviewed this study is guided by the following hypotheses: -

**Hypothesis 1:** *System quality positively influences student’s satisfaction with SIS*

**Hypothesis 2:** *Information quality positively influences student’s satisfaction with SIS.*

**Hypothesis 3:** *Service quality positively influences student’s satisfaction with SIS*

**Hypothesis 4:** *System use positively influences student’s satisfaction with SIS*

**Hypothesis 5:** *Net benefit positively influences student’s satisfaction with SIS.*

### 3.0 RESEARCH METHODOLOGY

This study applied a cross-sectional research design because data was collected at a single point in time. The respondents to the research questions were the students. The eligibility criteria for answering the research questions is for the student to be in the second year or third year of study since they have used SIS for more than a year, and have more experience application and insight of SIS. The time frame is suitable to test the level of satisfaction of students using SIS at the TIA-Mwanza Campus given the fact that they have used the system for more than one year. Diploma II, Bachelor II, and Bachelor III students were randomly selected based on their size. The TIA Mwanza campus was specifically chosen for the study because it is one of the HLIs that uses SIS. The findings from the study may also have broader applicability to other TIA campuses and other higher learning institutions and add to the body of knowledge on the application of SIS in HLIs.



### 3.1 Data collection tool

To get input on system quality, information quality, service quality, system use, net benefit, and its effect on student satisfaction, a self-administered questionnaire was adopted. The study questionnaire was comprised of two parts: Questionnaire items that collected basic demographic data (gender, age) and questionnaire items adopted from the DeLone and McLean Model constructs. The survey items were rated using a five-point Likert scale.

### 3.2 Data Analysis

A binary Logistic Regression Model was adopted where a Statistical Package for Social Sciences (SPSS) was employed to analyze data. The model below which included five independent variables and one binary dependent variable was used:

$$\ln\left(\frac{Y}{1-Y}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon_t$$

Where:

$Y$  – Customer satisfaction

$X_1$  – System quality

$X_1$  – Information quality

$X_1$  – Service quality

$X_1$  – System use

$X_1$  – Net benefit

$\beta_0$  - Constant term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  are regression coefficients

$\varepsilon_t$  – error term

### 3.3 Creation of Binary Values

To determine if customers were satisfied or not, the dependent variable was divided into two dummy variables. Values above the average were given a value of 1, indicating that the user was satisfied with the system, while values below the average were given a value of 0, indicating that the user was not satisfied.

### 3.4 Sampling and Sample Size

Diploma II, Bachelor II, and Bachelor III programs had a total of 461 students which makes a study population. Yamane's (1967) formula was used to calculate the sample size as follows:

$$n = \frac{N}{1+N(e^2)}$$

Where:

- $n$  is the sample size
- $N$  is our population size and
- $e$  is a sampling error taken at 95% confidence level

Therefore, our minimum sample size was 214 respondents meaning that out of the 461 respondents, a minimum of 214 respondents were required to fill the questionnaire correctly. A stratified Sampling technique was used to obtain respondents from Diploma 11, bachelor II, and Bachelor III students.

A stratified random sample is one obtained by dividing the population elements into mutually exclusive, non-overlapping groups of sample units called strata, and then selecting a simple random sample from within each stratum. Students were divided into different strata (programmes), then a sample was selected from each program based on the number of students in each program as shown in Table 1.

**Table 1: Stratified Sampling**

Course	Sample Size
DPLM II	39
DA II	73
BACC II	46
BPLM II	18
BPLM III	14
BACC III	23

### 3.5 Validity and Reliability

Validity suggests that the data collection methods adhere to recognized standards of quality and are suitable for a statistical test to determine how precise, exact, true, significant, and right the data are (Ghazal et al., 2018). Pilot research was used to validate questionnaires to ensure their validity.

Cronbach's alpha was used to measure reliability since it reflects the limits. This approach is vital because it ensures internal consistency (Hamzah and Niswar, 2022). Cronbach's alpha has a lower limit of 0.70, which practically guarantees group homogeneity and internal consistency and ensures that the right information is acquired from trusted sources (Naway *et al.*, 2018).

**Table 2: Reliability Analysis Results**

Dimensions	Number of items	Cronbach's Alpha
System quality	5	0.727
Information quality	5	0.721
Service quality	5	0.689
System use	5	0.784
Net benefit	5	0.858

## 4.0 RESULTS

### 4.1 Respondent profile

Questionnaires were distributed to students who have used SIS for more than a year and hence collected data from Diploma 2, bachelor 2, and Bachelor 3 students at TIA Mwanza campus. Out of the 214 valid questionnaires, 102 (47.70%) and 112 (52.30%) were filled out by male and female respondents, respectively. In addition, 65 respondents (30.4%) were between the ages of 18 and 22; 107 (50%) were between the ages of 23 and 28; 32 (15.0%) were between the ages of 29 and 34; and 10 (4.6%) were beyond the age of 35. For educational level, 95 (44.4%) and 119 (55.6%) respondents were diploma bachelor students respectively.

### 4.2 Binary Logistic Regression Model Results

**Table 3: Binary Logistic Results**

Element	B	S.E.	Sig.	Exp(B)
System quality	1.467	0.261	.001*	4.337
Information quality	2.220	0.512	.019*	6.017
Service quality	1.040	0.329	.434*	2.831
System use	1.314	0.202	.017*	3.243
Net benefit	2.340	0.150	.028*	6.761
Constant	1.020	0.151	0.000*	2.774

\* Significant at  $p < 0.05$

## 5.0 FINDING AND DISCUSSION

### 5.1 Quality of SIS and Students' Satisfaction

The coefficient of system quality was found to have a positive significance on customer satisfaction, with an odds ratio of 4.337 as a predictor of customer satisfaction among system users as shown in Table 1. The results indicate that as system quality increases, the likelihood of customer satisfaction increases 4 times the previous satisfaction. Students' satisfaction with SIS is influenced by features including flexibility, reliability, good layout, and interactive communication. These results suggest that students are more likely to be satisfied with their overall use of the system when they believe the SIS service to be of high quality. These findings are consistent with earlier studies by (Olatokun and Mala, 2012; Chandra *et al.*, 2018; Meilani, Suroso, and Yuliati, 2020; Macailao, 2023) which showed a strong relationship between service quality and customer satisfaction and contrary to (Wahyudi, Respati and Tomo Ardianto, 2017; Martins *et al.*, 2019). Additionally, the outcomes are in line with DeLone and McLean's (2003) model. Therefore, system quality is one of the crucial elements of an organization's information system success and may improve user satisfaction.

### 5.2 SIS Information Quality and Students' Satisfaction

The result shows that SIS information quality significantly and positively influences student satisfaction, suggesting that users who can obtain quality information from SIS are more likely to be satisfied. According to Table 1, SIS information quality is associated with an odds ratio of 6.017 as a predictor of customer satisfaction. This means that SIS users who have access to quality information are approximately 6 times more likely to enhance their satisfaction compared to those who lack such information, assuming all other variables in the analysis remain unchanged. Student's satisfaction with SIS is influenced by features like comprehensive, accurate, up-to-date, well-formatted, and consistent information. The results suggested that students are more satisfied with the SIS when they view the information it provides as helpful for their academic endeavors. Information quality plays a significant part in determining student satisfaction. These results concurred with those made by DeLone and McLean's (2003) model which suggested that information quality is a driver for IS success in an organization which leads to user satisfaction. However, the results aligned with earlier research by (Juhriyansyah et al., 2020; Jumardi et al., 2019; Rachmat et al., 2022) and opposed by (Yakubu & Dasuki, 2018).

### **5.3 SIS Service Quality and Students' Satisfaction**

Findings indicated that Service Quality has a positive but insignificant relationship with user satisfaction with SIS ( $p\text{-value}=.434>0.05$ ), hence Hypothesis 3 is not supported. Findings revealed that the SIS support service at TIA is reliable, accessible, and easy to communicate with and hence positively affects the student satisfaction with SIS's service quality. These findings implied that when students perceive the support service provided by SIS to be of high quality, they are more likely to be satisfied with the overall experience of using the system. These results coped with previous research conducted by (Ghazal et al., 2018) but were inconsistent with other studies that demonstrated a significant influence of service quality on user satisfaction (Macailao, 2023; Martins et al., 2019; Meilani et al., 2020). Moreover, the theoretical foundation from DeLone and McLean's (2003) model was disapproved as the model stated that service quality is a key component of IS success in an organization which enhances user satisfaction.

### **5.4 System Use and Students' Satisfaction**

The result supports hypothesis 4 such that system use significantly and positively affects student satisfaction. In Table 1, the odds ratio for the ease of use was found to be 3.243. This indicates that when the system is easy to use, users are 3 times more likely to be satisfied, after keeping constant other variables in the model. Consequently, the results showed significantly that the system use aspects such as simplicity, flexibility, and a low likelihood of error have a favorable

impact on student's satisfaction with SIS. These results suggested that the SIS's usability and convenience of use boost student acceptability and motivate students to actively use the system. These findings implied the user-friendly nature of SIS, with its ease-of-use fosters student acceptance and encourages students to utilize the system actively. The DeLone and McLean (2003) model has validated the results. The model made clear that system utilization affects an organization's success with IS, which impacts user satisfaction. In a similar vein, previous researchers discovered that system use has a significant positive impact on user satisfaction (Macailao, 2023; Martins et al., 2019; Yakubu & Dasuki, 2018). On the other hand, other researchers contradict the observed results (Rachmat et al., 2022).

### **5.5 Net Benefits and Students' Satisfaction**

Furthermore, a positive and significant was proposed between net benefit and student satisfaction, implying that when net benefit increases students are more likely to be satisfied. Net benefit has an odds ratio of 6.761 as a predictor of customer satisfaction among system users as shown in Table 2. Results indicated that when net benefit increases, students are 7 times more likely to be satisfied, controlling other factors in the model. This view has been buttressed by DeLone and McLean's (2003) model. The model made it clear that net benefit is a necessary component for the successful adoption and use of IS in an organization, which in turn raises the user's satisfaction level. The findings are also affiliated with other research that established a link between user satisfaction and the benefits of the systems' high performance (Martins *et al.*, 2019; Meilani, Suroso, and Yuliati, 2020; Rachmat, Hamzah and Niswar, 2022). As a result, Juhriyansyah *et al* ( 2020) concluded that net benefit is a fundamental factor for the success of information systems in higher learning institutions.

## **6.0 CONCLUSION AND RECOMMENDATION**

### **6.1 Conclusion**

SIS is incorporated into HLIs to boost institutional competitiveness and performance. In this case, it is impossible to dispute the use of SIS in HLIs. Thus, in this study system quality, information quality, system use, and net benefit all significantly and positively affect students' satisfaction with the use of SIS, whereas service quality had negligible effects. The significant results were supported by DeLone and McLean's (2003) model, from which all the tested constructs were derived.

### **6.2 Recommendation**

The hypothesis tested revealed that, with the exceptional service quality variable which proved to be insignificant, other variables including information quality, system use, system net benefit, and system quality proved to be positive and

significant with students' satisfaction with the use of SIS at TIA Mwanza campus. The findings recommend that TIA management should capitalize on upgrading the SIS by improving the service quality which proved to be insignificant and make the SIS support service more reliable and accessible to raise the student's satisfaction level with the use of SIS. Increased levels of satisfaction will result in higher rates of student loyalty and retention.

### 6.3 Study Limitations and Further Studies

The study was conducted in the TIA Mwanza campus only taking students as users of SIS. The binary Logistic Model was applied in analyzing data. Further studies can be conducted on other campuses of TIA, all TIA campuses, and other HLIs in Tanzania considering lecturers and administrative staff as system users. On top of that other models such as Structuring Equation Modelling (SEM) can be used to analyze data

### REFERENCES

- Abbas, B., Wekke, I. S., Qadri, M. N., Razak, A., Saeka, S., Idris, I., & Almana, L. O. (2021). Effectiveness of Academic Information System Quality on Improving Student Satisfaction in Higher Education Institutions. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 350–357.
- Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style, and organizational performance. *Journal of Innovation and Knowledge*, 4(2), 104–114. <https://doi.org/10.1016/j.jik.2017.07.003>
- Agama, I., Negeri, I., Sorong, I., Papua, W., Qadri, M. N., Razak, A., & Almana, L. O. (2021). *Effectiveness of Academic Information System Quality on Improving Student Satisfaction in Higher Education Institutions*. 350–357.
- Chandra, T., Ng, M., Chandra, S., & Priyono. (2018). The effect of service quality on student satisfaction and student loyalty: An empirical study. *Journal of Social Studies Education Research*, 9(3), 109–131. <https://doi.org/10.17499/jsser.12590>
- Darwis, M., Arhas, S. H., & Nasrullah, M. (2021). Online Learning Based on the Borneo E-Learning Application (A Study of Student Satisfaction Analysis in the Use of the BEL Application at the Universitas Borneo Tarakan). *International Joined Conference on Social Science (ICSS 2021)*, 603(Icss), 576–581.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60–95. <https://doi.org/10.1287/isre.3.1.60>

- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- DeLone, W. H., & McLean, E. R. (2016). Information Systems Success Measurement. In *Foundations and Trends® in Information Systems* (Vol. 2, Issue 1). <https://doi.org/10.1561/29000000005>
- Ghazal, S., Aldowah, H., & Umar, I. (2018). Critical factors to learning management system acceptance and satisfaction in a blended learning environment. *Lecture Notes on Data Engineering and Communications Technologies*, 5, 688–698. [https://doi.org/10.1007/978-3-319-59427-9\\_71](https://doi.org/10.1007/978-3-319-59427-9_71)
- Gürkut, C., & Nat, M. (2018). Important factors affecting student information system quality and satisfaction. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(3), 923–932. <https://doi.org/10.12973/ejmste/81147>
- Hidayah, N. A., Fetrina, E., & Taufan, A. Z. (2020). Model Satisfaction Users Measurement of Academic Information System Using End-User Computing Satisfaction (EUCS) Method. *Applied Information System and Management (AISM)*, 3(2), 119–123. <https://doi.org/10.15408/aism.v3i2.14516>
- Irfan, M., Jaya Putra, S., & Ali Ramdhani, M. (2019). The readiness model of information technology implementation among universities in Indonesia. *Journal of Physics: Conference Series*, 1175(1). <https://doi.org/10.1088/1742-6596/1175/1/012267>
- Islamic, S. (2021). *The influence of service quality on student satisfaction*. 20(5), 1252–1257. <https://doi.org/10.17051/ilkonline.2021.05.139>
- Ismail, M., Celebi, E., & Nadiri, H. (2019). *How Student Information System Influence Students ' Trust and Satisfaction towards the University?: An empirical study in a multicultural environment*. XX. <https://doi.org/10.1109/ACCESS.2019.2934782>
- Juhriyansyah, D., DWI, H., Mahmud, M., Irfan, P., & Baharuddin, B. (2020). DALE. *International Journal of Advanced Science and Technology*, 29(4), 1909–1919.
- Jumardi, R., Studi, P., Informatika, T., Tinggi, S., & Bontang, T. (2019). *Modifikasi Model Adaptasi Delone & Mclean Dalam Analisis Perkembangan teknologi informasi dan komunikasi memungkinkan dimulainya era dimana informasi dan komunikasi bukanlah sesuatu yang sulit didapatkan . Teknologi informasi dan komunikasi saat ini menja*. 11(2), 1789–1801.
- Kavuta, K. D., & Nyamanga, S. (2018). The factors affecting the implementation of students' records management system in higher learning institutions in

- Tanzania a case of the Institute of Accountancy Arusha. *International Journal of Scientific and Technology Research*, 7(2), 150–156.
- Kayanda, A., Busagala, L., & Tedre, M. (2020). User perceptions on the use of Academic Information Systems for decision-making support in the context of Tanzanian Higher Education. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 16(1), 72–87.
- Kobero, W., & Swallehe, O. (2022). The Effects of Service Quality on Customer Satisfaction in Higher Learning Institutions in Tanzania. *Open Journal of Business and Management*, 10(03), 1373–1391. <https://doi.org/10.4236/ojbm.2022.103074>
- Le, H. Q. (2020). Factors affecting students' decision to select private universities in Vietnam. *Journal of Asian Finance, Economics and Business*, 7(4), 235–245. <https://doi.org/10.13106/JAFEB.2020.VOL7.NO4.235>
- Macailao, M. C. (2023). *Assessment Of The Student Information And Accounting System At Isabela State University -Cauayan City Campus: A Study On Students ' Perception And Satisfaction On The System Quality ...* (Issue July) [Isabela State University]. <https://www.researchgate.net/publication/372105281>
- Magambo, L., Dida, M. A., & Kaijage, S. F. (2020). Towards an Online Portal for Locating Students' Private Rental Accommodation in Tanzania. *Journal of Information Systems Engineering and Management*, 5(3). <https://doi.org/10.29333/jisem/8388>
- Maggay, J. G. (2017). Student Information and Accounting System of Cagayan State University – Lasam Campus, Philippines. *International Journal of Information Research and Review*, 4(2), 3701–3705. [https://www.researchgate.net/profile/Jake-Maggay/publication/327097792\\_Student\\_Information\\_And\\_Accounting\\_System\\_Of\\_Cagayan\\_State\\_University\\_-\\_Lasam\\_Campus\\_Philippines/Links/5b77bce4299bf1d5a711cd54/Student-Information-And-Accounting-System-Of-Cagayan-Sta](https://www.researchgate.net/profile/Jake-Maggay/publication/327097792_Student_Information_And_Accounting_System_Of_Cagayan_State_University_-_Lasam_Campus_Philippines/Links/5b77bce4299bf1d5a711cd54/Student-Information-And-Accounting-System-Of-Cagayan-Sta)
- Mailizar, M., Almanthari, A., & Maulina, S. (2021). Examining teachers' behavioral intention to use e-learning in the teaching of mathematics: An extended team model. *Contemporary Educational Technology*, 13(2), 1–16. <https://doi.org/10.30935/CEDTECH/9709>
- Martins, J., Branco, F., Gonçalves, R., Au-Yong-Oliveira, M., Oliveira, T., Naranjo-Zolotov, M., & Cruz-Jesus, F. (2019). Assessing the success behind the use of education management information systems in higher education. *Telematics and Informatics*, 38, 182–193. <https://doi.org/10.1016/j.tele.2018.10.001>



- Mavetera, P., Lubbe, S., & Meyer, J. A. (2017). A Student Perspective Into Information Quality of Web Sites. *The African Journal of Information Systems*, 9(3), 148–170.
- Mbazor, D. N. (2021). Assessment of the Influence of On-Campus Housing Quality and Facilities on Students' Academic Performance at the Federal University of Technology, Akure, Nigeria. *Baltic Journal of Real Estate Economics and Construction Management*, 9(1), 14–32. <https://doi.org/10.2478/bjreecm-2021-0002>
- Meilani, L., Suroso, A. I., & Yuliati, L. N. (2020). Evaluasi Keberhasilan Sistem Informasi Akademik dengan Pendekatan Model DeLone dan McLean. *Jurnal Sistem Informasi Bisnis*, 10(2), 137–144. <https://doi.org/10.21456/vol10iss2pp137-144>
- Mtani, H. (2022). Factors Affecting Learning Management Systems Usage in Higher Learning Institutions in Tanzania: A Case of University of Dodoma. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 18(1), 7–26.
- Muslim Diekola, A., & Ahmad Yusni, B. (2018). Analysis of the Factors affecting Satisfaction of Students in using University Portal: A Case Study of Universiti Utara Malaysia. *International Journal of Advanced Studies in Social Science & Innovation*, 2(2), 1–19. <https://doi.org/10.30690/ijassi.22.01>
- Mwandosya, G. I., Montero, C. S., Mbise, E. R., & Oyelere, S. S. (2020). *Mobile Learning Systems' Functionalities in Higher Education Institutions in Tanzania: Teachers and Students' Readiness at the College of Business Education*. January, 1–13. [https://doi.org/10.1007/978-3-030-36778-7\\_1](https://doi.org/10.1007/978-3-030-36778-7_1)
- Naway, F. A., Sukung, A., Haris, I., & Rahmat, A. (2018). Quality approach in the development of management information system in higher education. *Jurnal Manajemen*, 22(1), 104–114. <https://doi.org/10.24912/jm.v22i1.316>
- Nelima, P., Mbugua, S. M., & Kilwake, J. (2016). Factors Affecting Information Systems User Satisfaction in Kenyan Universities. *Journal of Emerging Trends in Computing and Information Sciences*, 7(2), 116–127.
- Ojo, A. I. (2017). Validation of the Delone and Mclean information systems success model. *Healthcare Informatics Research*, 23(1), 60–66. <https://doi.org/10.4258/hir.2017.23.1.60>
- Olatokun, W. M., & Mala, A. (2012). Assessing Students' Satisfaction With an E-Learning System: The Case Of National Open University Of Nigeria. *African Journal Contemporary and ICTs*, 5(4), 138–155.
- Pham, L., Limbu, Y. B., Bui, T. K., Nguyen, H. T., & Pham, H. T. (2019). Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam. *International Journal of Educational*

*Technology in Higher Education*, 16(1). <https://doi.org/10.1186/s41239-019-0136-3>

- Rachmat, A., Hamzah, B., & Niswar, M. (2022). Evaluation of Academic Information System Using Delone and Mclane Success Model: A Case Study of Academic Information System Hasanuddin University. *Jurnal Sistem Informasi*, 18(1), 62–75. <https://doi.org/10.21609/jsi.v18i1.1114>
- Reza, V., Snapp, P., Dalam, E., Di, I. M. A., Socialization, A., Cadger, O. F., To, M., Cadger, S., Programpadang, R., Hukum, F., Hatta, U. B. U. B., Sipil, F. T., Hatta, U. B. U. B., Danilo Gomes de Arruda, Bustamam, N., Suryani, S., Nasution, M. S., Prayitno, B., Rois, I., ... Rezekiana, L. (2020). No Title. *Business Law Binus*, 7(2), 33–48. [http://repository.radenintan.ac.id/11375/1/PERPUS\\_PUSAT.pdf%0Ahttp://business-law.binus.ac.id/2015/10/08/pariwisata-syariah/%0Ahttps://www.ptonline.com/articles/how-to-get-better-mfi-results%0Ahttps://journal.uir.ac.id/index.php/kiat/article/view/8839](http://repository.radenintan.ac.id/11375/1/PERPUS_PUSAT.pdf%0Ahttp://business-law.binus.ac.id/2015/10/08/pariwisata-syariah/%0Ahttps://www.ptonline.com/articles/how-to-get-better-mfi-results%0Ahttps://journal.uir.ac.id/index.php/kiat/article/view/8839)
- Saputri, A., & Mulyani, E. (2022). The Impact of Academic Information Systems on Students' Satisfaction in Higher Education. *Studies in Educational Management*, 12(October), 1–9. <https://doi.org/10.32038/sem.2022.12.01>
- Twum, F. O., & Peprah, W. K. (2020). The Impact of Service Quality on Students' Satisfaction. *International Journal of Academic Research in Business and Social Sciences*, 10(10), 169–181. <https://doi.org/10.6007/ijarbss/v10-i10/7923>
- Wahyudi, F., Respati, H., & Tomo Ardianto, Y. (2017). Information and Knowledge Management Study on DAPODIK Information System: User Satisfaction as Mediation of System Quality and Information Quality on Net Benefit. *Information and Knowledge Management*, 7(7), 53–62. [www.iiste.org](http://www.iiste.org)
- Yakubu, M. ., & Dasuki, S. . (2018). Asessing E L Earning S Ystems S success in N Nigeria : an Aplication of the DeLone and McLean Information Systems Success M Odel. *Journal of Information Technology Education: Research*, 17, 182–202