

Factors Influencing User Satisfaction with the Academic Information System (SIAKAD) Using the DeLone & McLean Model

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ABSTRACT

This study examines the influence of System Quality, Service Quality, and Information Quality on the usage and user satisfaction regarding the Academic Information System (SIAKAD) at Universitas Negeri Jakarta (UNJ), utilizing the DeLone and McLean Information Systems Success Model (2003) as a conceptual framework. Although SIAKAD supports critical academic activities, it has encountered operational issues, including system disruptions and access-related complaints during course registration periods. This quantitative study employed a survey method involving 185 students from the Digital Business program (cohorts 2022–2024). Data were analyzed using Partial Least Squares Structural Equation Modeling (SEM-PLS) with SmartPLS software. The results indicate that all seven proposed hypotheses were supported: system quality, service quality, and information quality each exert a positive and significant influence on usage and user satisfaction, while usage has a positive and significant influence on user satisfaction. Information Quality emerged as the strongest predictor of Usage, whereas Usage was the strongest predictor of User Satisfaction. These findings confirm the relevance of the DeLone and McLean model in the context of an academic information system with mandatory usage, and provide empirical insights for improving the quality of SIAKAD services at Universitas Negeri Jakarta.

Keywords: SIAKAD; DeLone and McLean; System Quality; Information Quality; Service Quality; User Satisfaction

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INTRODUCTION

The growth of the internet and advancements in Information and Communication Technology (ICT) have influenced nearly every aspect of life. The education sector is one area that has experienced a significant impact from these technological developments. Digital technology is now widely utilized across all processes, ranging from administration to instruction. One specific application of technology in higher education is the development of information systems designed to support the activities of students, faculty members, and administrative staff.

Many higher education institutions are currently developing Academic Information Systems to support academic activities for students, lecturers, and educational staff. In this context, Universitas Negeri Jakarta (UNJ) has implemented an Academic Information System (SIAKAD) that serves as an integrated platform for managing academic data and services. This system supports various student academic activities, such as filling out Study Plan Cards (KRS), accessing class schedules, viewing Study Result Cards (KHS) and grades, and obtaining academic information.

Once an information system has been implemented, it is essential for an organization to evaluate its success. Information system success is measured not merely by the system's existence, but also by how it is utilized and perceived by its users. DeLone and McLean (1992) posited that to measure the success of an operational information system, organizations must assess user satisfaction as feedback for the system's further development. This view is reinforced by various empirical studies such as those by Al-Adwan et al. (2022), Salam & Farooq (2020), and Sayaf (2023) demonstrating that user satisfaction plays a pivotal role in evaluating information system effectiveness, particularly within educational settings.

Given the diverse functions it performs and the high frequency of student usage, the success of the SIAKAD system is a crucial factor in facilitating smooth academic activities. However, in practice, the SIAKAD UNJ system that managed by the Pusat Teknologi Informasi dan Komunikasi (PUSTIKOM) continues to face various issues. Common user complaints include system errors and difficulties accessing the platform at specific times, particularly during the course registration (KRS) period.

Evaluating the success of an information system cannot be based solely on its existence; rather, it must also consider how the system is used and perceived by its users. DeLone and McLean (2003) developed the Information System Success Model, which posits that information system success is determined by system quality, service quality, and information quality that subsequently influence use and user satisfaction. This model has been widely applied to academic information systems across various countries. Given the strategic role of SIAKAD in supporting students' academic activities, a comprehensive evaluation is required to determine the extent to which system quality, information quality, and service quality drive system usage and foster user satisfaction. Such an evaluation serves as a foundation for system improvement and development, aiming to deliver a superior user experience and enhance the effectiveness of academic services (DeLone & McLean, 2016).

In the context of academic information systems, particularly within higher education institutions, evaluating user satisfaction has become increasingly important, given the systems' various functions and their direct impact on the smooth operation of students' academic processes. However, empirical studies specifically examining user satisfaction with Academic Information Systems using the DeLone and McLean model framework within the Universitas Negeri Jakarta environment remain very limited. This situation highlights the need for research that re-examines the relationships between variables in the model, taking into account the specific characteristics and challenges associated with the implementation of SIAKAD UNJ.

Based on this background, this study aims to examine the influence of system quality, information quality, and service quality on system use and user satisfaction regarding the SIAKAD at Universitas Negeri Jakarta, utilizing the DeLone and McLean model as a conceptual framework. By focusing on students as the primary users, this research is expected to provide empirical insights into the factors influencing SIAKAD user satisfaction, while also offering recommendations to Universitas Negeri Jakarta, specifically PUSTIKOM for enhancing the quality of SIAKAD services.

LITERATURE REVIEW

Information System Success Model

DeLone and McLean (1992) developed an information systems success model in response to the diverse definitions and measurements of information systems success found in prior research. This model aims to integrate various measures of information systems success into a comprehensive conceptual framework. In their initial model, DeLone and McLean identified six key variables: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. In light of advancements in information technology and insights from various empirical studies, DeLone and McLean subsequently updated the model. In the revised model, DeLone and McLean (2003) added a "service quality" dimension and combined "individual impact" and "organizational impact" into a single construct "net benefits." Consequently, the updated information systems success model comprises six key constructs: system quality, information quality, service quality, use, user satisfaction, and net benefits.

System Quality

DeLone & McLean (1992) state that system quality is a key dimension in assessing the success of an information system, referring to the technical and performance characteristics of the system itself. System quality reflects the extent to which the system functions stably, is easy to use and responsive, and is free from technical errors that could disrupt user activities. Furthermore, according to Geebren et al. (2021), system quality is defined as the user's perception of the system's performance quality, encompassing ease of access, ease of use, ease of navigation, and visual appeal. In this study, system quality is used to measure the capabilities of the mobile banking system; if users perceive the system as high-quality, their levels of trust and satisfaction tend to increase.

Service Quality

DeLone & McLean (2003) define service quality as the extent to which system support services meet user needs through technical assistance, responsiveness to issues, and the provision of adequate information and guidance. The concept of service quality in information systems is heavily influenced by the service quality theory developed by Parasuraman et al. (1988) through the SERVQUAL model. Within this framework, service quality is understood as the gap between user expectations and perceived service performance, encompassing dimensions such as responsiveness, reliability, empathy, assurance, and tangibles. In line with this, Mater et al. (2024) state that service quality is the level of excellence perceived by users regarding all support services and human interactions within the system, which facilitate smooth usage and the resolution of arising issues.

Information Quality

DeLone & McLean (1992) explained that information quality refers to the characteristics of the information output produced by an information system, which reflects the extent to which the information is able to meet user needs. Information quality emphasizes the useful value of information for users, especially in supporting understanding, decision making, and carrying out activities related to the use of information systems. In a study conducted by Saputra et al. (2023), information quality refers to the extent to which users can utilize a system to obtain accurate, timely, relevant, and complete information, while also facilitating the completion of their tasks.

Use

DeLone & McLean (1992) explain that "use" refers to the extent to which an information system is utilized by users to support their activities and tasks. System usage reflects not only the presence or absence of interaction with the system but also encompasses the intensity, frequency, and manner in which users leverage the features available within the information system. In their updated model, DeLone and McLean (2003) emphasize that the "use" variable plays a complex and contextual role. They state that the meaning of system usage can vary depending on whether the system is used voluntarily or on a mandatory basis.

User Satisfaction

In the information systems success model proposed by DeLone & McLean (1992), user satisfaction is positioned as an evaluative indicator reflecting how users assess an information system based on their experience using it. User satisfaction represents the user's affective and cognitive response to the system, formed through repeated interactions between the user and the information system. According to Uzir et al. (2021), user satisfaction is a psychological aspect heavily influenced by the user's experience and their level of trust (reliability) in a brand or product. Meanwhile, according to M. Al-Okaily et al. (2023), user satisfaction represents the level of satisfaction or dissatisfaction experienced by users after evaluating the extent to which an information system delivers expected benefits.

The Influence of System Quality on Use

Research by Abdulkareem & Mohd Ramli (2022) in the context of government digital services indicates that system quality has a positive and significant impact on actual system usage. Responsive and stable systems enhance user convenience, thereby encouraging the frequency and intensity of use. Similar findings were reported by Çelik & Ayaz (2022), who stated that service quality significantly influences the usage of student information systems; specifically, improving service quality leads to more effective system usage. Furthermore, Shahzad et al. (2021) found that e-learning system quality plays a crucial role in enhancing system usage among students.

H1 : System quality has a positive effect on the use of SIAKAD UNJ.

The Influence of System Quality on User satisfaction

Research by Mater et al. (2024) within the context of student relationship management systems found that system quality significantly influences user satisfaction. Users are more satisfied when the system demonstrates strong technical performance and minimal disruptions. Similar findings by Salam & Farooq (2020) indicate that system quality contributes significantly to user satisfaction with web-based learning

systems. Furthermore, A. Al-Okaily et al. (2021) also state that system quality is a primary factor influencing user satisfaction with commercial bank enterprise systems.

H2 : System quality has a positive effect on user satisfaction

The Influence of Service Quality on Use

Research by Çelik & Ayaz (2022) on student information system services indicates that service quality significantly influences system usage, particularly when users require technical support and operational assistance. Another study by Abdulkareem & Mohd Ramli (2022) on e-government services found that service quality encourages users to engage more actively with the system, as they feel supported and well-served. This is reinforced by Shahzad et al. (2021), who state that adequate service quality plays a crucial role in fostering the use of e-learning systems.

H3: Service quality has a positive effect on the use of SIAKAD UNJ

The Influence of Service Quality on User satisfaction

Research by M. Al-Okaily et al. (2025) demonstrates the influence of service quality on user satisfaction within government information systems. It further explains that responsive and solution-oriented services enhance satisfaction, which in turn fosters adoption and positive perceptions of the system. A study by Mamakou et al. (2024) also found that service quality positively impacts overall customer satisfaction, with users highly valuing high-quality service when accessing e-commerce websites. Similar results were obtained by Al-Adwan et al. (2022), who emphasized that service quality is a dominant factor in shaping user satisfaction with e-learning systems.

H4: Service quality has a positive effect on the user satisfaction

The Influence of Information Quality on Use

Research by Naveed et al. (2021) indicates that information quality has a positive influence on the use of digital learning systems. Furthermore, Al-Hattami (2024) suggests that information quality drives the use of accounting information systems among micro-enterprises in Yemen. In the context of social media in higher education, A. M. Al-Rahmi et al. (2021) found that high information quality enhances student engagement with and usage of social media, as students perceive the information provided to be reliable.

H5: Information quality has a positive effect on the use of SIAKAD UNJ

The Influence of Information Quality on User satisfaction

Research by M. Al-Okaily & Al-Okaily (2022) on corporate information systems demonstrates that information quality has a significant positive impact on user satisfaction. Users feel satisfied when the system provides high-quality information that is complete, accurate, up-to-date, and reliable. Another study by Alduaij et al. (2024) on digital learning platforms indicates a direct relationship between information quality and user satisfaction, where higher information quality corresponds to higher levels of user satisfaction. Furthermore, Aji et al. (2024) found that information quality is a primary predictor of user satisfaction; high-quality information enhances user satisfaction and fosters positive perceptions of e-government systems.

H6: Information quality has a positive effect on user satisfaction

The Influence of Use on User satisfaction

The study by Yoon & Kim (2023) indicates that increased system usage leads to higher levels of satisfaction, as intensive and sustained use contributes to improved user performance. Research by A. M. Al-Rahmi et al. (2021) also found that the experience of using social media is a crucial factor in shaping user satisfaction. This is reinforced by Noudoostbeni et al. (2018), who stated that usage has a significant influence on user satisfaction regarding library management systems.

H7: Use has a positive effect on user satisfaction

METHODS OF RESEARCH

This study employs a quantitative approach with a descriptive design. The quantitative approach was selected because it focuses on processing numerical data to identify relationships between variables and to test hypotheses objectively using statistical methods (Sahir, 2021). The study aims to analyze the causal relationships between the research variables specifically system quality, service quality, and information quality and the variables of use and user satisfaction. The population of this study consists of all students in the Digital Business study program at Universitas Negeri Jakarta (classes of 2022–2024) who use SIAKAD UNJ for their academic activities. The sample size was determined using Slovin's formula with a 5% margin of error, resulting in a sample of 185 respondents. This study utilizes primary data collected through a survey method, using a questionnaire distributed online via Google Forms.

The data processing in this study begins with the presentation of descriptive statistics, covering respondent characteristics and an overview of the research data. The subsequent stage involves statistical analysis performed using SmartPLS 4 software. During this analysis phase, the Partial Least Squares Structural Equation Modeling (PLS-SEM) method is employed to analyze and evaluate the relationships between the latent constructs within the research model. The data analysis process was conducted in two main stages. The first stage involved evaluating the measurement model (outer model), which included a test of convergent validity. Indicators were considered adequate if they had a minimum outer loading of 0.7, while an Average Variance Extracted (AVE) value greater than 0.5 was deemed acceptable (Hair et al., 2022). Subsequently, discriminant validity was assessed using the cross-loading approach, the Fornell-Larcker criterion, and the Heterotrait-Monotrait Ratio. Reliability was also evaluated using Cronbach's Alpha and Composite Reliability, with a minimum threshold of 0.7 (Hair et al., 2022).

RESULT AND DISCUSSION

1) Outer Model Evaluation Results

Validity Convergent

Convergent validity testing is conducted to determine the extent to which the indicators within a construct accurately measure that construct. Convergent validity is assessed based on two criteria: outer loading values and the Average Variance Extracted (AVE) value. An indicator is considered valid if its outer loading value exceeds 0.7 (Hair et al., 2022), whereas a construct is deemed to possess good convergent validity if its AVE value exceeds 0.5 (Fornell & Larcker, 1981). The test results indicate that all indicators for each research variable—namely system quality, service quality, information quality, use, and user satisfaction—have outer loading values above 0.7. Furthermore, the AVE values for all constructs exceed 0.5. Thus, all indicators in this study meet the criteria for convergent validity.

Table 1. Outer loading dan AVE

Variabel	Item	Outer loading	Average variance extracted (AVE)
<i>System quality</i>	SQ.1	0,891	0,791
	SQ.2	0,877	
	SQ.3	0,890	
	SQ.4	0,858	
	SQ.5	0,921	
	SQ.6	0,897	
<i>Service quality</i>	Sv-Q.1	0,934	0,826
	Sv-Q.2	0,879	
	Sv-Q.3	0,906	
	Sv-Q.4	0,901	
	Sv-Q.5	0,911	
	Sv-Q.6	0,927	
	Sv-Q.7	0,904	
<i>Information quality</i>	IQ.1	0,944	0,846
	IQ.2	0,892	
	IQ.3	0,921	
	IQ.4	0,903	
	IQ.5	0,938	
<i>Use</i>	US.1	0,919	0,864
	US.2	0,932	
	US.3	0,940	
	US.4	0,937	
	US.5	0,920	
<i>User satisfaction</i>	Sat.1	0,950	0,893
	Sat.2	0,934	
	Sat.3	0,951	

(Source: Processed by the researcher, 2026)

Discriminant Validity

Discriminant validity testing is conducted to determine the extent to which a construct truly differs from other constructs, thereby establishing that each construct possesses its own unique characteristics. In this study, discriminant validity is assessed using three approaches: cross-loadings, the Fornell-Larcker criterion, and the Heterotrait-Monotrait Ratio (HTMT).

Table 2. Cross Loading

Item	Information quality	Service quality	System quality	Use	User satisfaction
IQ.1	0,944	0,173	0,143	0,596	0,532
IQ.2	0,892	0,180	0,105	0,539	0,511
IQ.3	0,921	0,150	0,177	0,581	0,550
IQ.4	0,903	0,188	0,173	0,578	0,515
IQ.5	0,938	0,162	0,204	0,590	0,564
IQ.1	0,098	0,934	0,144	0,425	0,451
SvQ.1	0,198	0,879	0,215	0,464	0,462
SvQ.2	0,197	0,906	0,185	0,485	0,484
SvQ.3	0,200	0,901	0,159	0,498	0,466
SvQ.4	0,167	0,911	0,202	0,496	0,494
SvQ.5	0,157	0,927	0,216	0,491	0,475
SvQ.6	0,153	0,904	0,217	0,450	0,469
SvQ.7	0,201	0,233	0,891	0,523	0,517
SQ.1	0,147	0,097	0,877	0,384	0,419
SQ.2	0,155	0,229	0,890	0,430	0,445
SQ.3	0,111	0,166	0,858	0,378	0,412
SQ.4	0,192	0,221	0,921	0,479	0,505
SQ.5	0,111	0,156	0,897	0,362	0,453
US.1	0,583	0,514	0,435	0,919	0,667
US.2	0,568	0,477	0,456	0,932	0,729
US.3	0,604	0,469	0,430	0,940	0,760
US.4	0,566	0,476	0,469	0,937	0,740
US.5	0,595	0,488	0,466	0,920	0,733
Sat.1	0,572	0,461	0,503	0,771	0,950
Sat.2	0,557	0,508	0,449	0,710	0,934
Sat.3	0,519	0,506	0,521	0,734	0,951

(Source: Processed by the researcher, 2026)

The calculation results in Table 2 show that each indicator has the highest loading value on its own construct compared to other constructs (exceeding 0.8). Thus, all indicators meet the discriminant validity criteria based on the cross-loading approach.

Table 3. Fornell-Larcker Criterion

	Information quality	Service quality	System quality	Use	User satisfaction
Information quality	0,920				
Service quality	0,185	0,909			
System quality	0,175	0,211	0,889		
Use	0,627	0,521	0,485	0,930	
User satisfaction	0,582	0,520	0,520	0,781	0,945

(Source: Processed by the researcher, 2026)

Table 3 above shows that the square root of the AVE for each construct is greater than its correlation with other constructs, thereby satisfying the Fornell-Larcker criterion.

Table 4. Heterotrait-Monotrait (HTMT) Ratio

	<i>Information quality</i>	<i>Service quality</i>	<i>System quality</i>	<i>Use</i>	<i>User satisfaction</i>
<i>Information quality</i>					
<i>Service quality</i>	0,192				
<i>System quality</i>	0,180	0,216			
<i>Use</i>	0,655	0,541	0,502		
<i>User satisfaction</i>	0,614	0,545	0,546	0,821	

(Source: Processed by the researcher, 2026)

Table 4 shows that all HTMT values between constructs are below 0.90; the highest value is found in the relationship between the use and user satisfaction constructs (0.821), while the lowest is found in the relationship between information quality and system quality (0.180). Thus, it can be concluded that all constructs meet the discriminant validity criteria based on the HTMT approach.

Reliability Test

Reliability testing is conducted to determine the extent of a construct's internal consistency in measuring the variable in question. In this study, reliability is assessed using two indicators: Cronbach's Alpha and Composite Reliability. A construct is considered reliable if it has Cronbach's Alpha and Composite Reliability values greater than 0.7.

Table 5. Cronbach's Alpha dan Composite Reliability

	<i>Cronbach's alpha</i>	<i>Composite reliability (rho_a)</i>	<i>Composite reliability (rho_c)</i>
<i>System quality</i>	0,947	0,954	0,958
<i>Service quality</i>	0,965	0,965	0,971
<i>Information quality</i>	0,955	0,956	0,965
<i>Use</i>	0,961	0,961	0,969
<i>User satisfaction</i>	0,940	0,941	0,962

(Source: Processed by the researcher, 2026)

All constructs in this research have Cronbach's Alpha and Composite Reliability values above 0.7, so all constructs in this research have a very good level of reliability or internal consistency.

2) Inner Model Evaluation Results

R-Square Test

The R-square test is conducted to determine the extent to which exogenous variables explain the variation in the endogenous variable within the model.

Table 6. R-Square

	<i>R-square</i>	<i>R-square adjusted</i>
<i>User satisfaction</i>	0,691	0,685

(Source: Processed by the researcher, 2026)

In Table 6, the R-square value for the user satisfaction variable is 0.691, this indicates that the variables of system quality, service quality, information quality, and use collectively explain 69.1% of the variation in user satisfaction, while the remaining 30.9% is explained by variables outside the model. The R-square value for user satisfaction falls within the moderate-to-strong range, based on the classification by Hair et al. (2022), where an R^2 value of 0.75 is considered strong, 0.50 is moderate, and 0.25 indicates a weak level of explanation.

F-Square

The f-square test is conducted to determine the magnitude of the contribution or impact of an exogenous variable on an endogenous variable within the model if that variable were to be removed.

Table 7. F-Square

	<i>System quality</i>	<i>Service quality</i>	<i>Information quality</i>	<i>Use</i>	<i>User satisfaction</i>
<i>System quality</i>				0,284	0,134
<i>Service quality</i>				0,356	0,105
<i>Information quality</i>				0,708	0,114
<i>Use</i>					0,171
<i>User satisfaction</i>					

(Source: Processed by the researcher, 2026)

Table 7 shows that information quality makes the largest contribution to use, with an f-square value of 0.708 (large category), followed by service quality at 0.356 (large category) and system quality at 0.284 (medium category). Meanwhile, regarding user satisfaction, the largest contribution comes from system quality (0.134), followed by information quality (0.114) and service quality (0.105)—all three falling into the small category—whereas the use variable contributes to user satisfaction at a medium level, with an f-square value of 0.171.

Multicollinearity Test

The multicollinearity test is conducted to ensure there is no excessively high correlation between independent variables in the structural model, which could lead to bias in the estimation results. A model is considered free from multicollinearity issues if the Variance Inflation Factor (VIF) value is below 5 (Hair et al., 2022).

Table 8. Multicollinearity Test

	VIF
<i>Information quality -> use</i>	1,057
<i>Information quality -> user satisfaction</i>	1,805
<i>Service quality -> use</i>	1,072
<i>Service quality -> user satisfaction</i>	1,454
<i>System quality -> use</i>	1,068
<i>System quality -> user satisfaction</i>	1,371
<i>use -> user satisfaction</i>	2,941

(Source: Processed by the researcher, 2026)

Table 8 shows that all VIF values in the structural model fall within the range of 1.057 to 2.941, with the highest value observed for the path from "use" to "user satisfaction." All these values are below 5, therefore, it can be concluded that there is no issue of multicollinearity among the independent variables in this study's structural model.

Hypothesis Testing

Hypothesis testing was conducted to determine the significance of the influence between variables in the research model using the bootstrapping procedure. A hypothesis is considered accepted if the T-statistic value is greater than 1.96 and the P-value is less than 0.05 at a 5% significance level (Hair et al., 2022).

Table 9. Hypothesis Testing

Hipotesis	Original Sample	T Statistic	P Values	Hasil
System quality -> use	0,321	6,272	0,000	Diterima
System quality -> user satisfaction	0,238	4,732	0,000	Diterima
Service quality -> use	0,360	6,262	0,000	Diterima
Service quality -> user satisfaction	0,217	4,282	0,000	Diterima
Information quality -> use	0,504	11,179	0,000	Diterima
Information quality -> user satisfaction	0,252	4,655	0,000	Diterima
use -> user satisfaction	0,394	6,127	0,000	Diterima

(Source: Processed by the researcher, 2026)

The test results indicate that all seven hypotheses in this study were accepted, as each exhibited a T-statistic value above 1.96 and a P-value of 0.000 (< 0.05). The "use" variable had a path coefficient of 0.394. This represents the highest path coefficient influencing user satisfaction among the three quality variables, demonstrating that system usage plays a more significant role in shaping user satisfaction than direct perceptions of system quality.

Research results indicate that the higher the quality of the SIKAD UNJ system, the greater the intensity of its use by students. A system that is easily accessible, responsive, and free from technical glitches allows students to complete academic tasks without excessive effort, fostering a tendency to return to the system more frequently and comfortably. Conversely, when the system frequently encounters technical issues such as slow access speeds or failed request processing, students feel hindered and are inclined to delay or limit their interactions with the system, even though its use is mandatory. These findings align with research by A. M. Al-Rahmi et al. (2021) and Çelik and Ayaz (2022), which also established that system quality significantly influences the intensity of academic information system usage.

System quality has a positive and significant impact on user satisfaction, meaning that the better the technical performance of SIKAD, the higher the students' level of satisfaction with the system. User satisfaction with an information system is fundamentally shaped by the comparison between user expectations and the actual performance experienced. When the system operates stably and quickly with minimal disruptions, students feel their needs are met without significant obstacles, leading to a positive affective evaluation of the system. These findings are consistent with research by Varastika et al. (2025)

and M. Al-Okaily et al. (2025), which identified system quality as a key determinant of user satisfaction with academic information systems.

Service quality has a positive and significant effect on system usage; this means that the better the support service provided by the SIAKAD administrators, the higher the intensity of student system usage. Service quality reflects the extent to which the administrators, in this case PUSTIKOM UNJ are capable of providing responsive and reliable assistance when students encounter technical issues. When students are confident that any problems they face can be resolved quickly, they feel more assured and comfortable continuing to use the system actively, without the worry of being stuck with unresolved technical issues. This finding aligns with the study by Shahzad et al. (2021), which found that service quality contributes to the intensity of student information system usage.

Service quality has a positive and significant impact on user satisfaction, meaning that the better the quality of SIAKAD support services, the higher the level of student satisfaction. User satisfaction with a system is determined not only by the system's technical performance but also by the treatment and support users receive when encountering difficulties. When students feel attended to and adequately assisted while facing issues, they tend to overlook potential technical shortcomings and still rate their overall experience positively. These findings are consistent with research by Yakubu & Dasuki (2018) and Mater et al. (2024), which found that service quality plays a significant role in shaping user satisfaction with academic information systems.

Information quality has a positive and significant effect on system usage, exhibiting the highest path coefficient among all paths leading to usage; this indicates that information quality is the most dominant factor driving students to use SIAKAD. This can be explained by the primary reason students access SIAKAD: to obtain accurate and timely academic information, such as course schedules, grades, and course registration status. When the information provided by the system is accurate, complete, and relevant to their needs, students feel that their information requirements are truly met each time they access the system, thereby encouraging them to continue relying on it as their primary source of information. These findings align with the research of Shaya et al. (2023), who also found that information quality exerts the greatest influence on usage compared to other quality variables, as well as the studies by Çelik and Ayaz (2022) and A. M. Al-Rahmi et al. (2021), which likewise confirm this significant relationship.

Information quality has a positive and significant impact on user satisfaction, meaning that the more accurate and relevant the information provided by SIAKAD, the higher the level of student satisfaction. Academic information presented in a timely and relevant manner enables students to make academic decisions with greater confidence, such as selecting courses or monitoring their grade progress without questioning the accuracy of the data they view. These findings are consistent with research by Sayaf (2023), who also identified information quality as the strongest predictor of user satisfaction, as well as with Al-Adwan et al. (2022), who likewise confirmed this significant relationship.

Use has a positive and significant effect on user satisfaction, exhibiting the highest path coefficient among all paths leading to user satisfaction; this implies that the greater the intensity and depth of SIAKAD usage, the higher the level of satisfaction experienced by students. These findings indicate that user satisfaction is not merely shaped by perceptions of system, service, or information quality, but is also significantly influenced by actual experience and the accumulation of user interactions with the system. The more frequently and deeply students utilize the various features of SIAKAD, the more tangible benefits they derive from the system, which in turn reinforces their positive evaluation of the system as a whole. These findings are consistent with the research of Noudoostbeni et al. (2018) and A. M. Al-Rahmi et al.

(2021), both of which identified a significant relationship between use and user satisfaction.

CONCLUSION

All seven hypotheses in this study (H1–H7) were accepted. The study confirms that the three quality dimensions of the DeLone and McLean model that is system quality, service quality, and information quality consistently influence both use and user satisfaction regarding SIAKAD UNJ system. Information quality emerged as the primary factor driving students' decisions to utilize the system, far outweighing the roles of technical quality or support services. Meanwhile, actual usage experience proved to be a stronger driver of satisfaction than mere perceptions of quality. This pattern underscores that for information systems primarily serving as sources of academic data, the accuracy and currency of information are more critical determinants than technical aspects alone.

The study's findings also contribute to the ongoing debate regarding the relevance of the "use" variable in mandatory information systems. Contrary to studies questioning the role of use in mandatory contexts, these results demonstrate that variations in usage intensity remain significant predictors of user satisfaction; thus, the argument that mandatory usage eliminates behavioral variability among users is not fully supported in the context of academic information systems. Consequently, this research provides empirical evidence that the success of academic information systems in Indonesian higher education institutions must be viewed through a multidimensional lens, with improvement priorities varying based on which quality dimensions are most directly experienced by users.

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