

# An Evaluation of Academic Information System Success at Widyatama University Using the DeLone and McLean Model

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## ABSTRACT

*The Academic Information System (AIS) is the backbone of operations and services in modern higher education. Evaluating the quality of AIS is crucial to ensure satisfaction and its success in supporting academic activities. This study aims to evaluate the quality of SIAKAD-UTama using the DeLone & McLean Model. The DMM identifies six dimensions of information system success System Quality, Information Quality, Service Quality, Use, User Satisfaction, and Net Benefits. The study employed a quantitative approach, using a survey of 200 respondents who were SIAKAD-UTama users. Data were analyzed using Partial Least Squares Structural Equation Modeling using SmartPLS 4.0. The results of the measurement model analysis indicated that all constructs met the requirements for convergent validity ( $AVE > 0.50$ ) and reliability ( $CR > 0.70$ ). The results of the structural model analysis show that Information Quality has the most significant influence on User Satisfaction  $\beta = 0.387$ ;  $p = 0.000$  and Use  $\beta = 0.298$ ;  $p = 0.002$ . System Quality has a significant influence on User Satisfaction  $\beta = 0.215$ ;  $p = 0.014$  but not significant on Use  $\beta = 0.156$ ;  $p = 0.069$ . Service Quality also has a significant influence on User Satisfaction  $\beta = 0.178$ ;  $p = 0.045$ . There is a significant relationship between Use and User Satisfaction. Both User Satisfaction  $\beta = 0.356$ ;  $p = 0.000$  and Use  $\beta = 0.289$ ;  $p = 0.001$  significantly influenced Net Benefits. The results of this study provide insight for Widyatama University to optimize AIS by prioritizing improving Information Quality to increase satisfaction, utilization, and benefits for the academic community.*

**Keywords:** Academic Information System, DeLone and McLean Model, Information Quality, Service Quality, System Quality.

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## INTRODUCTION

In the rapidly evolving digital era, universities worldwide, including those in Indonesia, face mounting pressure to adopt and optimize Academic Information Systems (AIS) to support operations, management, and services for stakeholders, particularly students and faculty. AIS has become the backbone of higher education administration, managing various critical aspects ranging from student admissions and academic planning to scheduling, grading, and graduation processes. The quality of AIS is no longer merely a technical consideration; rather, it is a strategic factor influencing user satisfaction, learning effectiveness, institutional reputation, and, ultimately, university competitiveness [1], [2]. Given the functional complexity and its broad impact, a comprehensive evaluation of AIS quality is imperative to ensure that the system functions optimally and provides significant value to the entire academic ecosystem.

Widyatama University, an expanding private higher education institution in Bandung, relies on an AIS known as SIAKAD-UTama (Sistem Informasi Akademik - Universitas Widyatama) to support

its operational activities [3]. Consequently, understanding and assessing the quality of SIAKAD-UTama is a vital step for the institution to continuously enhance services and ensure user satisfaction. To conduct a comprehensive and structured evaluation of an information system's quality, a well-tested and widely recognized framework is required. One of the most dominant and frequently utilized models for evaluating information system success is the DeLone & McLean Model (DMM) [4].

DMM was initially introduced by William H. DeLone and Ephraim R. McLean in 1992 and subsequently updated in 2003 to accommodate the changes and developments within the information systems environment [5]. The model offers a multidimensional perspective in measuring information system success by identifying six interrelated dimensions: System Quality, Information Quality, Service Quality, Use, User Satisfaction, and Net Benefits [6]. These six dimensions form a cycle where system, information, and service quality influence both Use and User Satisfaction, which in turn determine the Net Benefits perceived by both users and the institution. DMM has been adopted and validated across e-learning systems, e-government, and healthcare information systems, demonstrating its flexibility and reliability as an evaluative tool [7].

Although DMM has proven robust in information systems research, its comprehensive application for evaluating AIS within the Indonesian private university context remains relatively limited. Specifically, an in-depth evaluation of SIAKAD-UTama using DMM has not yet been conducted. Therefore, this study aims to address this gap by providing a quality evaluation of SIAKAD-UTama utilizing the six dimensions of DMM. The novelty of this research lies in its empirical analysis that integrates technical aspects, service quality, and user perceptions to establish an evidence-based and contextual foundation for system development at Widyatama University.

The application of DMM in evaluating SIAKAD-UTama focuses not only on technical aspects but also encompasses user perceptions, impact on productivity, and contributions to overall institutional goals. This study aims to evaluate the quality of SIAKAD-UTama through the lens of DMM. The evaluation is based on relevant literature analysis, previous studies concerning SIAKAD-UTama, and the application of DMM principles to provide an overview of the system's strengths and potential areas for improvement, which are expected to serve as a basis for future system development.

## LITERATURE REVIEW

The DeLone & McLean Model (DMM), or the Information Systems Success Model, was first introduced by William H. DeLone and Ephraim R. McLean in 1992 as a response to the fragmentation of information systems success research and the lack of a standardized definition. The original model proposed that information systems success is a multidimensional and interdependent construct consisting of six dimensions: System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact [5]. System Quality refers to the intrinsic characteristics of the system, such as reliability and ease of use, while Information Quality pertains to system outputs, such as accuracy and relevance. Use and User Satisfaction are influenced by both quality dimensions and, in turn, affect impact at both the individual and organizational levels.

In 2003, DeLone and McLean updated the DMM to accommodate technological advancements, particularly the internet, and shifts in the business environment [4], [5], [8]. The updates included: (1) the addition of the Service Quality dimension, which covers technical support aspects such as responsiveness and empathy; (2) the consolidation of Individual Impact and Organizational Impact into a single dimension called Net Benefits; and (3) the expansion of the Use dimension to include Intention to Use. The updated DMM positions System, Information, and Service Quality as exogenous variables that influence Use/Intention to Use and User Satisfaction. These two variables then influence each other and collectively determine the achievement of Net Benefits, which provide feedback for system improvements, creating a dynamic cycle [6], [9].

DMM serves as a robust framework for evaluating the success of Academic Information Systems (AIS). Methodologically, most studies employ a quantitative approach through surveys using Likert

scales and analyze causal relationships between dimensions using statistical techniques such as Structural Equation Modeling (SEM) or multiple regression [9]–[14]. Research findings indicate diverse patterns but offer critical insights. A study on AIS at a Malaysian university found that Information Quality and Service Quality were the strongest predictors of student User Satisfaction, while System Quality had a significant indirect influence [11], [15]. Conversely, research in Indonesia by Mkinga & Mandari (2020) on e-learning systems highlighted the central roles of System Quality and Information Quality in shaping Intention to Use among faculty members [16]. Another study focusing on administrative staff perceptions by Marthasari et al. (2024) revealed that Net Benefits are heavily influenced by User Satisfaction, which is driven by Service Quality [17]. These findings confirm the flexibility of DMM while demonstrating that the significance of each dimension may vary depending on the user group, whether students, faculty, or administrative staff.

The application of DMM in AIS evaluations is broad and necessitates contextualization, as factors such as academic culture, higher education regulations, or the specific characteristics of private universities are often inadequately addressed in existing studies [18]–[22]. The majority of research is cross-sectional, failing to capture the dynamics of user perception and long-term system impact. Furthermore, measuring and operationalizing Net Benefits, particularly at the institutional level, remains subjective and difficult to quantify [6], [11], [13], [15], [16], [23]–[29]. Within campus environments, the Use construct often shows limited variation, suggesting that its relevance and measurement should be re-evaluated in comparison to User Satisfaction and Net Benefits.

### **The Relationship of System Quality with User Satisfaction and Use**

In the DMM framework, System Quality refers to the intrinsic performance characteristics of the information system itself, encompassing aspects such as usability, reliability, flexibility, availability, response time, and data integration [5]. A high-quality AIS should be intuitive and easy to navigate for students and faculty with varying levels of technical expertise; it must remain stable with minimal downtime and be responsive to user commands. Empirical evidence regarding the System Quality of SIAKAD-UTama was provided by Achmad et al. (2022), whose study found that users (students) agreed the AIS was "easy to learn, accessible, and usable within a relatively short time," and noted that "the error rate on the website tends to be low" [30]. These findings directly indicate a high degree of ease of use, efficiency, reliability, and access speed within the system. The DMM suggests that superior System Quality positively impacts both User Satisfaction and the intensity of system Use. When users encounter a system that is user-friendly, fast, reliable, and error-free, they are more likely to be satisfied. Conversely, a system that is difficult to navigate, sluggish, or prone to frequent errors leads to frustration and dissatisfaction. The link between System Quality and User Satisfaction has been extensively documented in various AIS studies. For instance, research by Rachmat et al. (2022) at Hasanuddin University on the NeoSIA system found that System Quality has a significant positive influence on User Satisfaction [11]. Similarly, a study by Suaryana et al. (2016) successfully demonstrated the positive effect of System Quality on User Satisfaction [31]. Therefore, based on the theoretical foundations of DMM, supported by empirical evidence from previous studies and the positive indicators of SIAKAD-UTama itself, the following hypothesis is formulated:

Hypothesis 1: System Quality has a positive and significant effect on User Satisfaction.

Beyond influencing satisfaction, high System Quality is also expected to encourage system Use. Users are more likely to frequently utilize and explore the features of a system they perceive as easy to use, efficient, reliable, and responsive. If SIAKAD-UTama is perceived as user-friendly and capable of facilitating the rapid completion of academic tasks, as indicated by Achmad et al. (2022), then students and faculty will be more motivated to access it routinely and leverage its various functions. While some studies occasionally find indirect or weak relationships between System Quality and Use, a high-quality system remains a critical prerequisite for optimal adoption and utilization, particularly in the long term. Although research at Hasanuddin University did not find a significant effect of System Quality on Actual Use [11], this does not diminish the theoretical validity of the assumption that an inherently better system is more likely to be used effectively. Consequently, the following hypothesis is proposed:

Hypothesis 3: System Quality has a positive and significant effect on Use.

### **The Relationship of Information Quality with User Satisfaction and Use**

Information Quality pertains to the outputs generated by an information system. In the context of an AIS, this encompasses the accuracy of grade data, the completeness of course schedules, the timeliness of announcements, the relevance of learning materials, the clarity of information formats, and data consistency [5]. High-quality information is an absolute prerequisite for effective decision-making by both students and faculty. DMM positions Information Quality as a key predictor of User Satisfaction and Use. When users receive accurate, complete, timely, and relevant information through the AIS, they experience higher satisfaction because the system effectively fulfills their informational needs. Conversely, inaccurate, incomplete, or outdated information leads to significant dissatisfaction and can undermine user trust in the system. Research at Hasanuddin University found that Information Quality has a significant positive influence on AIS User Satisfaction [11]. Studies by Sultono et al. (2016) at the Indonesia University of Education and Suaryana et al. (2016) at Udayana University yielded similar results, where Information Quality, alongside System Quality and Service Quality, exerted a significant effect on User Satisfaction [31], [32]. Although direct data regarding the accuracy and completeness of SIAKAD-UTama information is not explicitly available, usability research by Achmad et al. (2022) noted that users agreed the AIS "met user expectations and needs by displaying the latest data and information" [30]. This statement serves as a positive indicator of timeliness, a critical component of Information Quality. Based on these theoretical arguments and empirical evidence from previous studies, as well as preliminary indications from SIAKAD-UTama, the following hypothesis is formulated:

Hypothesis 2: Information Quality has a positive and significant effect on User Satisfaction.

Similar to System Quality, superior Information Quality is expected to drive system Use. Users are more likely to access and rely on the AIS if they perceive the provided information to be reliable, accurate, comprehensive, and up-to-date. If students know that exam schedules or the latest grades are consistently available quickly and correctly on the AIS, they will be more motivated to check it routinely. The relationship between Information Quality and Use is supported by the logic that high information value increases user dependence on the system as a primary information source. While research by Rachmat et al. (2022) did not find a significant effect of Information Quality on Actual Use, potentially due to the mandatory nature of system use, theoretically, robust Information Quality remains a vital driver for meaningful utilization, particularly when users have the option to seek alternative information sources. Consequently, the following hypothesis is proposed:

Hypothesis 4: Information Quality has a positive and significant effect on Use.

### **The Relationship of Service Quality with Use**

Service Quality was added to the DMM during its 2003 update to reflect the critical importance of the support provided by IS service providers, particularly in environments where systems have become increasingly complex and users require technical assistance [13]. This dimension encompasses responsiveness (speed of response), service reliability (the ability to provide accurate assistance), assurance (staff competence and courtesy), and empathy (individualized attention). For SIAKAD-UTama, Service Quality can be assessed through the availability and performance of the helpdesk provided by the Information Technology Bureau and the Academic Bureau. Information available on the AIS login page indicates the existence of various support channels, including telephone, email, and WhatsApp services for both units [3]. The availability of easily accessible communication channels, particularly WhatsApp, which is highly popular in Indonesia, serves as a strong preliminary indicator of efforts to provide responsive service. The DMM posits that high Service Quality contributes to system Use. When users encounter issues or have inquiries regarding the AIS, they experience greater satisfaction if they can easily obtain prompt, effective, and solution-oriented assistance. Conversely, service that is sluggish, unhelpful, or difficult to access increases user frustration and diminishes overall Use, even if the system and the information themselves are of high

quality. A study by Suaryana et al. (2016) at Udayana University found that Service Quality, along with System Quality and Information Quality, has a significant influence on the use of web-based AIS [31]. Consequently, the following hypothesis is formulated:

Hypothesis 8: Service Quality has a positive and significant effect on Use.

### **The Relationship of Use and User Satisfaction**

The DMM recognizes a reciprocal relationship between User Satisfaction and Use [5], [33], [34]. User Satisfaction is expected to positively influence Use. The logic underlying this hypothesis is that users who are satisfied with the AIS, due to its ease of use, high-quality information, and adequate support, will be more motivated to utilize the system more frequently and intensively. Satisfied users may be more willing to explore advanced features and establish the AIS as their primary tool for academic activities. Conversely, Use also positively influences User Satisfaction. Users who frequently interact with the AIS tend to become more familiar with its functionalities, more proficient in navigation, and better equipped to leverage the system's full potential. Repeated and successful usage experiences, in turn, enhance User Satisfaction with the system. This cyclical relationship indicates that satisfaction and usage are mutually reinforcing, creating a virtuous cycle that can lead to optimal system utilization and maximum benefits. Acknowledging this reciprocal link is one of the DMM's strengths in capturing the dynamics of information system user behavior. Consequently, the following hypothesis is proposed:

Hypothesis 5: Use has a positive and significant effect on User Satisfaction.

### **The Relationship of User Satisfaction and Use with Net Benefits**

Net Benefits represents the pinnacle dimension of the DMM, reflecting the overall positive impact of information system use on both individuals and the organization [5]. In the context of an AIS, benefits for individual students may include improved time efficiency, such as during course registration (Kartu Rencana Studi), easier access to academic information, better decision-making regarding study plans, and enhanced learning productivity. For faculty, benefits may manifest as increased efficiency in classroom management and grade entry. For the university as an organization, these benefits include operational and administrative efficiency, enhanced transparency, and ultimately, an improvement in academic service quality and institutional reputation. The DMM positions User Satisfaction and Use as direct predictors of Net Benefits. User Satisfaction is expected to positively influence Net Benefits. When users are satisfied with the AIS, they are more likely to enthusiastically utilize the system to achieve their academic goals, thereby maximizing the benefits derived. Furthermore, satisfaction itself can be considered a psychological benefit. Similarly, Use positively influences Net Benefits. The more frequently and deeply the AIS is utilized, the greater the potential benefits for the user. Intensive use allows users to fully exploit system capabilities to support their activities. Research at Hasanuddin University found that both User Satisfaction and Actual Use have a significant positive influence on Individual Impact, which is a component of Net Benefits [11]. A study by Meilani et al. (2020) at Sultan Ageng Tirtayasa University also found that Use and User Satisfaction significantly and positively affect the Net Benefits of an AIS [35]. Consequently, the final two hypotheses are proposed:

Hypothesis 6: User Satisfaction has a positive and significant effect on Net Benefits.

Hypothesis 7: Use has a positive and significant effect on Net Benefits.

## **METHODOLOGY**

This study employs both explanatory and confirmatory research designs, which aim to establish and analyze the relationships between variables and determine how one variable influences another [36]. The research population consists of all active users of SIAKAD-UTama, including students, faculty, and administrative staff. The minimum sample size was set at 200 respondents, adhering to general guidelines for covariance-based Structural Equation Modeling (SEM), which require a sample-to-estimated-parameter ratio of 5:1 to 10:1 [36]. The sampling criteria include students, faculty, and

administrative staff who have utilized SIAKAD-UTama for at least one active semester to ensure that respondents possess sufficient experience with the system. Data collection was conducted using an online questionnaire distributed via the Google Forms platform. The sampling method utilized purposive sampling combined with stratification based on user roles (students, faculty, and administrative staff) to ensure proportional representation from each SIAKAD-UTama user group [36]. This study utilizes SEM with a covariance-based approach; however, hypothesis development and testing were conducted using SmartPLS 4.0 software. The analytical technique adopts Confirmatory Factor Analysis (CFA) to assess the validity and reliability of the measurement instruments (measurement model), along with Regression Weight analysis to test the causal relationships between constructs within the structural model. The constructs in this study consist of exogenous constructs and endogenous constructs.

## RESULTS

### Structural Equation Modeling Analysis

The results of the Structural Equation Modeling (SEM) analysis, which examines the influence of System Quality (X1), Information Quality (X2), and Service Quality (X3) on Use (Y1), User Satisfaction (Y2), and Net Benefits (Y3), are presented in Figure 1 below.

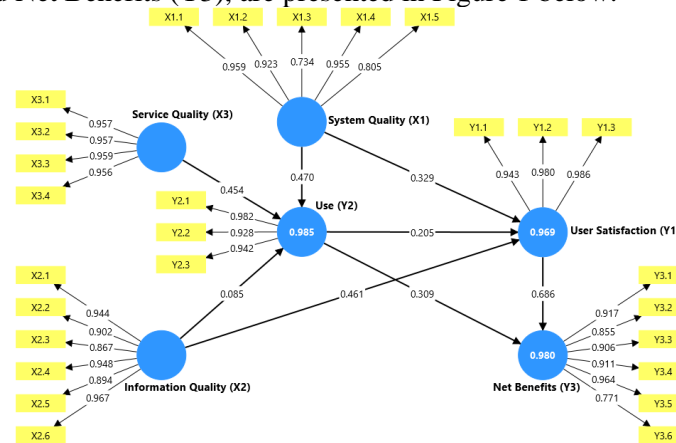


Figure 1. SEM Test Results

#### 1) Goodness of Fit Test

Validity was assessed using the Average Variance Extracted (AVE). A construct is considered to possess adequate validity if its AVE value is  $\geq 0.500$ . Based on the results of the Partial Least Squares (PLS) Algorithm analysis presented in Table 1, all constructs in this study yielded AVE values exceeding 0.500. This indicates that each construct sufficiently accounts for the variance of its respective indicators.

Table 1. Convergent Validity Results (AVE)

Variable	AVE	Information
System Quality (X1)	0.682	Valid
Information Quality (X2)	0.712	Valid
Service Quality (X3)	0.645	Valid
Use (Y1)	0.755	Valid
User Satisfaction (Y2)	0.701	Valid
Net Benefits (Y3)	0.668	Valid

Reliability was evaluated through Composite Reliability (CR) and Cronbach's Alpha. A construct is deemed reliable if the CR value is  $\geq 0.700$  and the Cronbach's Alpha is  $\geq 0.600$ . As demonstrated in Table 2, all constructs exceeded the recommended thresholds for both CR and Cronbach's Alpha, thereby indicating robust internal consistency among the indicators.

Table 2. Reliability Test Results

Variable	Cronbach's alpha	CR	Information
System Quality (X1)	0.845	0.891	Reliable
Information Quality (X2)	0.871	0.902	Reliable
Service Quality (X3)	0.823	0.876	Reliable
Use (Y1)	0.889	0.921	Reliable
User Satisfaction (Y2)	0.861	0.895	Reliable
Net Benefits (Y3)	0.834	0.882	Reliable

The assessment of model fit indicates that the majority of the criteria used to evaluate the model's viability have been satisfied. Consequently, the model is considered acceptable, demonstrating a favorable fit between the theoretical model and the empirical data.

## 2) Causality Testing

Causality testing was conducted to examine the hypothesized relationships between latent variables. The path coefficients and statistical significance (p-values) were obtained through a bootstrapping procedure with 5,000 resamples. A summary of the hypothesis testing results is presented in Table 3.

Table 3. Summary of Hypothesis Testing Results

Hypothesis	Causal Relationship	Path coefficient ( $\beta$ )	T-statistic	P-value	Information
H1	X1 $\rightarrow$ Y2	0.215	2.456	0.014	Significant
H2	X2 $\rightarrow$ Y2	0.387	4.781	0.000	Significant
H3	X1 $\rightarrow$ Y1	0.156	1.823	0.069	Not Significant
H4	X2 $\rightarrow$ Y1	0.298	3.112	0.002	Significant
H5	Y1 $\rightarrow$ Y2	0.189	2.201	0.028	Significant
H6	Y2 $\rightarrow$ Y3	0.356	3.890	0.000	Significant
H7	Y1 $\rightarrow$ Y3	0.289	3.245	0.001	Significant
H8	X3 $\rightarrow$ Y2	0.178	2.011	0.045	Significant

## DISCUSSION

### The Influence of System Quality (X1) on User Satisfaction (Y2) and Use (Y1)

Analysis results indicate that System Quality (X1) has a significant positive influence on User Satisfaction (Y2) ( $\beta = 0.215$ ,  $p = 0.014$ ). This implies that higher perceived quality of SIAKAD-UTama, in terms of ease of use, reliability, access speed, availability, and learnability, corresponds to increased levels of user satisfaction. This finding supports hypothesis H1 and is consistent with previous research utilizing the Information Systems Success Model (ISSM/DMM), including studies conducted at Hasanuddin University [11] and Udayana University [31]. Furthermore, these results are supported by usability research from Achmad et al. (2022), which found that SIAKAD-UTama users agree the system is easy to learn, efficient, and maintains a low error rate, all of which are critical components of System Quality (X1) [30]. However, the influence of System Quality (X1) on User Satisfaction (Y2) in this study ( $\beta = 0.215$ ) is lower than that of Information Quality (X2) ( $\beta = 0.387$ ). This suggests that for SIAKAD-UTama users, the quality of information generated by the system is a more dominant determinant of satisfaction, even though System Quality remains a vital factor. In contrast, System Quality (X1) does not exert a significant influence on Use (Y1) ( $\beta = 0.156$ ,  $p = 0.069$ ); consequently, hypothesis H3 is rejected. Although the relationship direction is positive, the significance level fails to meet the required threshold of  $p < 0.05$ . This finding aligns with prior research at Hasanuddin University, which similarly found no significant impact of System Quality (X1) on Use (Y1) [11]. A plausible explanation for this result is that the use of SIAKAD-UTama is mandatory for students, faculty, and administrative staff to fulfill academic and administrative obligations. Therefore, system usage occurs regardless of the perceived System Quality (X1), provided the system remains accessible and functional. Users may lack the alternative to opt-out, meaning perceptions of system quality do not directly translate into higher usage intensity. Nevertheless, poor System Quality (X1) may still adversely affect user satisfaction and the long-term intention to continue utilizing the system.

### The Influence of Information Quality (X2) on User Satisfaction (Y2) and Use (Y1)

The results of the analysis demonstrate that Information Quality (X2) exerts a significant positive influence on User Satisfaction (Y2) ( $\beta = 0.387$ ,  $p = 0.000$ ) and a significant positive influence on Use (Y1) ( $\beta = 0.298$ ,  $p = 0.002$ ); thus, hypotheses H2 and H4 are accepted. Notably, the impact of Information Quality (X2) on User Satisfaction (Y2) yielded the largest path coefficient among all predictor variables for satisfaction. This indicates that the accuracy, completeness, timeliness, relevance, clarity, and security of the information provided by SIAKAD-UTama are paramount factors in determining user satisfaction. When users, specifically students and faculty, receive academic information that is accurate (such as grades and course schedules), comprehensive, and up-to-date through SIAKAD-UTama, their trust and satisfaction with the system increase significantly. This finding aligns with the research by Achmad et al. (2022), which revealed that users agree SIAKAD-UTama displays the latest data and information, a key indicator of Information Quality [30].

The consistency of these results with studies at Hasanuddin University, UPI, and Udayana University [11], [31], [32] further strengthens the position of Information Quality as a primary pillar of SIAKAD-UTama success. Furthermore, the significant influence of Information Quality (X2) on Use (Y1) suggests that superior information quality provided by SIAKAD-UTama leads to more intensive system utilization. Although the use of SIAKAD-UTama is mandatory, the availability of high-quality information encourages users to access and rely on the system more frequently as a primary information source. Users may become more proactive in verifying information and utilizing various features to obtain comprehensive details, thereby making SIAKAD-UTama an integral part of their academic routine. This indicates that Information Quality (X2) not only fosters user satisfaction but also drives deeper and more meaningful system engagement.

### **The Influence of Service Quality (X3) on User Satisfaction (Y2)**

The results of the analysis indicate that Service Quality (X3) has a significant positive influence on User Satisfaction (Y2) ( $\beta = 0.178$ ,  $p = 0.045$ ). Consequently, hypothesis H8 is accepted. Although the path coefficient is not as substantial as those for Information Quality (X2) or System Quality (X1), the influence remains statistically significant. This finding demonstrates that the quality of support provided by the SIAKAD-UTama service providers, specifically the Academic Bureau and the Information Technology Bureau of Widyatama University, contributes to overall user satisfaction. Factors such as responsiveness, reliability, empathy, and the accessibility of helpdesk services [3] serve as critical determinants. When users encounter technical difficulties or have inquiries regarding SIAKAD-UTama, the ability to obtain prompt, effective, and professional assistance significantly enhances their positive perception of the system as a whole. This finding aligns with the study by [31] at Udayana University, which also identified a significant impact of service quality on user satisfaction within web-based Academic Information Systems (AIS). In an increasingly complex information systems environment, the role of support services has become vital in ensuring an optimal user experience.

### **The Influence of Use (Y1) on User Satisfaction (Y2)**

The results of the analysis demonstrate a significant relationship between Use (Y1) and User Satisfaction (Y2). Specifically, Use (Y1) exerts a significant positive influence on User Satisfaction (Y2) ( $\beta = 0.189$ ,  $p = 0.028$ ); thus, hypothesis H5 is accepted. This finding indicates that more frequent and intensive utilization of SIAKAD-UTama corresponds to higher levels of perceived user satisfaction. Repeated interaction with the system allows users to become increasingly familiar with its features, more proficient in navigation, and better equipped to leverage the full potential of SIAKAD-UTama to fulfill their academic requirements. Positive experiences derived from consistent usage foster satisfaction and enhance the overall perception of the system. This relationship highlights the importance of encouraging active and exploratory usage among SIAKAD-UTama users to improve collective satisfaction levels.

### **The Influence of User Satisfaction (Y2) and Use (Y1) on Net Benefits (Y3)**

The results of the analysis demonstrate that both User Satisfaction (Y2) ( $\beta = 0.356$ ,  $p = 0.000$ ) and Use (Y1) ( $\beta = 0.289$ ,  $p = 0.001$ ) exert a significant positive influence on Net Benefits (Y3). Consequently, hypotheses H6 and H7 are accepted. Together, these two mediating variables explain approximately 59.8% of the variance in Net Benefits ( $R^2 = 0.59$ ), indicating a substantial impact. The influence of User Satisfaction on Net Benefits is slightly more pronounced than that of Use. This suggests that when users are satisfied with SIAKAD-UTama, they derive significant positive outcomes, such as time efficiency, ease of access to information, and improved decision-making in academic activities. High satisfaction levels encourage users to fully integrate the system into their routines, utilizing it to achieve academic objectives optimally. Similarly, intensive and in-depth usage directly contributes to Net Benefits. The more frequently and extensively the features of SIAKAD-UTama are utilized, the greater the potential benefits obtained. Students who engage with SIAKAD-UTama not only to view grades but also to access syllabi, communicate with faculty, or perform academic planning will experience greater benefits than those who only utilize standard features. These findings align with research by Rachmat et al. (2022) at Hasanuddin University and Meilani et

al. (2020) at Sultan Ageng Tirtayasa University, which found that both User Satisfaction and system Use significantly affect individual impact and Net Benefits Benefits [11], [35].

Overall, the findings of this study indicate that the Information Systems Success Model (ISSM/DMM) is generally valid within the context of the SIAKAD-UTama evaluation. Information Quality emerges as the most dominant factor influencing both satisfaction and Use, which subsequently contribute to the Net Benefits perceived by users. System Quality and Service Quality were also proven to be influential, particularly regarding User Satisfaction. These findings serve as a foundation for Widyatama University in formulating strategies to continuously enhance the quality of SIAKAD-UTama.

## CONCLUSION

Based on the results of the analysis and the subsequent discussion, several conclusions can be drawn regarding the evaluation of SIAKAD-UTama using the DeLone & McLean Information Systems Success Model. The findings demonstrate that Information Quality is the most dominant factor influencing both User Satisfaction and Use. This indicates that the accuracy, completeness, timeliness, relevance, clarity, and security of the information provided by SIAKAD-UTama are the primary considerations for users. This discovery aligns with previous research emphasizing the critical importance of high-quality information output within an Academic Information System (AIS). Consequently, future enhancement and development efforts for SIAKAD-UTama must prioritize Information Quality, ensuring that presented data remains consistently accurate, comprehensive, up-to-date, and relevant to user needs. Although their influence is not as substantial as that of Information Quality, System Quality and Service Quality were proven to have a significant impact on User Satisfaction. This shows that ease of use, reliability, system access speed, and the quality of support provided by the helpdesk remain essential factors in forming positive user perceptions. Widyatama University must continue to maintain and improve system performance while ensuring that user support services remain responsive and effective. The non-significant influence of System Quality on Use can be interpreted as a characteristic of SIAKAD-UTama mandatory usage for students and faculty in fulfilling their academic obligations. Nevertheless, maintaining high System Quality remains vital to prevent user frustration and ensure the satisfaction levels that influence the intention to utilize the system proactively. The significant relationship between User Satisfaction and Use reinforces the premise that these two constructs are mutually reinforcing. Satisfied users tend to utilize SIAKAD-UTama more intensively, while successful and intensive usage, in turn, enhances satisfaction. Together, User Satisfaction and Use contribute significantly to Net Benefits. This demonstrates that investments in quality improvements for SIAKAD-UTama yield tangible results for users, specifically regarding time efficiency and ease of information access, as well as for the institution in terms of operational efficiency and transparency.

## REFERENCES

- [1] U. Ali, "Delone And Mclean Method To Measure The Success Of Information Systems (Is) In Pakistan And Indonesia," *Asia Inf. Syst. J.*, vol. 2, no. 2, pp. 87–92, 2023, doi: 10.2404/aisj.v2i2.23605.
- [2] M. K. Al-Kofahi, H. Hassan, and R. Mohamad, "Information systems success model: A review of literature," *Int. J. Innov. Creat. Chang.*, vol. 12, no. 10, pp. 104–128, 2020.
- [3] U. Widyatama, "Portal SIAKAD-UTama," *utama.widyatama.ac.id*, 2025.
- [4] P. Saba *et al.*, "The DeLone and McLean Information Systems Success Model: What is the Future Evolution for Its Foundations, Components, and Applications?," *Commun. Assoc. Inf. Syst.*, vol. 57, pp. 878–898, 2025.
- [5] W. H. DeLone and E. R. Mclean, "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update," *J. Manag. Inf. Syst.*, vol. 19, no. 4, pp. 9–30, 2003.
- [6] F. A. Alaba, N. Yakubu, and D. I. Oluwajana, "Evaluating Based E-Learning Platforms In Nigerian Higher Education : An SEM-PLS Analysis Based On The Delone And Mclean Model," *JURIT J. Ris. Ilmu Tek.*, vol. 3, no. 1, pp. 30–43, 2025, doi: 10.59976/jurit.v1i1.152.
- [7] H. N. Sabeh, M. H. Husin, D. M. H. Kee, A. S. Baharudin, and R. Abdullah, "A Systematic Review of the DeLone and McLean Model of Information Systems Success in an E-Learning Context (2010-

- 2020),” *IEEE Access*, vol. 9, pp. 81210–81235, 2021, doi: 10.1109/ACCESS.2021.3084815.
- [8] M. Al-Kofahi, H. Hassan, and R. Mohamad, “DeLone and McLean information systems success model: a literature review,” *Int. J. Bus. Inf. Syst.*, vol. 48, no. 4, pp. 452–481, Jan. 2025, doi: 10.1504/IJBIS.2025.145551.
- [9] U. K. Sari, H. J. Setyadi, and P. P. Widagdo, “Evaluasi Kesuksesan Sistem Informasi Terpadu Layanan Prodi (SIPL0) Menggunakan Model Delone Dan Mclean Pada Fakultas Teknik Universitas Mulawarman,” *Adopsi Teknol. dan Sist. Inf.*, vol. 2, no. 1, pp. 48–58, 2023, doi: 10.30872/atasi.v2i1.536.
- [10] J. Wang, Y. Zhai, F. Shahzad, C. Troise, and S. Bresciani, “Exploring Business Strategies for the Sustainable Health Service Ecosystem: A Delone and McLean Information Systems Success Model Perspective,” *Bus. Strateg. Environ.*, vol. n/a, no. n/a, Dec. 2025, doi: <https://doi.org/10.1002/bse.70497>.
- [11] A. Rachmat, B. Hamzah, and M. Niswar, “Evaluation of Academic Information System Using Delone and Mclane Success Model: A Case Study ff Academic Information System Hasanuddin University,” *J. Sist. Inf.*, vol. 18, no. 1, pp. 62–75, 2022, doi: 10.21609/jsi.v18i1.1114.
- [12] F. Rozi, S. Fadli, and M. T. A. Zaen, “Application of the DeLone and McLean Success Model to the SEMAIK Website : A Case Study in Central Lombok,” *JISA (Jurnal Inform. dan Sains)*, vol. 08, no. 02, pp. 220–227, 2025.
- [13] K. Yongama and C. Baldreck, “Evaluating the success of a mobile self-service application using the DeLone and McLean model,” *South African J. Inf. Manag.*, vol. 26, no. 1, p. 1835, Jan. 2026, doi: 10.4102/sajim.v26i1.1835.
- [14] E. Elazzaoui, “Delone and McLean information systems success model in the public sector: A systematic review,” *J. Soc. Sci. Organ. Manag.*, vol. 3, no. 1, pp. 1–3, 2022.
- [15] A. Gormantara and E. Elisabeth, “Evaluation of the Success of the Academic Information System (SIAMIK) with the DeLone and McLean Model,” *J. Teknol. Inf. dan Pendidik.*, vol. 15, no. 2, pp. 99–109, 2023, doi: 10.24036/jtip.v15i2.666.
- [16] M. Mkinga and H. Mandari, “Evaluating Students Information System Success Using DeLone and McLean’s Model: Student’s Perspective,” *J. Int. Technol. Inf. Manag.*, vol. 29, no. 2, pp. 24–42, 2020, doi: 10.58729/1941-6679.1447.
- [17] G. I. Marthasari, W. Suharso, and S. E. Harianto, “Analyzing academic information system success: Applying delone and mclean success model,” in *AIP Conference Proceedings*, 2024, vol. 2927, no. 1, p. 60011.
- [18] A. Jeyaraj, “DeLone & McLean models of information system success: Critical meta-review and research directions,” *Int. J. Inf. Manage.*, vol. 54, p. 102139, 2020, doi: <https://doi.org/10.1016/j.ijinfomgt.2020.102139>.
- [19] M. Shim and H. S. Jo, “What quality factors matter in enhancing the perceived benefits of online health information sites? Application of the updated DeLone and McLean Information Systems Success Model,” *Int. J. Med. Inform.*, vol. 137, p. 104093, 2020, doi: <https://doi.org/10.1016/j.ijmedinf.2020.104093>.
- [20] D. Charisma, “Delone and Mclean Models in the Implementation of Asset Management Information System Analysis,” *Sosiohumaniora*, vol. 22, no. 3, p. 299, 2020, doi: 10.24198/sosiohumaniora.v22i3.28305.
- [21] B. Mafazi, “the Analysis of E-Learning Success By Using Delone and Mclean Success Model (Case Study: Pertamina University),” *J. Inf. Technol. Its Util.*, vol. 4, no. 1, p. 29, 2021, doi: 10.30818/jitu.4.1.3694.
- [22] I. A. Alfaki, “DeLone and McLean Information Systems Success Model in a Blended-Learning Context,” *Int. J. Inf. Commun. Technol. Educ.*, vol. 17, no. 4, pp. 1–17, 2021, doi: 10.4018/ijicte.20211001.0a18.
- [23] F. E. Sologia, R. W. Witjaksono, and L. Ramadani, “Evaluation of the Successful Implementation of Enterprise Resource Planning Based on SAP Using the DeLone & McLean Model,” *Int. J. Community Serv. Learn.*, vol. 8, no. 1, pp. 29–40, 2024, doi: 10.23887/ijcsl.v8i1.75924.
- [24] M. D. A. Rachman, Y. Durachman, and E. Khudzaeva, “Evaluation of User Satisfaction with Mobile-Based E-Wallet Platforms Using the Delone & Mclean Model (Case Study: Sakuku),” in *2023 11th International Conference on Cyber and IT Service Management (CITSM)*, 2023, pp. 1–6. doi: 10.1109/CITSM60085.2023.10455221.
- [25] Y. Maulana, A. Rahayu, L. Adi Wibowo, P. Harisandi, G. B. Advincula, and D. Prasetyo, “Evaluating the MBG Monitoring Application in Indonesian Schools Using the DeLone & McLean Model,” *IJORER Int. J. Recent Educ. Res.*, vol. 6, no. 3, pp. 632–650, 2025, doi: 10.46245/ijorer.v6i3.859.
- [26] N. Hendri *et al.*, “Evaluation of Financial Management Information System Using Modification of the Delone & Mclean Model During the Covid-19 Pandemic,” *Int. J. Prof. Bus. Rev.*, vol. 7, no. 5, pp. 1–20, 2022, doi: 10.26668/businessreview/2022.v7i5.e732.

- [27] A. N. Anas and F. Elisa, "Evaluation Of Health Information System Using Delone And Mclean," *Int. Dent. J.*, vol. 74, pp. S95–S96, 2024, doi: <https://doi.org/10.1016/j.identj.2024.07.862>.
- [28] S. C. Viontita and M. ER, "Evaluation of Surabaya population administration & civil registration systems using DeLone & McLean information system success model," *Procedia Comput. Sci.*, vol. 234, pp. 1154–1163, 2024, doi: <https://doi.org/10.1016/j.procs.2024.03.111>.
- [29] G. B. Akrong, Y. Shao, and E. Owusu, "Evaluation of the quality constructs of a tax management system based on DeLone and McLean IS success model," *Africa J. Manag.*, vol. 9, no. 1, pp. 46–69, Jan. 2023, doi: 10.1080/23322373.2022.2155116.
- [30] N. Achmad *et al.*, "Analysis Using ISO 9241-11 On Student Portal Website," *Asia Caucasus English Ed.*, vol. 23, no. 1, p. 2022, 2022.
- [31] I. G. N. A. Suaryana, I. G. A. E. Damayanthi, and N. K. L. A. Merkusiwati, "Kualitas Dan Kepuasan Pengguna Terhadap Sistem Informasi Akademik Berbasis Web the Quality and Users Satisfaction of Web-Based Academic Information System," *J. Ilm. Akunt. dan Bisnis*, vol. 11, no. 2, pp. 84–90, 2016.
- [32] S. Sultono, K. B. Seminar, and E. Erizal, "Analysis On Academic Information System Quality Toward User Satisfaction," *Int. J. Adm. Sci. Organ.*, vol. 22, no. 2, 2016, doi: 10.20476/jbb.v22i2.5701.
- [33] D. Shreenivas, S. Raza, and T. Voigt, "Intrusion Detection in the RPL-connected 6LoWPAN Networks," in *Proceedings of the 3rd ACM International Workshop on IoT Privacy, Trust, and Security*, 2017, pp. 31–38. doi: 10.1145/3055245.3055252.
- [34] A. Verma and V. Ranga, "Security of RPL Based 6LoWPAN Networks in the Internet of Things: A Review," *IEEE Sens. J.*, vol. 20, no. 11, pp. 5666–5690, 2020, doi: 10.1109/JSEN.2020.2973677.
- [35] L. Meilani, A. I. Suroso, and L. N. Yuliati, "Evaluasi Keberhasilan Sistem Informasi Akademik dengan Pendekatan Model DeLone dan McLean," *J. Sist. Inf. Bisnis*, vol. 10, no. 2, pp. 137–144, 2020, doi: 10.21456/vol10iss2pp137-144.
- [36] M. Risal Tawil, B. Baharuddin, M. Mattalatta, and A. Umar, "Exploratory Factor Analysis Dan Confirmatory Factor Analysis Job Reward With Structural Equation Model," *Asian J. Manag. Entrep. Soc. Sci.*, vol. 03, no. 02, 2022.