Evaluation of Student Satisfaction in Using Academic Information System Services: A Structural Equation Modeling Approach

Ardiansyah Abubakar*
Statistics Study Program, Universitas Lambung Mangkurat, ardiansyahab@ulm.ac.id

Arifin
Statistics Study Program, Universtias Patompo, arifinumpar@gmail.com

Ahmad Hasyim
Biology Eduction Study Program, Universitas Patompo, ahasyim@unpatompo.ac.id

Sri Dian Lestari
Statistics Study Program, Universtias Patompo, sridianlestari09@gmail.com

**Corresponding Author*

ABSTRACT, The Academic Information System (SIAKAD) serves a pivotal function in enhancing both operational efficiency and the quality of academic services within higher education institutions, particularly amidst the accelerating shift toward digitalization in the education sector. Despite its strategic importance, the effectiveness of SIAKAD implementation is contingent upon the level of user satisfaction—most notably that of students—which remains insufficiently explored through analytical models capable of capturing intricate causal relationships. This study seeks to empirically examine the determinants of student satisfaction in utilizing SIAKAD by investigating the influence of system quality, information quality, and ease of use, with perceived usefulness positioned as a mediating construct. The research adopts the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, which is methodologically appropriate for complex models involving latent variables and non-normally distributed data. The analysis is based on survey data collected from 128 active undergraduate students at Universitas Patompo. The empirical findings indicate that information quality exerts a significant direct influence on student satisfaction ($\beta = 0.547$; $p < 0.001$) and an additional indirect effect mediated by perceived usefulness ($\beta = 0.268$; $p < 0.001$). Conversely, system quality and ease of use demonstrate no statistically significant effects. The coefficient of determination values ($R^2 = 0.706$ for satisfaction; $R^2 = 0.615$ for perceived usefulness) reflect a strong predictive capability of the model. These results affirm that information quality is the most salient predictor of user satisfaction, underscoring the imperative to prioritize content enhancement as a strategic direction in the advancement of academic information systems within the higher education landscape.

***Keywords**: SIAKAD, Student Satisfaction, PLS-SEM, Information Quality, Perceived Usefulness, Information System Evaluation.*

1. INTRODUCTION

Amid the ongoing digital transformation of higher education, the Academic Information System (SIAKAD) functions as a fundamental technological infrastructure that facilitates the systematic management of academic and administrative data within university settings. [1]. While the integration of information technology within the higher education sector holds substantial promise for improving operational efficiency, its successful implementation remains contingent upon various contextual and organizational factors, and therefore cannot be presumed as guaranteed [2]. User dissatisfaction may reflect underlying inadequacies in system quality, information quality, or the service dimensions of the academic information system. These shortcomings can compromise operational efficiency and impede the long-term adoption of the system, potentially leading to diminished student loyalty and engagement with the higher education institution.

A comprehensive assessment of student satisfaction may be effectively conducted through the application of quantitative analytical techniques, such as Structural Equation Modeling (SEM), which enables the examination of complex relationships among latent constructs [3]. Within the framework of evaluating Academic Information Systems (SIAKAD), Structural Equation Modeling (SEM) offers a robust analytical approach that facilitates the simultaneous examination of multiple latent constructs, including system quality, information quality, and service quality, in relation to user satisfaction. Universitas Patompo, a private higher education institution based in Makassar,

has adopted SIAKAD as a core platform to streamline its academic and administrative processes. With an active student enrollment of approximately 2.075 and a student-to-permanent faculty ratio of 1:16.66, conducting a systematic assessment of student satisfaction with SIAKAD performance is both timely and essential. The university oversees 11 accredited academic programs and employs 125 full-time faculty members, underscoring its institutional dedication to upholding academic quality and operational excellence in higher education.

This study aims to address a critical gap in the existing body of literature, which has yet to sufficiently investigate the intricate causal mechanisms underlying user satisfaction with Academic Information Systems (SIAKAD), particularly within the context of private higher education institutions in Indonesia. Previous research has largely relied on conventional analytical frameworks such as linear regression and the Technology Acceptance Model (TAM), both of which tend to emphasize direct effects while neglecting potential mediation pathways and the interplay among latent variables. Additionally, the majority of these studies have been situated in large universities with advanced technological infrastructures, thereby limiting the generalizability of their findings to institutions operating with more constrained resources. To overcome these limitations, the present study adopts the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique, which enables a comprehensive examination of the simultaneous effects of system quality, information quality, ease of use, and perceived usefulness on student satisfaction.

Amid evolving paradigms in the assessment of information system success, recent scholarly discourse underscores the pivotal influence of information quality and perceived value as primary determinants shaping user experience—especially within the post-pandemic landscape, where dependence on digital service delivery has intensified significantly. Putra et al. [4] provide empirical evidence that information quality serves as a more salient predictor of user loyalty than ease of use within the context of digital education systems, highlighting the centrality of content relevance and accuracy in sustaining long-term user engagement. These findings align with the meta-analytic review by Ali et al. [5], which highlights a notable paradigm shift in the conceptualization of information system success within the educational domain—moving from a traditionally technical orientation to a value-driven framework that emphasizes perceived usefulness and the contextual relevance of information. Integrating this body of literature reinforces the conceptual foundation and provides robust theoretical justification for situating information quality as a pivotal construct in the assessment of academic information systems in higher education.

The principal contribution of this study resides in the integration of a contextually grounded methodological framework and the advancement of theoretical models tailored to the specific dynamics of the local educational environment. From a theoretical standpoint, the research offers a nuanced extension of existing technology acceptance frameworks by critically re-evaluating the predominant emphasis on usability constructs and positioning perceived usefulness as a central mediating variable in the nexus between information quality and user satisfaction. Methodologically, the implementation of Partial Least Squares Structural Equation Modeling (PLS-SEM) is particularly valuable, as it facilitates robust parameter estimation under conditions of non-normal data distribution and moderate sample sizes circumstances frequently encountered in empirical studies within developing-country higher education contexts. On a practical level, the empirical insights generated by this study offer actionable guidance for academic information system administrators in formulating data-driven strategies to enhance digital service delivery through improvements in information quality. Collectively, these contributions underscore the study's relevance across conceptual, methodological, and applied dimensions, offering meaningful implications for both research and institutional practice in user-centered educational information system management.

Academic Information System (SIAKAD) in higher education institutions, with a targeted

emphasis on identifying the critical determinants that shape such satisfaction. Specifically, it investigates the direct and mediated effects of system quality, information quality, and ease of use on student satisfaction, wherein perceived usefulness functions as a mediating construct. Utilizing the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique, the research is methodologically structured to examine a complex network of relationships among latent variables that are inherently unobservable. Theoretically, the study contributes to the refinement of the Technology Acceptance Model (TAM) by assessing its applicability and construct validity within the Indonesian higher education context. From a practical standpoint, the findings provide evidence-based policy insights aimed at informing the development and optimization of SIAKAD to enhance the overall quality of academic service delivery.

2. LITERATURE REVIEW

Structural Equation Modeling (SEM) constitutes a comprehensive multivariate statistical technique designed to simultaneously test and estimate complex causal relationships among latent constructs within a unified system of structural equations. Methodologically, SEM synthesizes the principles of factor analysis and path modeling, thereby facilitating the representation of theoretical constructs that are not directly observable through empirically measurable indicators. This integrative capability enables researchers to capture the multidimensional nature of behavioral and organizational phenomena. Accordingly, SEM provides a rigorous analytical framework for evaluating both the validity and reliability of constructs, while also enabling the empirical testing of theoretically derived structural relationships among variables within a statistically identifiable model [6].

The Structural Equation Modeling (SEM) framework is composed of two integral components: the measurement model and the structural model. The measurement model delineates the associations between latent constructs and their corresponding observed indicators, serving as the basis for evaluating the reliability and validity of construct measurement. In contrast, the structural model specifies the directional and causal linkages among latent variables, thereby embodying the theoretical architecture that underpins the hypothesized relationships within the system. In the application of SEM, two principal methodological paradigms are widely adopted: Covariance-Based SEM (CB-SEM) and Partial Least Squares SEM (PLS-SEM). CB-SEM is particularly suited for confirmatory analyses of well-established theoretical models, with a primary emphasis on overall model fit and the assumption of multivariate normality. On the other hand, PLS-SEM offers a more flexible and robust alternative, making it advantageous for exploratory investigations, nascent theory development, and empirical contexts characterized by non-normal data distributions or limited sample sizes [7].

Partial Least Squares SEM

Partial Least Squares Structural Equation Modeling (PLS-SEM) represents a variance-oriented alternative within the structural equation modeling paradigm, designed to optimize the explained variance of endogenous latent constructs. In contrast to the Covariance-Based SEM (CB-SEM) approach, which prioritizes overall model fit and assumes multivariate normality, PLS-SEM demonstrates greater tolerance for deviations from distributional assumptions. This methodological flexibility renders it particularly advantageous for predictive analytics, theory development in early research stages, and empirical investigations involving complex models with limited sample sizes or non-normal data [8].

From a conceptual standpoint, the PLS-SEM framework is structured around two core components: the outer model, which specifies the relationships between latent variables and their observed indicators, and the inner model, which delineates the hypothesized causal linkages among the latent constructs.

Outer Model

The measurement model, also referred to as the outer model, delineates the associations between latent variables and their empirically

observable indicators (manifest variables), serving as the basis for either reflecting or forming the underlying constructs. In the context of Partial Least Squares Structural Equation Modeling (PLS-SEM), two principal types of measurement models are distinguished: the reflective and the formative measurement models. The reflective model posits that latent constructs give rise to their observed indicators, which are specified through the following structural equation [6]:

$$x_i = \lambda_i \xi + \varepsilon_i \quad (2.1)$$

In contrast, the formative measurement model conceptualizes the latent construct as a composite formed by its observed indicators, with the direction of causality flowing from the indicators to the construct, and is mathematically represented by the following equation:

$$\xi = \sum_{i=1}^{n} \gamma_i x_i + \zeta \quad (2.2)$$

Inner Model

The structural model articulates the hypothesized causal linkages among latent constructs, thereby constituting the theoretical foundation of the specified model. These relationships are formally operationalized through the following structural equations [6]:

$$\eta = B\eta + \Gamma\xi + \zeta \quad (2.3)$$

Partial Least Squares Structural Equation Modeling (PLS-SEM) employs an iterative estimation procedure grounded in the partial least squares regression algorithm. The primary objective of this approach is to optimize the proportion of variance explained (R^2) in endogenous latent constructs, thereby facilitating the generation of efficient and reliable parameter estimates, even in analytical contexts characterized by non-normal data distributions or relatively small sample sizes [6].

Within the Indonesian higher education landscape, Partial Least Squares Structural Equation Modeling (PLS-SEM) has witnessed growing utilization among researchers, attributed to its capability to handle complex models involving numerous indicators and its robustness in contexts characterized by limited sample sizes. Its methodological adaptability and ease of application render it particularly suitable for exploratory research endeavors. As academic services become increasingly digitized, the deployment of SEM techniques—particularly the variance-based PLS-SEM—has emerged as a critical analytical framework for assessing the performance and effectiveness of academic information systems.

3. METHODOLOGY

This study adopts a quantitative methodology with an explanatory research design to investigate the effects of ease of use, system quality, and information quality on student satisfaction with the Academic Information System (SIAKAD), incorporating perceived usefulness as a mediating variable. The hypothesized causal relationships among latent constructs are examined through the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, which is particularly well-suited for evaluating complex, prediction-oriented theoretical models and demonstrates robustness in conditions involving non-normal data distributions and relatively small sample sizes. The study population comprises all active students at Universitas Patompo who have access to and are proficient in utilizing SIAKAD. A purposive sampling strategy was employed, targeting undergraduate and postgraduate students with prior experience using the system and who voluntarily completed the survey in its entirety. Data were collected using a structured, closed-ended questionnaire based on a five-point Likert scale, with each construct measured by six to seven items that had undergone preliminary assessments of validity and reliability prior to administration.

The analytical procedure employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique, utilizing SmartPLS version 3.29 for model estimation. The analysis consisted of two primary stages:

1. Assessment of the measurement model (outer model) was conducted to evaluate convergent validity and construct reliability, ensuring the adequacy of the reflective indicators in representing their respective latent constructs.
2. Evaluation of the structural model (inner model) was performed through a bootstrapping procedure involving 500 subsamples to test the statistical significance

of path coefficients and to estimate the coefficient of determination (R^2), indirect effects, and total effects, thereby validating the hypothesized causal relationships among the latent variables.

4. RESULT & DISCUSSION

A total of 128 respondents participated in this study, selected through the administration of an online questionnaire distributed via Google Forms. To account for the variability in respondent characteristics, demographic segmentation was performed based on key variables, including year of enrollment, gender, frequency of access to the Academic Information System (SIAKAD), and the geographical location from which the system was accessed.

Analysis of the collected data reveals that the largest proportion of respondents belonged to the 2024 cohort (42,1%), followed by cohorts from 2023 (28,6%), 2022 (18%), 2021 (10,5%), and 2020 (0,8%). In terms of gender distribution, female participants constituted the majority at 72,1%, with male participants accounting for 27,9%. Regarding access frequency, a substantial proportion of students (43,4%) reported using the SIAKAD system between five and ten times per month, reflecting a relatively high level of engagement. In terms of access location, the university campus emerged as the primary site (51,9%), followed by alternative settings such as residences, internet cafes, and public areas.

The measurement model, also referred to as the outer model, serves to define and theoretically conceptualize the associations between latent constructs and their corresponding manifest indicators. Evaluation of this model is carried out by assessing construct validity and reliability, aiming to ensure that each observed indicator provides a consistent and accurate representation of the latent variable it is intended to capture.

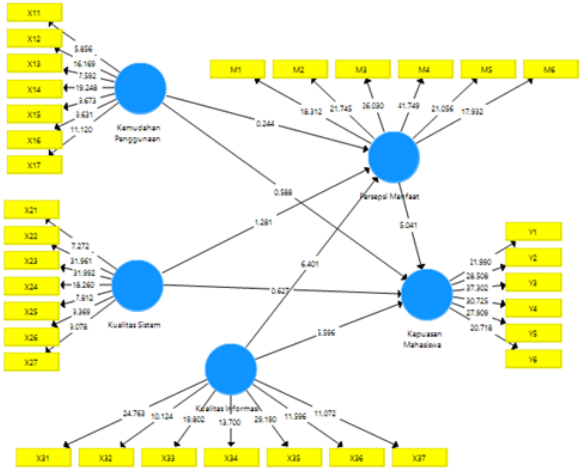

Figure 4.1 The structural model of Partial Least Squares Structural Equation Modeling (PLS-SEM)

Validity assessment was undertaken to determine the extent to which each item in the structural questionnaire appropriately reflects its underlying latent construct. Convergent validity was evaluated through factor loadings, with values exceeding 0,60 deemed satisfactory. Discriminant validity was assessed by examining the Average Variance Extracted (AVE), where a threshold above 0,50 is required, and by ensuring that the square root of each construct's AVE surpasses its correlations with other constructs. The analysis of key constructs—Ease of Use, Student Satisfaction, Information Quality, System Quality, and Perceived Usefulness—revealed that all indicators met the requisite validity thresholds. To further establish the reliability or internal consistency of the measurement model, multiple indices were employed, including Cronbach's Alpha (≥ 0,60), rho_A (≥ 0,70), Composite Reliability (≥ 0,70), and AVE (≥ 0,50). The findings confirmed that all constructs fulfilled the reliability criteria, indicating that the measurement model possesses adequate psychometric properties and can be considered robust for the evaluation of the specified latent variables.

Table 4.1 Reliability Testing Results

Variabel	Cronbach's Alpha	rho_A	Reliabilitas Komposit	Rata-rata Varians Diekstrak (AVE)
Kemudahan Penggunaan	0.864	0.880	0.895	0.551
Kepuasan Mahasiswa	0.923	0.925	0.940	0.723
Kualitas Informasi	0.888	0.893	0.912	0.599
Kualitas Sistem	0.856	0.883	0.889	0.538
Persepsi Manfaat	0.908	0.910	0.929	0.684

The evaluation of reliability and convergent validity, conducted within the context of Partial Least Squares Structural Equation Modeling (PLS-SEM), demonstrates that all constructs in the model satisfy the prescribed internal reliability and convergent validity standards for quantitative research. The Cronbach's Alpha values for the constructs range from 0,856 to 0,923, indicating a high level of internal consistency [9], In addition, the rho_A values, which function as a more precise alternative estimator of reliability within the framework of PLS-SEM, also exhibit strong consistency (ranging from 0,880 to 0,925).

Moreover, all constructs demonstrate Composite Reliability (CR) values exceeding the 0,7 threshold, with the highest value found in the Student Satisfaction construct (0,940) and the lowest in the System Quality construct (0,889), suggesting that these constructs reliably and consistently reflect the underlying latent variables [10]. Convergent validity, as evidenced by the Average Variance Extracted (AVE), is also met, with all constructs demonstrating AVE values exceeding the 0.5 threshold. The values range from the lowest of 0.538 for System Quality to the highest of 0.723 for Student Satisfaction, suggesting that over 50% of the variance in the indicators is accounted for by their corresponding constructs [11]. The results confirm that the measurement model utilized exhibits sufficient measurement quality and can be regarded as reliable within the scope of the study.

R Square (coefficient of determination) represents the proportion of variance in the endogenous latent construct that is explained by the exogenous latent constructs within the structural model. An increase in the R-Square value signifies a stronger contribution of the exogenous variables in accounting for the variability of the endogenous variable.

Table 4.2 R Square Results

Variabel	R Square	Adjusted R Square
Kepuasan Mahasiswa	0.831	0.826
Persepsi Manfaat	0.614	0.605

The evaluation of the structural model within the context of Partial Least Squares Structural Equation Modeling (PLS-SEM) reveals that the Student Satisfaction construct exhibits an R^2 value of 0,706 and an Adjusted R^2 value of 0,704. This indicates that approximately 70,6% of the variance in this construct is significantly explained by exogenous variables, including Ease of Use, System Quality, and Information Quality, demonstrating strong predictive power [9]. In contrast, the Perceived Usefulness construct exhibits an R^2 value of 0,615 and an Adjusted R^2 value of 0,606, demonstrating that approximately 61,5% of the variance in perceived usefulness is explained by the exogenous constructs in the model, with predictive power categorized as moderate to strong. These findings imply that the estimated structural model offers a sufficient level of explanatory power and maintains adequate predictive stability, even when accounting for the complexity associated with the number of indicators and constructs in the model.

In Partial Least Squares Structural Equation Modeling (PLS-SEM), statistical significance for hypothesis testing is determined by comparing the t-statistic values derived from bootstrapping with the critical values from the t-distribution. Ghozali et al. [12] assert that a hypothesis is deemed statistically significant when the t-statistic value surpasses the critical value at a predetermined significance level. At a 95% confidence level (α = 0,05), the critical threshold for significance is a t-statistic greater than 1,96. Consequently, when the t-statistic exceeds 1,96, the relationship between the exogenous and endogenous constructs in the model is considered significant, providing empirical support for the proposed hypothesis based on the model's estimation.

Table 4.3 Results of Direct Hypothesis Testing

Koefesien Jalur	Sampel Asli (O)	Rata-rata Sampel (M)	Standar Deviasi (STDEV)	T Statistik (|O/STDEV|)	P Values
Kemudahan Penggunaan -> Kepuasan Mahasiswa	-0.030	-0.028	0.051	0.588	0.557
Kemudahan Penggunaan -> Persepsi Manfaat	-0.030	0.005	0.123	0.244	0.807
Kualitas Informasi -> Kepuasan Mahasiswa	0.547	0.553	0.098	5.596	0.000
Kualitas Informasi -> Persepsi Manfaat	0.688	0.668	0.107	6.401	0.000
Kualitas Sistem -> Kepuasan Mahasiswa	0.052	0.061	0.083	0.627	0.531
Kualitas Sistem -> Persepsi Manfaat	0.134	0.139	0.104	1.281	0.201
Persepsi Manfaat -> Kepuasan Mahasiswa	0.390	0.378	0.077	5.041	0.000

The path analysis results in the structural model, employing the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, reveal notable variations in the strength and direction of the relationships between constructs. Several paths were found to be statistically insignificant ($p > 0,05$), such as the relationship between Ease of Use and Student Satisfaction ($\beta = -0,030$, $p = 0,557$, $t = 0,588$), and Perceived Usefulness ($\beta = -0,030$, $p = 0,807$, $t = 0,244$), as well as between System Quality and Student Satisfaction ($\beta = 0,052$, $p = 0,531$, $t = 0,627$) and Perceived Usefulness ($\beta = 0,134$, $p = 0,201$, $t = 1,281$).

These findings suggest that these constructs do not serve as primary determinants of student perceptions or satisfaction with the system, consistent with the model evaluation criteria that prioritize statistical significance and effect size [9]. Conversely, significant relationships ($p < 0,05$) were identified for the path from Information Quality to Student Satisfaction ($\beta = 0,547$, $p = 0,000$, $t = 5,596$) and Perceived Usefulness ($\beta = 0,688$, $p = 0,000$, $t = 6,401$), as well as the path from Perceived Usefulness to Student Satisfaction ($\beta = 0,390$, $p = 0,000$, $t = 5,041$). These results emphasize the pivotal role of Information Quality as a primary predictor that both directly and indirectly contributes to Student Satisfaction through the mediation of Perceived Usefulness, aligning with existing literature that stresses the significance of information quality in academic information systems [13].

Mediation effect testing (indirect effects) within the structural model based on Partial Least Squares Structural Equation Modeling (PLS-SEM) is conducted to evaluate the role of the mediating variable in transmitting the influence between exogenous and endogenous constructs. The assessment of indirect effects involves analyzing the mediation path coefficients (original sample) and examining their statistical significance through the t-statistic and p-value derived from bootstrapping. A mediation effect is considered significant when the t-statistic surpasses a critical threshold (e.g., >1,96 for a 5% significance level) and the p-value falls below the pre-established significance level [14].

Table 4.3 Results of Direct Hypothesis Testing

Indirect Effect	Sampel Asli (O)	Rata-rata Sampel (M)	Standar Deviasi (STDEV)	T Statistik (|O/STDEV|)	P Values
Kemudahan Penggunaan -> Persepsi Manfaat -> Kepuasan Mahasiswa	-0.012	0.000	0.047	0.246	0.806
Kualitas Informasi -> Persepsi Manfaat -> Kepuasan Mahasiswa	0.268	0.255	0.076	3.532	0.000
Kualitas Sistem_ -> Persepsi Manfaat -> Kepuasan Mahasiswa	0.052	0.050	0.038	1.357	0.175

The analysis of mediation effects within the structural model using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach indicates that only a subset of mediation paths are statistically significant. The path from Ease of Use → Perceived Usefulness → Student Satisfaction presents an indirect coefficient of -0,012 with a p-value of 0,806 and a t-statistic of 0,246, which is not statistically significant, providing no empirical support for the mediation of Perceived Usefulness in the relationship between Ease of Use and Student Satisfaction.

Likewise, the mediation path from System Quality → Perceived Usefulness → Student Satisfaction produces an indirect coefficient of 0,052 ($p = 0,175$; $t = 1,357$), which is also insignificant. However, a significant mediation effect was observed in the path Information Quality → Perceived Usefulness → Student Satisfaction, with an indirect coefficient of 0,268, p-value = 0,000, and t-statistic = 3,532. These findings indicate partial mediation, where Perceived Usefulness plays a vital role in mediating the influence of Information Quality on Student Satisfaction, complementing the direct effect previously established. This result aligns with existing literature that highlights the importance of information quality in shaping users' perceptions of system benefits, thereby enhancing satisfaction [9].

In structural modeling based on Partial Least Squares Structural Equation Modeling (PLS-SEM), the total effect between latent constructs represents the combined impact of both direct and indirect effects mediated by intermediary constructs. The assessment of total effects is carried out by interpreting the total path coefficients derived from the original sample estimates, complemented by statistical significance testing through the t-statistic and p-value obtained via bootstrapping. A total effect is

deemed statistically significant if it exceeds the predefined threshold, such as a t-statistic value greater than 1.96 at a 5% significance level [8].

Table 4.4 Results of Indirect Hypothesis Testing

Pengaruh Total	Sampel Asli (O)	Rata-rata Sampel (M)	Standar Deviasi (STDEV)	T Statistik (|O/STDEV|)	P Values
Kemudahan Penggunaan -> Kepuasan Mahasiswa	-0.042	-0.028	0.067	0.625	0.532
Kemudahan Penggunaan -> Persepsi Manfaat	-0.030	0.005	0.123	0.244	0.807
Kualitas Informasi -> Kepuasan Mahasiswa	0.816	0.809	0.072	11.259	0.000
Kualitas Informasi -> Persepsi Manfaat	0.688	0.668	0.107	6.401	0.000
Kualitas Sistem -> Kepuasan Mahasiswa	0.104	0.111	0.091	1.147	0.252
Kualitas Sistem -> Persepsi Manfaat	0.134	0.139	0.104	1.281	0.201
Persepsi Manfaat -> Kepuasan Mahasiswa	0.390	0.378	0.077	5.041	0.000

The results of the total path analysis within the structural model utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM) indicate notable differences between constructs that significantly contribute and those that do not, in relation to both Student Satisfaction and Perceived Usefulness. Several paths demonstrated total effects that were statistically insignificant ($p > 0,05$), including Ease of Use → Student Satisfaction (coefficient = -0,042; p = 0,532; t = 0,625), Ease of Use → Perceived Usefulness (coefficient = -0,030; p = 0,807; t = 0,244), System Quality → Student Satisfaction (coefficient = 0,04; p = 0,252; t = 1,147), and System Quality → Perceived Usefulness (coefficient = 0,134; p = 0,201; t = 1,281). The lack of significance in these paths suggests that Ease of Use and System Quality do not contribute meaningfully to the endogenous variables in the model, whether directly or through mediation.

In contrast, three paths demonstrated statistically significant total effects ($p < 0,05$), namely Information Quality → Student Satisfaction (coefficient = 0,816; p = 0,000; t = 11,259), Information Quality → Perceived Usefulness (coefficient = 0,688; p = 0,000; t = 6,401), and Perceived Usefulness → Student Satisfaction (coefficient = 0,390; p = 0,000; t = 5,041). These results consistently underscore the central role of Information Quality as a key determinant, which exerts both a direct and indirect effect through Perceived Usefulness, the latter of which is a significant construct in explaining Student Satisfaction [15].

5. CONCLUSION

The estimation results of the measurement and structural models using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach reveal that Information Quality plays a central role in influencing student satisfaction with the Academic Information System (SIAKAD), both directly and through the mediation of Perceived Usefulness. The analysis, employing the PLS-SEM method, further indicates that System Quality and Ease of Use do not significantly affect student satisfaction, highlighting the greater importance of the informational content dimension compared to technical aspects within the context of higher education information systems.

A key contribution of this study is the application of the PLS-SEM-based evaluative model in a private university setting in Indonesia, which also strengthens existing literature by positioning Perceived Value as a crucial mediating variable. From a practical perspective, these findings emphasize the need to enhance the quality of information within SIAKAD to improve user experience and foster student loyalty to the digital campus system. Nevertheless, this study has limitations in terms of the sample scope, which is restricted to a single institution, and the cross-sectional design, which constrains temporal generalizability. Consequently, future research should consider a longitudinal design and broaden institutional participation to enhance the external validity of the proposed model.

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