

Digital Transformation of Academic Administration Services to Improve Student Satisfaction

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Abstract

This study analyzes the influence of digital transformation in academic administration services on student satisfaction at Akademi Bisnis Lombok (AKBIL). Digital transformation encompasses the Academic Information System (SIKAD), online student admission, e-office, and electronic signatures, implemented since 2022. Using a quantitative explanatory survey with 212 respondents (N=450, proportionate stratified random sampling) and modified SERVQUAL dimensions—digital reliability, system responsiveness, information assurance, technology-based empathy, and digital tangibility—the multiple linear regression results show all five dimensions positively and significantly affect student satisfaction. Digital reliability ($\beta=0.312$; $p<0.001$) proved the most dominant predictor, followed by system responsiveness ($\beta=0.241$), information assurance ($\beta=0.198$), technology-based empathy ($\beta=0.176$), and digital tangibility ($\beta=0.143$). Collectively, the model explains 64.7% of student satisfaction variance ($R^2=0.647$; $F=71.34$; $p<0.001$). Findings underscore the urgency of strengthening digital HR competency and IT infrastructure as key strategies for improving academic service quality at private vocational institutions.

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1. INTRODUCTION

Digital transformation has become a defining agenda in contemporary higher education, fundamentally changing how universities organize academic governance, deliver administrative services, and interact with their stakeholders. Rather than representing a simple transition from conventional to digital technologies, digital transformation involves a holistic organizational process in which digital technologies are integrated into institutional strategies, governance systems, operational procedures, and decision-making mechanisms to create sustainable value for institutions and their users (Vial, 2019). The rapid advancement of information and communication technologies has consequently shifted universities from traditional administrative practices toward data-driven, technology-enabled, and student-centered service ecosystems (Bond et al., 2018). This transformation is particularly relevant for higher education institutions because students increasingly expect academic services that are efficient, transparent, accessible, and responsive regardless of temporal or geographical limitations (OECD, 2021). Digital transformation therefore represents not merely an institutional innovation but an essential strategy for improving organizational resilience and educational competitiveness in the digital era (UNESCO, 2023).

Service quality constitutes one of the most influential determinants of institutional performance within higher education. Universities no longer compete solely through academic excellence but also through their ability to provide high-quality administrative and support services that shape students' educational experiences throughout their academic journey (Kotler & Keller, 2016). Student satisfaction has consequently emerged as a critical performance indicator because satisfied students are more likely to demonstrate institutional trust, positive engagement, and long-term loyalty (Oliver, 1997; Chandra et al., 2019). Previous studies consistently demonstrate that students evaluate service quality based on their interactions with academic administration, accessibility of institutional information, responsiveness of administrative personnel, and reliability of digital service platforms (Abdullah, 2006; Chandra et al., 2019). These findings indicate that improving service quality is no longer limited to classroom learning but extends to every administrative interaction experienced by students throughout their educational process.

The SERVQUAL model proposed by Parasuraman et al. (1988) remains one of the most comprehensive theoretical frameworks for evaluating service quality across both public and private organizations. The model conceptualizes service quality through five interconnected dimensions: reliability, responsiveness, assurance, empathy, and tangibles. Although initially developed within commercial service industries, SERVQUAL has been extensively adapted to educational settings because universities increasingly operate as service-oriented organizations that prioritize stakeholder satisfaction (Parasuraman et al., 1988; Abdullah, 2006). The rapid digitalization of higher education further requires these dimensions to be interpreted within digital environments where institutional interactions are mediated by information systems rather than direct face-to-face communication (Zeithaml et al., 2002). Consequently, concepts such as digital reliability, system responsiveness, information assurance, technology-based empathy, and digital tangibility provide a more appropriate analytical framework for evaluating the effectiveness of contemporary digital academic services (Nugraha et al., 2020).

Private higher education institutions in Indonesia face distinctive challenges throughout the digital transformation process. Besides fulfilling their educational mission, private universities must simultaneously maintain institutional sustainability, improve organizational competitiveness, and satisfy increasingly diverse student expectations within a competitive higher education market (Indrajit, 2016). Digital transformation therefore represents a strategic necessity rather than a technological option. Successful implementation requires the alignment of institutional leadership, organizational culture, technological infrastructure, human resource capabilities, and governance mechanisms because technological investment alone rarely produces meaningful improvements in service quality (Schwertner, 2017; Vial, 2019). Recent discussions concerning Industry 4.0 and Society 5.0 further emphasize that educational institutions must develop adaptive digital ecosystems capable of supporting innovation, collaboration, and evidence-based decision-making while responding to rapid technological change (Prasetyo & Trisyanti, 2018).

Akademi Bisnis Lombok (AKBIL), a vocational private higher education institution in West Nusa Tenggara, has demonstrated a strong institutional commitment toward digital transformation by implementing an Academic Information System (SIKAD), online student admission services, electronic office applications, and digital signatures to strengthen academic governance and administrative efficiency. These initiatives were introduced to simplify academic processes, improve transparency, reduce administrative complexity, and expand students' access to academic information through integrated digital platforms. The socialization program of SIKAD also demonstrated positive outcomes by improving students' understanding of digital academic services and encouraging greater

participation in utilizing technology-based administrative systems, thereby supporting transparent and accountable academic governance (Khairunnisah et al., 2025).

Despite these institutional achievements, digital transformation cannot be considered successful solely because digital technologies have been adopted. Organizational success is ultimately reflected in users' experiences and perceptions of the services delivered through those technologies. Evidence from previous studies indicates that many higher education institutions continue to encounter significant challenges during digital transformation, including inadequate digital literacy, uneven technological readiness, organizational resistance, insufficient infrastructure, and inconsistent administrative responsiveness, all of which influence students' satisfaction with digital services (Barata & Cunha, 2017; Wahyudi et al., 2022). These observations indicate that evaluating digital transformation exclusively through technological implementation provides only a partial understanding of institutional performance. Greater attention should therefore be directed toward understanding how students perceive the quality of digital academic services because their experiences provide valuable evidence for improving institutional governance and strengthening sustainable digital transformation.

Current evidence suggests that the implementation of digital transformation in higher education frequently falls short of achieving its intended outcomes because technological adoption is often not accompanied by corresponding improvements in service quality. Universities may successfully implement integrated information systems, yet students continue to experience administrative inefficiencies, delayed responses, fragmented communication, and difficulties in accessing digital services (Vial, 2019; Zeithaml et al., 2002). Such conditions indicate that technological infrastructure alone is insufficient to produce meaningful organizational change. The effectiveness of digital transformation is ultimately determined by the extent to which digital services improve users' experiences and satisfy their expectations (Oliver, 1997; Chandra et al., 2019).

This phenomenon is also evident within Indonesian private higher education institutions, where the pace of digitalization has accelerated considerably during the last decade. Many institutions have introduced Academic Information Systems, Learning Management Systems, digital financial services, and online administrative platforms to improve institutional efficiency and educational quality (Indrajit, 2016). Despite these developments, several studies have reported that inconsistencies in service responsiveness, limited digital competencies among administrative personnel, inadequate user support, and technological constraints continue to influence students' perceptions of service quality (Prasetyo & Trisyanti, 2018; Wahyudi et al., 2022). These findings demonstrate that digital transformation should be evaluated not only from the perspective of technological readiness but also through the quality of services experienced by students as the primary beneficiaries of institutional digitalization.

The institutional experience of Akademi Bisnis Lombok reflects this broader context. The implementation of SIAKAD has significantly improved the accessibility of academic information and contributed to greater transparency in campus administration. The socialization program conducted for students also enhanced their understanding of system functionality, enabling them to access academic information more independently while supporting accountable academic governance (Khairunnisah et al., 2025). Nevertheless, preliminary observations undertaken during the present study indicate that several operational challenges remain. Students occasionally encounter difficulties when accessing SIAKAD during periods of intensive academic activity, administrative responses through digital communication channels are not always delivered promptly, and first-year students often require additional guidance to maximize the use of available digital services. These conditions illustrate that technological implementation has progressed more rapidly than

service adaptation, creating discrepancies between institutional expectations and students' actual experiences.

An effective digital academic service ecosystem should enable students to complete administrative processes efficiently, obtain accurate academic information in real time, receive prompt assistance from administrative personnel, and interact with institutional systems through user-friendly digital interfaces. Reliable digital services should minimize administrative errors, strengthen information security, facilitate transparent communication, and encourage active student participation in academic governance (Parasuraman et al., 1988; Zeithaml et al., 2002). Such characteristics represent the ideal condition expected from contemporary higher education institutions that aspire to implement student-centered digital governance. Achieving these standards requires continuous institutional commitment to improving technological infrastructure, organizational capacity, service culture, and digital literacy among both students and administrative staff (Schwertner, 2017).

The contrast between the existing conditions and the expected characteristics of digital academic services reveals a significant research gap. Most previous investigations have concentrated on technological implementation, digital readiness, or organizational transformation without comprehensively examining how individual dimensions of digital service quality shape students' satisfaction (Vial, 2019; Nugraha et al., 2020). Studies conducted within Indonesian higher education have similarly emphasized digital adoption and administrative modernization while providing comparatively limited empirical evidence concerning students' evaluations of digital service quality, particularly within vocational private higher education institutions (Indrajit, 2016; Wahyudi et al., 2022). Consequently, institutional decision-makers often possess limited evidence regarding which aspects of digital services require strategic improvement to maximize student satisfaction.

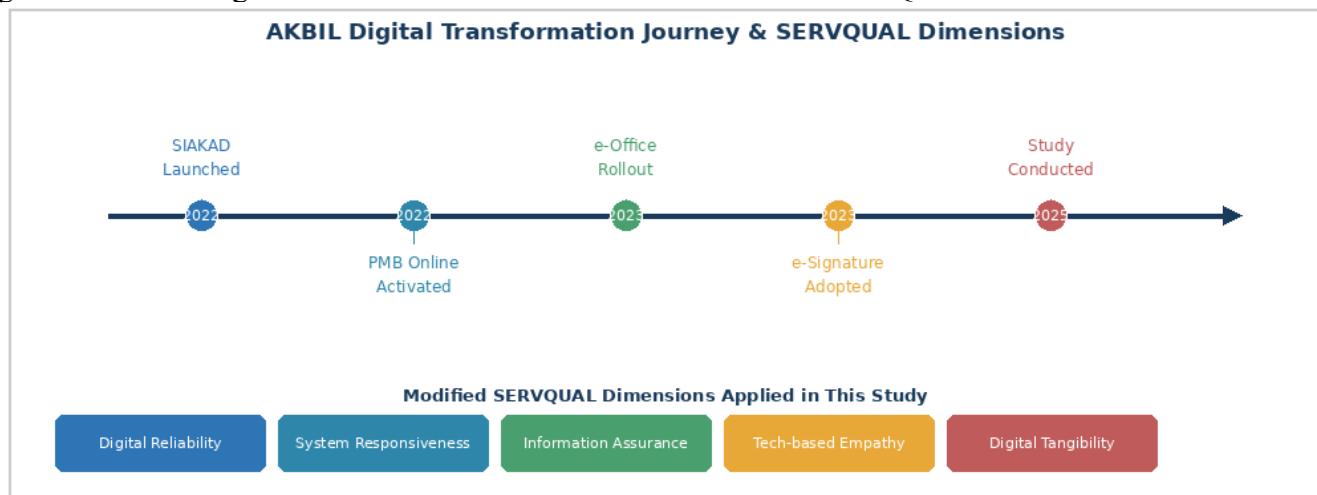
The existing literature nevertheless provides an important foundation for understanding digital transformation in educational organizations. Previous studies have consistently demonstrated that well-designed digital information systems improve organizational efficiency, facilitate institutional transparency, and support evidence-based decision-making when accompanied by effective governance mechanisms (Barata & Cunha, 2017; Schwertner, 2017). Research on higher education service quality has further confirmed that students' perceptions of administrative reliability, responsiveness, assurance, and institutional support significantly influence their overall satisfaction and loyalty toward universities (Abdullah, 2006; Chandra et al., 2019). Complementing these findings, Khairunnisah et al. (2025) reported that the socialization of SIAKAD at Akademi Bisnis Lombok successfully improved students' understanding of digital academic services while reinforcing transparency and efficiency in campus administration. Although these studies provide valuable insights, they generally stop at evaluating the implementation or utilization of digital systems and seldom examine the multidimensional relationship between digital service quality and student satisfaction.

The present study addresses this limitation by integrating the SERVQUAL framework with the context of digital academic governance in vocational private higher education. Unlike previous studies that primarily assessed technological implementation, this research focuses on students' perceptions of digital reliability, system responsiveness, information assurance, technology-based empathy, and digital tangibility as determinants of student satisfaction. This perspective recognizes that successful digital transformation should ultimately be reflected in users' experiences rather than merely in the existence of technological infrastructure.

The novelty of this study lies in three important contributions. First, it contextualizes the SERVQUAL framework within digital academic administration by adapting its dimensions to the characteristics of technology-mediated educational services. Second, it provides empirical evidence from a vocational private higher education institution in Indonesia, an institutional context that remains underrepresented within the digital transformation literature. Third, the findings are expected to generate practical policy recommendations that assist institutional leaders in strengthening digital governance through improvements in service quality, organizational responsiveness, and student-centered administrative practices rather than relying exclusively on technological investment.

Based on these considerations, this study aims to (1) analyze the current implementation of digital transformation in academic administration at Akademi Bisnis Lombok, (2) examine the influence of digital service quality dimensions on students' satisfaction, and (3) formulate evidence-based policy recommendations to optimize digital academic services and strengthen digital governance in vocational private higher education institutions. The findings are expected to contribute theoretically to the development of digital transformation and service quality research while providing practical guidance for higher education institutions seeking to improve the effectiveness, transparency, and sustainability of their digital academic services.

Figure 1. AKBIL Digital Transformation Timeline and Modified SERVQUAL Dimensions



2. METHOD

This study adopts a quantitative approach with an explanatory survey design to test the effects of digital service quality variables on student satisfaction (Creswell & Creswell, 2018; Sugiyono, 2019). The explanatory design was chosen because the study aims to explain causal relationships between variables through statistical hypothesis testing.

1.1 Research Location and Period

The study was conducted at Akademi Bisnis Lombok (AKBIL), Mataram, West Nusa Tenggara, a vocational institution offering three study programs: Digital Business, Public Sector Financial Management, and Public Sector Accounting. AKBIL was selected because it has implemented various digital academic services since 2022 without having conducted an impact evaluation on student satisfaction. Research was conducted over four months (February–May 2026).

1.2 Population and Sample

The research population comprised all active AKBIL students in the 2025/2026 academic year registered in the academic administration system (N=450). The sample size was determined using the Slovin formula with a 5% margin of error:

$$n = N / (1 + N \cdot e^2) \rightarrow n = 450 / (1 + 450 \times 0.05^2) = 212 \text{ respondents}$$

Proportionate stratified random sampling was applied by study program and cohort to ensure all student groups were proportionally represented. Table 1 presents the sample distribution.

Table 1. Research Sample Distribution by Study Program

No.	Study Program	N (Pop.)	n (Sample)	Percentage
1	Digital Business	160	75	35.4%
2	Public Sector Financial Management	155	73	34.4%
3	Public Sector Accounting	135	64	30.2%
	Total	450	212	100%

1.3 Variables and Research Instruments

The study comprises five independent variables (X_1 – X_5) and one dependent variable (Y):

X_1 – Digital Reliability: Accuracy, consistency, and uninterrupted technical performance of digital systems (5 items)

X_2 – System Responsiveness: Speed and responsiveness of systems and staff to requests via digital channels (5 items)

X_3 – Information Assurance: Student trust in data security, academic information accuracy, and system credibility (5 items)

X_4 – Technology-based Empathy: Institutional capacity to provide personalized attention through digital platforms (4 items)

X_5 – Digital Tangibility: Interface quality, navigation ease, and system feature completeness (4 items)

Y – Student Satisfaction: Overall student satisfaction with AKBIL's digital academic administration services (5 items)

All items were measured using a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree). Instruments were developed from adapted SERVQUAL (Parasuraman et al., 1988; Zeithaml et al., 2002), validated through expert judgment and exploratory factor analysis (EFA), with reliability confirmed via Cronbach's Alpha ≥ 0.70 .

1.4 Data Analysis Technique

Data were analyzed through: (1) descriptive analysis; (2) validity (item-total correlation ≥ 0.30) and reliability (Cronbach's Alpha) tests; (3) classical assumption tests (normality, multicollinearity, heteroscedasticity); and (4) multiple linear regression using the model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Analysis was performed using SPSS version 26, including partial t-tests, simultaneous F-tests, and the coefficient of determination (R^2) at a significance level of $\alpha = 0.05$.

3. RESULTS AND DISCUSSION

1.5 Respondent Profile

Of 212 respondents, the majority were aged 18–21 years (89.2%), with 61.3% female and 38.7% male. By study program, 35.4% were from Digital Business, 34.4% from Public Sector Financial Management, and 30.2% from Public Sector Accounting. Most respondents (78.3%) reported using SIAKAD more than three times per week, and 82.1% had used the online admission or e-office services at least once. Table 2 presents descriptive statistics for all research variables.

Table 2. Descriptive Statistics of Research Variables

Variable	Min	Max	Mean	SD	Category
Digital Reliability (X_1)	2.80	5.00	3.92	0.61	Good
System Responsiveness (X_2)	2.60	5.00	3.78	0.67	Good
Information Assurance (X_3)	2.40	5.00	3.85	0.58	Good
Tech-based Empathy (X_4)	2.50	5.00	3.69	0.72	Good
Digital Tangibility (X_5)	2.75	5.00	3.74	0.65	Good
Student Satisfaction (Y)	2.60	5.00	3.83	0.64	Good

1.6 Instrument Testing

Validity testing confirmed all 28 items had item-total correlations (r) > 0.30. Reliability testing showed Cronbach's Alpha values above the 0.70 threshold for all variables. Results are summarized in Table 3.

Table 3. Summary of Validity and Reliability Test Results

Variable	No. of Items	Item-Total Correlation	Cronbach's α	Status
Digital Reliability (X_1)	5	All $r > 0.30$ (Valid)	0.871	Reliable
System Responsiveness (X_2)	5	All $r > 0.30$ (Valid)	0.854	Reliable
Information Assurance (X_3)	5	All $r > 0.30$ (Valid)	0.862	Reliable
Tech-based Empathy (X_4)	4	All $r > 0.30$ (Valid)	0.839	Reliable
Digital Tangibility (X_5)	4	All $r > 0.30$ (Valid)	0.826	Reliable
Student Satisfaction (Y)	5	All $r > 0.30$ (Valid)	0.883	Reliable

1.7 Classical Assumption Tests

The Kolmogorov-Smirnov normality test yielded a significance value of 0.142 (> 0.05), confirming normally distributed residuals. Multicollinearity testing showed Tolerance > 0.10 and VIF < 10 for all independent variables (Table 4). The Glejser heteroscedasticity test produced significance values > 0.05 for all variables, confirming the model is free from heteroscedasticity. With all classical assumptions satisfied, the multiple linear regression model is appropriate for further analysis.

Table 4. Multicollinearity Test Results

Variable	Tolerance	VIF
Digital Reliability (X_1)	0.412	2.427
System Responsiveness (X_2)	0.385	2.597

Information Assurance (X ₃)	0.441	2.267
Tech-based Empathy (X ₄)	0.468	2.137
Digital Tangibility (X ₅)	0.503	1.988

1.8 Multiple Linear Regression Analysis

Table 5 presents the multiple linear regression results. The resulting regression equation is:

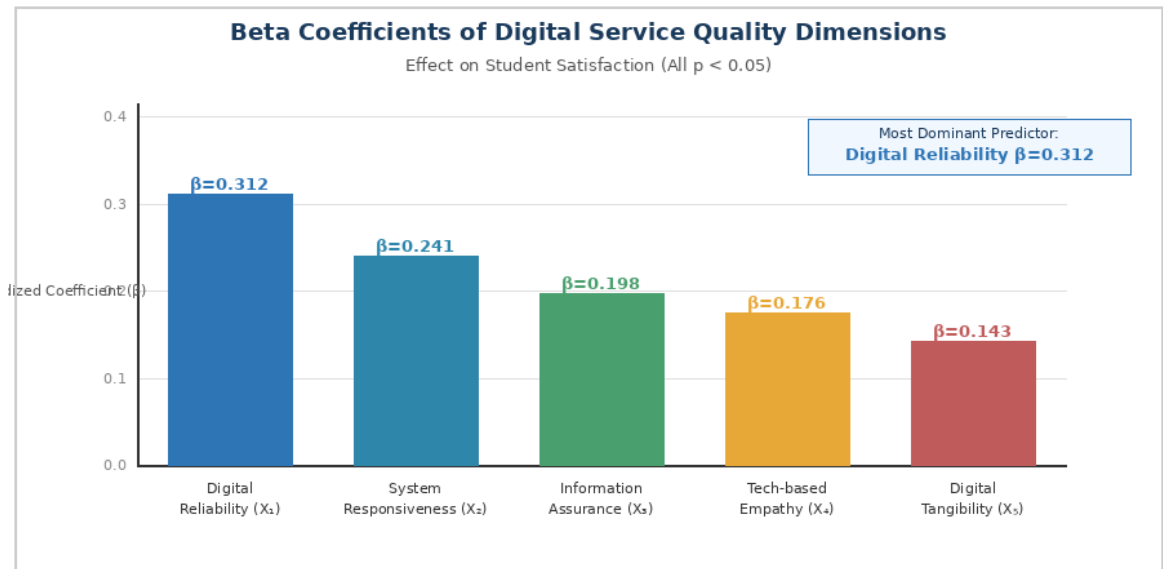
$$Y = 0.421 + 0.312X_1 + 0.241X_2 + 0.198X_3 + 0.176X_4 + 0.143X_5 + e$$

Table 5. Multiple Linear Regression Analysis Results

Variable	β	Std. Error	t-value	Sig.	Result
Constant (β_0)	0.421	0.187	2.251	0.025	–
Digital Reliability (X ₁)	0.312	0.058	5.379	0.000	Significant
System Responsiveness (X ₂)	0.241	0.061	3.951	0.000	Significant
Information Assurance (X ₃)	0.198	0.063	3.143	0.002	Significant
Tech-based Empathy (X ₄)	0.176	0.067	2.627	0.009	Significant
Digital Tangibility (X ₅)	0.143	0.064	2.234	0.026	Significant

$$R^2 = 0.647; F = 71.34; \text{Sig. } F = 0.000 (p < 0.001)$$

Figure 3. Beta Coefficients of Digital Service Quality Dimensions on Student Satisfaction



1.9 Hypothesis Testing and Discussion

The F-test results show that all five digital service quality variables simultaneously and significantly influence student satisfaction ($F=71.34$; $p<0.001$), with a coefficient of determination $R^2=0.647$. This means 64.7% of student satisfaction variation is explained by the model, while the remaining 35.3% is influenced by factors outside the model (learning environment, teaching quality, family support, etc.).

H₁ Accepted: Digital Reliability (X_1) positively and significantly affects student satisfaction ($\beta=0.312$; $t=5.379$; $p<0.001$). This highest coefficient confirms that the ability of SIAKAD and AKBIL's digital platforms to operate without interruptions, provide accurate information, and remain reliable at all times is the most crucial determinant of student satisfaction. This finding is consistent with Chandra et al. (2018) and Nugraha et al. (2020), which identify system reliability as the primary predictor of e-service quality in higher education.

H₂ Accepted: System Responsiveness (X_2) positively and significantly affects student satisfaction ($\beta=0.241$; $t=3.951$; $p<0.001$). The responsiveness speed of both systems and administrative staff through digital channels (live chat, email, official WhatsApp) is the second most important factor. Digital-generation students are highly sensitive to service response times; even a one-business-day delay can significantly lower service quality perceptions (Prensky, 2001; Tjiptono, 2017).

H₃ Accepted: Information Assurance (X_3) positively and significantly affects student satisfaction ($\beta=0.198$; $t=3.143$; $p=0.002$). Student trust in the security of personal and academic data within AKBIL's digital system demonstrably influences satisfaction. This finding is relevant given growing data privacy concerns among digital service users (Zeithaml et al., 2002).

H₄ Accepted: Technology-based Empathy (X_4) positively and significantly affects student satisfaction ($\beta=0.176$; $t=2.627$; $p=0.009$). Although carrying the second-lowest coefficient, this finding demonstrates that personalization of digital services—such as relevant automatic notifications, user-friendly system guidance, and easy complaint channels—still contributes significantly to satisfaction.

H₅ Accepted: Digital Tangibility (X_5) positively and significantly affects student satisfaction ($\beta=0.143$; $t=2.234$; $p=0.026$). Interface display quality, navigation ease, and feature completeness of SIAKAD influence satisfaction, though with the smallest

coefficient. This indicates that AKBIL students prioritize system functionality and reliability over interface aesthetics. Table 6. Summary of Hypothesis Testing Results

H	Hypothesis Statement	Result	Statistics
H ₁	Digital Reliability positively affects student satisfaction	Accepted	$\beta=0.312$; $p<0.001$
H ₂	System Responsiveness positively affects student satisfaction	Accepted	$\beta=0.241$; $p<0.001$
H ₃	Information Assurance positively affects student satisfaction	Accepted	$\beta=0.198$; $p=0.002$
H ₄	Tech-based Empathy positively affects student satisfaction	Accepted	$\beta=0.176$; $p=0.009$
H ₅	Digital Tangibility positively affects student satisfaction	Accepted	$\beta=0.143$; $p=0.026$
H ₆	All five dimensions jointly affect student satisfaction	Accepted	$R^2=0.647$; $F=71.34$; $p<0.001$

Overall, these findings reinforce the argument that digital transformation of academic administrative services at private universities cannot be measured solely by technology adoption, but must be evaluated from a user experience perspective manifested in digitally-adapted SERVQUAL dimensions. Digital reliability as the dominant predictor implies that technology infrastructure investment—particularly server stability, regular system updates, and data accuracy—must be AKBIL's top priority in its next digitalization roadmap.

4. CONCLUSION

This study concludes that digital transformation of academic administration services at Akademi Bisnis Lombok (AKBIL) positively and significantly affects student satisfaction, both partially and simultaneously. Of the five digital service quality dimensions tested, digital reliability ($\beta=0.312$) proved the most dominant predictor, followed by system responsiveness ($\beta=0.241$), information assurance ($\beta=0.198$), technology-based empathy ($\beta=0.176$), and digital tangibility ($\beta=0.143$). Collectively, the five dimensions explain 64.7% of student satisfaction variance ($R^2=0.647$; $F=71.34$; $p<0.001$).

These findings have concrete policy implications for AKBIL. The institution should: (1) prioritize improving SIAKAD infrastructure stability and reliability as an urgent digitalization agenda; (2) enhance the digital competency of administrative HR through regular training to improve digital service responsiveness; (3) strengthen student data security protocols as the foundation of trust in the digital system; (4) develop personalization features and intuitive user guides to improve technology-based empathy; and (5) conduct periodic user experience (UX) evaluations of digital system interfaces. Future research is recommended to integrate moderating variables (student digital readiness, leadership support) and adopt mixed methods approaches for a more comprehensive understanding of digital transformation dynamics in private vocational higher education.

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