

## The Influence of *E-Service Quality* SIAkad and Campus Facilities on the Image of the Institution Through Student Satisfaction (Case Study on STIMI-YAPMI Makassar Campus)

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Submitted:  
20 March 2026

Revised:  
26 March 2026

Accepted:  
24 April 2026

### Abstract

*The digital transformation in higher education requires universities to provide not only reliable technology-based academic services, but also physical facilities that are able to support the student learning experience. This study aims to analyze the influence of E-Service Quality of Academic Information Systems (SIAkad) and campus facilities on the image of institutions with student satisfaction as an intervening variable. The study uses a quantitative approach with a causal associative design. Data was collected through a five-point Likert scale questionnaire from 80 active STIMI-YAPMI Makassar students who were selected using the purposive sampling technique. Data analysis was carried out by validity and reliability tests, path analysis, and Sobel tests to test the role of mediation. The results of the study show that E-Service Quality and physical facilities have a positive and significant effect on student satisfaction and the image of the institution. E-Service Quality has the most dominant influence on student satisfaction. In addition, student satisfaction has been proven to mediate the influence of E-Service Quality on the image of the institution, but does not mediate the influence of physical facilities on the image of the institution. The results of this study indicate that E-Service Quality shapes the image of the institution through student experience and satisfaction, while physical facilities act as a symbol of reputation that directly affects the image. This research provides theoretical contributions in the development of higher education service management models as well as practical implications for university managers in formulating strategies to improve service quality and strengthen the institution's image in a sustainable manner.*

**Keywords:** *E-Service Quality, campus facilities, student satisfaction, institutional image, marketing management*

### 1. INTRODUCTION

The rapid development of digital technology in the era of the Industrial Revolution 4.0 has brought significant changes in the governance of higher education. Universities are no longer only required to provide a quality learning process, but also be able to present an effective, efficient, and information technology-based academic service system. Digital

transformation in academic services is one of the important indicators in increasing the competitiveness of higher education institutions, especially in the midst of increasing expectations of students as main service users.

Universities are seen as service organizations whose success is largely determined by the level of student satisfaction. The quality of good academic services will shape a positive student experience and ultimately have an impact on the public's loyalty and perception of the institution. São Paulo *and., al* (2022) emphasized that service quality is the main factor in building student satisfaction. Therefore, institutional failure in managing service quality has the potential to lower satisfaction levels and weaken the institution's image.

Application *E-Service Quality* through the Academic Information System (SIAkad) is a crucial aspect in supporting student academic activities. Reliable, accessible, secure and responsive digital services play an important role in improving service efficiency and user convenience. However, various studies show that the low quality of digital services such as frequent system interruptions, access delays, and inaccurate information, can trigger student dissatisfaction and lower the perception of institutional professionalism (Anwarudin *et.,al*, 2022).

Campus physical facilities also have a strategic role in shaping student experiences and perceptions. Physical facilities serve as *physical evidence* which is a representation of the quality of the institution. The condition of classrooms, laboratories, academic support facilities, and the campus environment as a whole are visual indicators used by students to assess the credibility and reputation of the university (Muslim & Shaddiq, 2024). The increasingly fierce competition between universities makes the quality of campus facilities one of the determining factors in students' decisions to choose and assess an educational institution (Brayson) *and., al*, 2024)

STIMI-YAPMI Makassar as one of the private universities has implemented digital services through the Academic Information System (SIAkad) to support students' academic activities such as filling out KRS, access to grades, lecture schedules and academic administration. However, a number of technical obstacles were still found, including system disruptions when filling out KRS, inconsistencies in grade data on academic transcripts, and limited system capacity when accessed simultaneously. On the other hand, the dynamics of student needs for physical campus facilities also require sustainable management in order to be able to support the academic process optimally.

Problems with digital services and physical facilities have the potential to affect student satisfaction, which in turn has an impact on the institution's image. Manurung & Pohan (2024) stating that the image of educational institutions is greatly influenced by students' perception of the quality of services they receive. Student satisfaction not only plays a role as the end result of service quality, but also as a mediation mechanism that bridges the service experience with the formation of the institution's image in the long term.

Several previous studies have examined the effects of *E-Service Quality* and campus facilities to student satisfaction, including research conducted by Brayson *and..al* (2024) and Muslim & Shaddiq (2024). However, the study still places student satisfaction as the final dependent variable. In this study, the researcher developed a more comprehensive empirical model in explaining the formation of the image of higher education institutions.

Based on this description, this study aims to analyze the influence of *E-Service Quality* SIAkad and campus facilities on the image of the institution with student satisfaction as an intervening variable in STIMI-YAPMI Makassar. The results of this research are expected to make a theoretical contribution to the development of higher education service management literature as well as a practical contribution for university managers in formulating strategies to improve service quality oriented towards student satisfaction and strengthening the institution's image in a sustainable manner.

## 2. RESEARCH METHOD

This study uses a quantitative approach with causal associative design which aims to examine the relationship between *E-Service Quality* and physical facilities on the image of the institution with student satisfaction as an intervening variable. The research was carried out at STIMI-YAPMI Makassar with active student respondents who had taken at least one academic year and used Academic Information System (SIAkad) services and campus facilities. The sampling technique used purposive sampling with a sample of 80 respondents. Primary data was collected through a five-point Likert scale questionnaire consisting of 18 statement items, covering *E-Service Quality* variables, physical facilities, student satisfaction and institutional image.

Data analysis was carried out in the stages of testing the validity and reliability of the instrument, followed by path *analysis* to test the direct and indirect influence between variables. The analysis model consists of two structural equations, namely the influence of *E-Service Quality* and physical facilities on student satisfaction, and the influence of *E-Service Quality*, physical facilities and student satisfaction on the image of the institution. The testing of the mediating role of student satisfaction was carried out using the Sobel test with a significance level of 5 percent. The entire data analysis process is carried out with the help of SPSS software.

## 3. RESULTS AND DISCUSSION

### Results

Respondents were given a questionnaire consisting of a total of 18 statement items, covering independent and dependent variables. Of these, 4 statement items are related to *E-service quality*, 4 statement items are related to physical facilities, 5 statement items are related to student satisfaction and 5 statement items are related to the image of the

institution. In this study, the number of respondents came from students of the Indonesian School of Management Sciences YAPMI which reached 80 people.

Table 1. Validity Test Results

Variabel	Statement	R <sub>Count</sub>	R <sub>Table</sub>	Remarks
<i>E-service quality (X1)</i>	X1. P1	0.954	0.219	Valid
	X1. P2	0.851	0.219	Valid
	X1. P3	0.894	0.219	Valid
	X1. P4	0.918	0.219	Valid
Physical Facilities (X2)	X2. P1	0.894	0.219	Valid
	X2. P2	0.890	0.219	Valid
	X2. P3	0.891	0.219	Valid
	X2. P4	0.922	0.219	Valid
Student Satisfaction (Z)	Z.P1	0.936	0.219	Valid
	Z.P2	0.898	0.219	Valid
	Z.P3	0.879	0.219	Valid
	Z.P4	0.895	0.219	Valid
	Z.P5	0.914	0.219	Valid
Institutional Image (Y)	Y.P1	0.939	0.219	Valid
	Y.P2	0.868	0.219	Valid
	Y.P3	0.913	0.219	Valid
	Y.P4	0.910	0.219	Valid
	Y.P5	0.904	0.219	Valid

Source : Data Processed, 2026

Based on Table 1, the results of the validity test show that all statement items in the variables *E-service quality (X1)*, Physical Facilities (X2), Student Satisfaction (Z) and Institutional Image (Y) have an r-count value greater than the r-table which means that all statement items in this questionnaire are declared valid and suitable for use as a measurement tool in the research.

Table 2. Results of Reality Test

Abstract	Abstract	Abstract
<i>E-service quality (X1)</i>	0.926	Reliabel
Physical Facilities (X2)	0.920	Reliabel
Student Satisfaction (Z)	0.943	Reliabel
Institutional Image (Y)	0.946	Reliabel

Source : Data Processed, 2026

Based on Table 2, the results of the reliability test show that *Cronbach's Alpha* values in the four variables are well above the standard of 0.60. Thus, it can be concluded that all of these research instruments are reliable and have a very good level of consistency, so they can be trusted to be used in the collection of research data.

Table 3. Coefficient of Structural Path Analysis I

		Coefficients <sup>a</sup>				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.689	.258		2.669	.009
	<i>E-service quality</i>	1.033	.092	.841	11.244	.000
	Physical Facilities	.191	.092	.155	2.071	.042

a. Dependent Variable: Student Satisfaction

Source : Data Processed, 2026

Table 4. Coefficient of Structural Path Analysis II

		Coefficients <sup>a</sup>				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.520	.303		-1.713	.091
	<i>E-service quality</i>	.401	.168	.312	2.385	.020
	Physical Facilities	.503	.107	.390	4.712	.000
	Student Satisfaction	.307	.128	.295	2.400	.019

a. Dependent Variable: Citra Institusi

Source : Data Processed, 2026

The results of the research that have been carried out can be seen in the following equation: Student Satisfaction = 0.841 *E-Service Quality* + 0.155 Physical Facilities  
 Institutional Image = 0.312 *E-Service Quality* + 0.390 Physical Facilities + 0.307 Student Satisfaction

The results above show that, namely:

1. E-Service Quality was able to affect student satisfaction by 0.841.
2. Physical Facilities were able to affect student satisfaction by 0.155.
3. E-Service Quality is able to affect the image of the institution by 0.312.
4. Physical Facilities are able to affect the image of the institution by 0.390.
5. Student satisfaction was able to affect the image of the institution by 0.307.

In the tests , tables 3 and 4 have a significance value of less than 0.05 and if using the comparison of t, count and t, the table also gets results of more than t table, 1,664, this shows that all independent variables have a significant influence on student satisfaction and the image of the institution.

Table 5. Path Determination Coefficient I

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994a	.987	.987	.44940

a. Predictors: (Constant), Physical Facilities, E-Service Quality

b. Dependent Variable : Student Satisfaction

Source : Data Processed, 2026

Table 5 shows that the *adjusted R square value* in the regression model was obtained as 0.987 which means that 98.7 percent of the student satisfaction variables can be explained by the *e-service quality* and physical facilities variables while the remaining 1.3 percent is explained by other variables outside this study.

Table 6. Path Determination Coefficient I

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.993a	.986	.985	.50523

a. Predictors: (Constant), Student Satisfaction, Physical Facilities, E-Service Quality

b. Dependent Variable: Citra Institusi

Source : Data Processed, 2026

Table 6 shows that the *adjusted R square value* in the regression model was obtained as 0.985 which means that 98.5 percent of the institutional image variables can be explained by the variables of *e-service quality*, physical facilities and student satisfaction while the remaining 1.5 percent is explained by other variables outside this study.

Table 8. Sobel Test Results Line I

Input:		Test statistic:	Std. Error:	p-value:
a	1.033	Sobel test: 2.77804517	0.13646682	0.0054687
b	0.367	Aroian test: 2.76775948	0.13697397	0.00564431
s <sub>a</sub>	0.092	Goodman test: 2.7884464	0.13595779	0.00529615
s <sub>b</sub>	0.128	Reset all	Calculate	

Source : Data Processed, 2026

The z-value in the *e-service quality* variable is 2,778 and because the z-value obtained is  $2,778 > 1.96$ , it proves that student satisfaction is able to mediate the relationship between the influence of *e-service quality* on the institution's image.

Table 9. Sobel Line II Test Results

Input:		Test statistic:	Std. Error:	p-value:
a	0.191	Sobel test: 1.56970481	0.03735543	0.1164838
b	0.307	Aroian test: 1.49707847	0.03916762	0.13437284
s <sub>a</sub>	0.092	Goodman test: 1.65404223	0.03545073	0.09811893
s <sub>b</sub>	0.128	Reset all	Calculate	

Source : Data Processed, 2026

The z-value in the facility variable is 2,778 and because the z-value obtained is 1,569 < 1.96, it proves that student satisfaction is not able to mediate the relationship between the influence of physical facilities on the image of the institution.

## Discussion

### 1. The Effect of *E-Service Quality* on Student Satisfaction

The results of the study show that *E-Service Quality* has the most dominant influence on student satisfaction compared to physical facilities. The results of this study indicate that in the context of the digitalization of higher education, students increasingly place the quality of information system-based services as the main need. The effect of *E-Service Quality* ( $\beta = 0.841$ ) reflects that system stability, data accuracy and ease of access are crucial factors in shaping students' academic experience.

The results of this study are in line with the research Brayson *and., al* (2024) which confirms that the quality of digital services has a significant effect on user satisfaction in the higher education environment. Empirically, the phenomenon of system disruption during KRS filling and the value mismatch found proves that digital service failures have a direct impact on the perception of service quality.

### 2. The Influence of Physical Facilities on Student Satisfaction

Physical facilities have also been shown to have a positive effect on student satisfaction, although their contribution is relatively smaller than *E-Service Quality*. This shows a shift in the preferences of modern students who are increasingly adaptive to technology and prioritize the efficiency of digital services. However, the existence of comfortable classrooms, academic support facilities and a representative campus environment remain important elements in shaping the learning experience. The results of the research are in line with the research conducted by Harmen & Pitaloka (2024) which states that campus facilities remain relevant as a determinant of student satisfaction, although not always a dominant factor.

### 3. The Influence of *E-Service Quality* on Institutional Image

Influence *E-Service Quality* The image of the institution shows that the quality of the academic information system not only affects student satisfaction, but also shapes the perception of professionalism and modernity of the campus. In the era of competition between private universities, the ability of institutions to manage digital services is an indicator of organizational credibility. These findings support the results of the study Saputro & Oetomo (2023) which states that the quality of digital platforms contributes to the formation of an institution's reputation. Contextually, students tend to assess campuses that

have a stable digital system as institutions that are adaptive and responsive to technological developments.

#### **4. The Influence of Physical Facilities on Institutional Image**

Physical facilities have a positive and significant effect on the image of the institution. This indicates that campus buildings, laboratories, and other visual infrastructure facilities function as symbols of campus status and bonafidity. According to Tjiptono (2019), because educational services are intangible, students use physical evidence to assess the quality and reputation of the institution. Improving physical facilities at STIMI-YAPMI will be very effective in boosting the image of the campus in the eyes of the public.

#### **5. The Influence of Student Satisfaction on the Image of the Institution**

Physical facilities have a stronger direct influence on the image of the institution than on student satisfaction. This shows that physical facilities function as symbolic *values* that directly affect the perception of campus status and credibility. These findings reinforce the argument of Brayson *et. al* (2024) that the quality of campus facilities can shape the image of the institution without having to be mediated by user satisfaction significantly. Representative buildings and well-equipped facilities are often visual attractions that build a quality campus impression, even before students have thoroughly evaluated the service experience.

#### **6. The Influence of E-Service Quality on the Image of the Institution Through Student Satisfaction**

The role of student satisfaction as a mediating variable shows the different dynamics between digital services and physical facilities. The results of the Sobel test show that student satisfaction is able to mediate the influence *E-Service Quality* to the image of the institution. This means that to build an image through digital services, student satisfaction is an important psychological mechanism. Good system quality must first result in a positive experience before strengthening the institution's image. These findings are in line with Nawangasari & Putri (2020) which states that satisfaction serves as a bridge between the quality of service and the reputation of the organization.

#### **7. The Influence of Physical Facilities on the Image of the Institution Through Student Satisfaction**

The results of the Sobel test showed a Z value of 1,569 ( $< 1.96$ ), which means that student satisfaction is not able to mediate the relationship between physical facilities and the image of the institution. The results of this study show that facilities play a role as a factor in shaping the image of the institution directly. This phenomenon can be explained through the perspective *of the servicescape*, where the physical environment has a strong visual and

symbolic impact on public perception. Thus, improving the quality of SIAkad will be effective in strengthening the image of the institution if accompanied by an increase in student satisfaction, while improving physical facilities tends to directly strengthen the perception of campus reputation without having to go through complex emotional evaluations.

The results of this study show that digital transformation and the management of physical facilities must be seen as complementary strategies in building the image of higher education institutions. In the midst of increasingly fierce competition from private universities, the advantages of digital systems are a factor that shapes experiences, while physical facilities are factors that shape visual and symbolic perceptions. The integration of the two is key in building a sustainable institutional image.

#### 4. CONCLUSION

This study proves that *E-Service Quality* and physical facilities have a positive and significant effect on student satisfaction and institutional image at STIMI-YAPMI Makassar. However, the quality of digital services (SIAkad) has proven to be the most dominant factor in shaping student satisfaction. This shows that there is a shift in the orientation of higher education services, students increasingly place the reliability of digital systems as a core element of the academic experience.

The results of the mediation analysis showed that student satisfaction was able to mediate the influence of *E-Service Quality* on the image of the institution, but did not mediate the influence of physical facilities on the image of the institution. The results of this study indicate that the quality of digital services shapes the image of institutions through the experience evaluation mechanism, while physical facilities tend to shape the image directly through symbolic value and visual perception. Thus, the image of the institution in the context of higher education is not only built through service experiences, but also through physical representations that reflect the credibility and professionalism of the campus. Overall, the integration between digital transformation and the management of physical facilities is a complementary strategy in strengthening the competitiveness of private universities in the era of technology-based competition.

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