

THE INFLUENCE OF SYSTEM QUALITY AND INFORMATION QUALITY ON STUDENT SATISFACTION IN BUSINESS ADMINISTRATION DEPARTMENT USING THE EMIS APPLICATION AT THE STATE POLYTECHNIC OF KUPANG

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Abstract

This study aims to determine the effect of system quality and information quality on student satisfaction in using the Educational Management Information System (EMIS) application at Kupang State Polytechnic. This study was motivated by various obstacles in using the EMIS application, such as slow system access, disruptions during course registration (KRS), and inconsistencies and delays in updating academic information that affect the level of student satisfaction. This study uses a quantitative approach using a survey method. The sampling technique uses probability sampling with a random sampling method. The sample consisted of 175 respondents who were students of the Business Administration Department of Kupang State Polytechnic. Data analysis was carried out using multiple linear regression analysis with the help of the SPSS program. The results showed that system quality has a positive effect on student satisfaction, with a t-value of 3.207 and a significance level of $0.002 < 0.05$. Information quality also has a positive effect on student satisfaction, with a t-value of 7.328 and a significance level of $0.000 < 0.05$. Simultaneously, system quality and information quality have a positive effect on student satisfaction, with an F value of 7.883 and a significance level of $0.000 < 0.05$. The coefficient of determination (R^2) value of 0.505 indicates that 50.5% of student satisfaction can be explained by system quality and information quality, while the remaining percentage is influenced by other variables outside this study. This study concludes that system quality and information quality are important factors in increasing student satisfaction with the use of the EMIS application. Therefore, system administrators are expected to improve system stability, access speed, data security, and the quality of academic information in real time to support effective and efficient digital-based academic services.

Keyword: System Quality, Information Quality, Student Satisfaction, Business Administration

INTRODUCTION

The digital era has transformed the management paradigm of public organizations, including in the higher education sector. This transformation requires educational institutions like the Kupang State Polytechnic (PNK) to shift from conventional services to an information technology-based governance system to create efficiency, transparency, and accountability. One concrete manifestation of digital governance in higher education is the use of the Education Management Information System (EMIS). The EMIS application at Kupang State Polytechnic serves as an academic data center that integrates student data, grades, courses, and even teacher profiles. As a public organization, the success of EMIS implementation is measured not only by the availability of the application, but also by the extent to which the system satisfies its users, in this case, students. However, in practice, a gap often arises between user expectations and the performance of the available system. Technical problems such as slow access speeds during the KRS filling period, incomprehensible application displays, and the accuracy of data updates are frequent complaints from students. According to DeLone & McLean's theory, the success of an information system is largely determined by the quality of the system (System Quality) and the quality of the information (Information Quality) produced. Good system quality (fast, secure, and stable) and accurate and relevant information quality will directly impact student satisfaction levels.

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Conversely, if the system frequently experiences disruptions or the information displayed is inaccurate, the organization's public service image will decline. These two aspects simultaneously become key determinants in shaping user perceptions and experiences of an information system. Although there has been a lot of research on the influence of system quality and information quality on student satisfaction. However, theoretically, there are still gaps in existing studies. Most previous research tends to focus on the business sector or commercial digital services, thus not fully reflecting the characteristics of public organizations, particularly in vocational higher education settings in developing regions.

Several previous studies, such as Rahman et al. (2024) and Putri et al. (2024), which examined the context of digital educational services in developing countries, showed that most studies still tested the direct relationship between one dimension of quality and user satisfaction, without testing both dimensions simultaneously in a comprehensive model based on DeLone & McLean. Other research results conducted by Kumar et al. (2025) and Lee et al. (2025), which have begun to move towards an integrative approach, but their implementation is still limited to the context of general digital platforms and has not specifically examined academic information systems such as EMIS in vocational education institutions. Thus, there remains a gap in the current literature: there are still few studies that comprehensively integrate system quality and information quality into a single analytical model to explain user satisfaction, particularly in the context of academic information systems in higher education. Therefore, this study aims to fill this gap by simultaneously examining both variables in the context of EMIS use at Kupang State Polytechnic.

At Kupang State Polytechnic, the Business Administration Department is one of the departments with a large student population and a high reliance on information systems. Students in this department routinely interact with EMIS for various administrative purposes. However, as users of public services, Business Administration students' satisfaction is often hampered by technical challenges. Based on the results of observations and brief interviews (pre-research) conducted by researchers on several students in the Business Administration Department, the following problem phenomena were found: System Quality Constraints: Although the EMIS application helps and makes it easier for students to complete academic administration needs, there are several student complaints related to obstacles in accessing the EMIS application during peak hours (such as the KRS filling period), where the system sometimes experiences errors or long waiting times (loading). This indicates that the technical performance of the system is not yet fully stable. Information Quality Constraints There are complaints from several students regarding the lack of data synchronization between the information listed in the application and the reality in the field, as well as delays in updating grade information which often triggers student confusion in planning further studies.

The Business Administration Department was chosen as the research focus based on the consideration that students in this department have an understanding of office management and information systems, thus having more specific expectations regarding the quality of digital services. In-depth evaluation at the department level is expected to provide more accurate input for future information systems development. Based on the description above, the researcher is interested in conducting research with the title: "The Influence of System Quality and Information Quality on Business Administration Student Satisfaction in Using the EMIS Application at Kupang State Polytechnic."

Based on the background above, the problem formulation in this research is:

1. Does System Quality have a partial effect on Student Satisfaction in using the EMIS application at PNK?
2. Does Information Quality have a partial effect on Student Satisfaction in using the EMIS application at PNK?
3. Do System Quality and Information Quality have a simultaneous (together) influence on Student Satisfaction in using the EMIS application at PNK?

RESEARCH METHODOLOGY

type of research is quantitative research that aims to determine the effect of system quality and information quality on the satisfaction of business administration students in using the EMIS application at the Kupang State Polytechnic. The sampling technique in this study uses a *probability sampling technique* with a *simple random sampling method*, namely each member of the population has an equal opportunity to become a research respondent. Determination of the number of samples in this study uses the Slovin formula. The sample size is based on the target data representation required with adjustments to the level of error tolerance (Margin of error). The Slovin formula used is:

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$$N = \frac{N}{1 + N(e)^2}$$

Information:

n = number of samples

N = population size

e = Margin of error

This study determines the error tolerance limit e to be 6.83% or (0.0683)

Based on this formula, the calculation is as follows:

$$N = \frac{955}{1 + 955 \times (0.0683)^2}$$

$$N = \frac{955}{1 + 955 \times 0.00466489}$$

$$N = \frac{955}{1 + 4.45496}$$

$$N = \frac{955}{5.45496}$$

$$N = 175.07$$

Thus, the number of respondents in this study was 175. The data analysis technique used was multiple linear regression analysis.

RESULTS AND DISCUSSION

Research Instrument Test

Based on the instrument test on 175 respondents, the validity test results of all variable items were declared valid with the established statistical criteria, namely the calculated r value > 0.3. Meanwhile, the reliability test showed that all research variable items were declared reliable with the established statistical criteria, namely the calculated r value > 0.60.

Multiple Linear Regression Analysis

Based on the results of data processing with the SPSS program, the regression coefficient results are obtained as in the following table.

Table 1
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4,356	.862		5,054	.000
X1	.169	.053	.233	3,207	.002
X2	.396	.054	.533	7,328	.000

a. Dependent Variable: Y

From table 1 above, the following regression equation is formed: $Y = 4.356 + 0.169 X1 + 0.396 X2$

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Hypothesis Testing

Partial Hypothesis Test (t-Test)

Based on the regression coefficient values in Table 1, the partial hypothesis test can be explained as follows:

Hypothesis Test H1

Based on the results of the comparison between the calculated t and the t table for the education variable (X1), the calculated t value is greater than the t table value, ($3.207 > 1.661$) with a significance value/P Value obtained of $0.002 < 0.05$. This shows that H_0 is rejected and H_a is accepted or in other words the system quality variable has a partial effect on student satisfaction in using the EMIS application at PNK.

Hypothesis Test H2

Based on the results of the comparison between the calculated t and the t table for the aesthetic variable (X2), the calculated t value is greater than the t table value, ($7.328 > 1.661$) with a significance value/P Value obtained of $0.000 < 0.05$. This shows that H_0 is rejected and H_a is accepted or in other words the Information Quality variable has a partial effect on Student Satisfaction in using the EMIS application at PNK.

Simultaneous Test of H3 Hypothesis (F-Test)

The results of the F test can be seen in the following table:

Table 2
ANOVA^b

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	477,670	2	238,835	7,883	.000 ^a
	Residual	467,438	172	2,718		
	Total	945,109	174			

a. Predictors: (Constant), X2, X1

b. Dependent Variable: Y

Based on table 2, simultaneous hypothesis testing obtained a calculated F value greater than the F table, ($7.883 > 2,700$) with a significance value of $0.000 < 0.05$. This indicates that H_0 is rejected and H_a is accepted, or in other words, the system quality variable and the information quality variable simultaneously influence student satisfaction in using the EMIS application at PNK.

Test Accuracy Model

Based on results analysis data in get model summary on table following :

Table 3
Model Summary^b

Model	R	R Square	Adjusted Square	Standard Error of the Estimate	Durbin-Watson
1	.711 ^a	.505	.500	1,649	1,882

a. Predictors: (Constant), X2, X1

b. Dependent Variable: Y

From the table above, it can be seen that the correlation coefficient (r) value is 0.711. This indicates that the system quality variable and the information quality variable have a positive relationship with student satisfaction in using the EMIS application at PNK of 71.1%. Meanwhile, the determination coefficient (r^2) value is 0.505, so It can be said that 50.5% of the Student Satisfaction variable in using the EMIS application at PNK can be explained

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by the system quality variable and the Information Quality variable , while the remaining 49.5% is explained by other variables that are not in detail.

Test Prerequisite Analysis Data Normality Test

Data

Based on results test normality Kolmogorov- Smirnov in get results as following :

Table 4

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		175
Normal Parameters ^a	Mean	.0000000
	Standard Deviation	1.63903205
Most Extreme Differences	Absolute	.072
	Positive	.057
	Negative	-.072
Kolmogorov-Smirnov Z		.951
Asymp. Sig. (2-tailed)		.326
a. Test distribution is Normal.		

Based on the table above, it is known that the significance value (Asymp Sig) is $0.326 > 0.05$, so it can be concluded that the residual value is normally distributed.

Test Multicollinearity

Based on analysis data with program SPSS in get results as following :

Table 5
Coefficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	4,356	.862		5,054	.000		
X1	.169	.053	.233	3,207	.002	.545	1,836
X2	.396	.054	.533	7,328	.000	.545	1,836

a. Dependent Variable: Y

From the table above we can If the tolerance value for the two variables is greater ($>$) than 0.1 and the VIF value is smaller ($<$) than 10.00, it can be concluded that the regression model does not have multicollinearity so that the multicollinearity test is fulfilled and the existing regression model is suitable for use.

Test Heteroscedasticity

Based on *the output* of the heteroscedasticity test In the SPSS program the following results were obtained:

Table 6
Test Heteroscedasticity

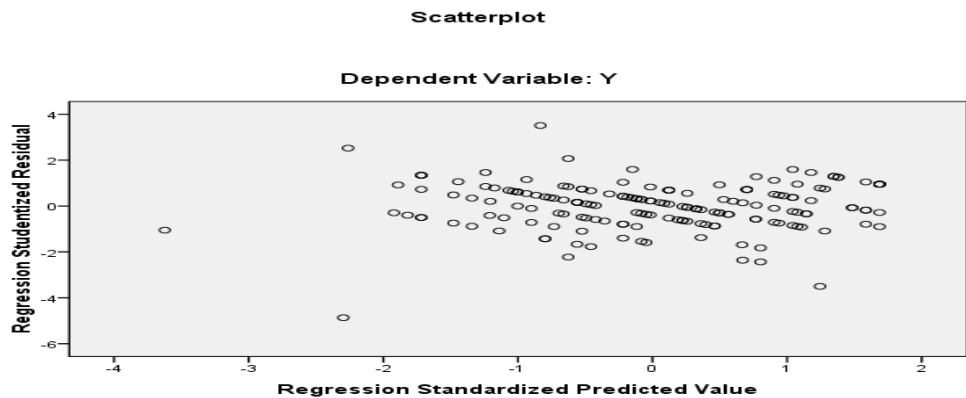


Table in on show that pattern on point – tick spread in on And in below the number 0 on the Y axis, heteroscedasticity does not occur.

Test Autocorrelation

Table 7
Test Autocorrelation

Model	Durbin-Watson
1	1,882

Table in on show that mark DW as big as 1,882 located between d u And (4- d u) then there is no autocorrelation

DISCUSSION

1. The Influence of System Quality on Student Satisfaction in Using the EMIS Application at Kupang State Polytechnic

The results of the study indicate that the system quality variable has a significant positive effect on student satisfaction in using the EMIS application at the Kupang State Polytechnic. This is evidenced by the results of the t-test, where the calculated t value of 3.207 is greater than the t-table of 1.661 with a significance level of $0.002 < 0.05$. Thus, the first hypothesis (H1) is accepted. These findings indicate that the better the quality of the EMIS system, the higher the level of student satisfaction in using the digital academic service. System quality in this study includes ease of access, system response speed, system reliability, user-friendliness, and system security. Students, as the primary users of EMIS, greatly require a stable, fast, and easy-to-operate system to support academic activities such as completing the KRS (Student Study Plan), viewing grades, and accessing other academic information. Theoretically, the results of this study support the theory of DeLone and McLean (2003), which states that system quality is one of the main factors determining the success of an information system. A system with good technical performance will provide a positive user experience, thereby increasing user satisfaction. Conversely, if the system frequently experiences errors, is slow to access, or is difficult to use, user satisfaction will decrease.

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The results of this study also align with those of Rahman et al. (2024), who found that system quality significantly influences user satisfaction with digital education services, particularly in terms of access speed and ease of use. Furthermore, research by Al-Fraihat et al. (2022) also states that a stable, fast, and easy-to-use system can improve user experience and the sustainability of digital education systems. In the context of this research, students of the Business Administration Department at Kupang State Polytechnic assessed that the technical quality of the EMIS application plays a crucial role in supporting their academic activities. However, based on initial observations, several obstacles were still found, such as slow system access during peak hours and disruptions during the KRS (Student Registration) filling process. This condition indicates that the EMIS management needs to continue improving server capacity, system stability, and optimizing application performance to further enhance student satisfaction.

2. The Influence of Information Quality on Student Satisfaction in Using the EMIS Application at Kupang State Polytechnic

The results of the study indicate that information quality has a positive and significant effect on student satisfaction in using the EMIS application at Kupang State Polytechnic. This is evidenced by the results of the t-test where the calculated t value of 7.328 is greater than the t-table of 1.661 with a significance level of $0.000 < 0.05$. Thus, the second hypothesis (H2) is accepted. These results indicate that information quality is a critical factor in increasing student satisfaction with EMIS. Accurate, relevant, complete, timely, and easy-to-understand information will help students gain certainty regarding their academic activities. In an academic information system, information quality is directly related to grade data, class schedules, student plan status, and various other administrative information.

Theoretically, the results of this study support the opinion of Stair and Reynolds (2021), who stated that information quality is the level of accuracy, relevance, completeness, and timeliness of information produced by an information system. Quality information will assist users in making effective decisions and increase user satisfaction. The results of this study also support the research of Putri et al. (2024), which found that information quality significantly influences student satisfaction with higher education academic information systems. Research by Sharma and Gupta (2023) also showed that timeliness and relevance of information are key factors in building user satisfaction with digital-based academic information systems.

In this study, students assessed that the quality of information in the EMIS application significantly determines the comfort of using the system. Discrepancies in academic data, delays in grade updates, and a lack of synchronization between the system and real-world conditions can lead to confusion for students when planning their studies. Therefore, EMIS administrators need to ensure that all information presented is accurate, regularly updated, and reflects actual academic conditions. Furthermore, the research results show that information quality has a more dominant influence than system quality. This is evident from the information quality regression coefficient of 0.396, which is greater than the system quality coefficient of 0.169. This means that students place greater emphasis on the importance of correct and accurate information than solely on the technical aspects of the system.

3. The Effect of System Quality and Information Quality Simultaneously on Student Satisfaction in Using the EMIS Application at Kupang State Polytechnic

The results of the study indicate that system quality and information quality simultaneously have a positive and significant effect on student satisfaction in using the EMIS application at the Kupang State Polytechnic. This is proven by the results of the F test where the calculated F value of 7.883 is greater than the F table of 2.700 with a significance level of $0.000 < 0.05$. Thus, the third hypothesis (H3) is accepted. These results indicate that student satisfaction is not influenced by a single factor, but is jointly influenced by both system quality and the quality of information generated by the EMIS application. A good system without accurate information will still lead to user dissatisfaction. Conversely, good information presented through a slow and difficult-to-use system will also reduce student satisfaction. The coefficient of determination (R^2) of 0.505 indicates that 50.5% of student satisfaction can be explained by system quality and information quality, while the remaining 49.5% is influenced by other variables outside this study. These other variables include service quality, user experience, user trust, ease of interaction, and

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technical support from system administrators. Theoretically, the results of this study reinforce DeLone and McLean's (2003) model of information system success, which explains that system quality and information quality are key dimensions in determining information system success and user satisfaction. These two variables complement each other in creating an effective and efficient system user experience.

The findings of this study also support the research of Kumar *et al.* (2025), which stated that the integration of system quality and information quality can significantly improve user experience and user satisfaction on digital education platforms. Therefore, the implementation of EMIS at Kupang State Polytechnic requires integrated management of the technical aspects of the system and information quality to ensure optimal digital-based academic services. Based on the results of this study, the practical implications for Kupang State Polytechnic include improving the quality of its technology infrastructure, optimizing its EMIS server, enhancing data security, and providing real-time academic information updates. These steps are crucial for enhancing the quality of digital-based public services and supporting effective, transparent, and accountable academic governance.

Conclusion

1. Based on the research results, it was concluded that The system quality variable has a positive effect on student satisfaction in using the EMIS application at Kupang State Polytechnic. This shows that the better the system quality such as ease of access, response speed, security, and system reliability, the higher the level of student satisfaction.
2. Information quality positively impacts student satisfaction in using the EMIS application at Kupang State Polytechnic. This demonstrates that accurate, complete, relevant, timely, and easy-to-understand information can increase student comfort and satisfaction in using the academic information system.
3. System quality and information quality simultaneously have a positive effect on student satisfaction in using the EMIS application at Kupang State Polytechnic. The information quality variable is the most dominant variable influencing student satisfaction. This indicates that students place more emphasis on the importance of accurate and appropriate academic information than solely on the technical aspects of the system.

Suggestion

Based on the results of the research that has been conducted, the researcher provides the following suggestions:

1. The EMIS application manager at Kupang State Polytechnic is expected to improve the quality of the system by optimizing the server, improving system stability, increasing access speed, and strengthening data security so that the application can be used more effectively, especially during peak hours such as the KRS filling period.
2. EMIS administrators need to improve the quality of information by ensuring that all academic data such as grades, class schedules, and KRS status are always updated in real-time, accurately, completely, and in accordance with actual academic conditions so as to minimize misinformation that is detrimental to students.
3. The Business Administration Department is expected to provide responsive technical support services for students when they experience problems using the EMIS application so that the academic administration process can run smoothly.
4. For further researchers, it is recommended to add other variables that are suspected of influencing information system user satisfaction, such as service quality, user trust, user experience, ease of use, and organizational support so that the research results are more comprehensive.
5. It is also hoped that further research can expand the research objects to other departments or other universities so that the research results can be compared and generalized more widely.

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