



## The Influence of Academic Service Quality on Student Loyalty: Mediating Effects of Student Satisfaction

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### Abstract

*This study aims to analyze the effect of academic service quality on student loyalty and explore the role of student satisfaction as a mediating variable in this relationship. Specifically, this study seeks to identify the extent to which academic service quality can increase student loyalty directly or indirectly through student satisfaction. The method used in this study is path analysis. The data used are quantitative data collected through a survey using a questionnaire. The research sample consisted of 100 students undergraduate from various study programs at Yogyakarta Aerospace Technology College selected using convenience sampling techniques. Data processing and analysis were carried out using AMOS software to test the relationship between variables in the research model. The results of the study indicate that academic service quality has a positive and significant effect on student satisfaction, which in turn affects student loyalty. Student satisfaction is proven to be a mediating variable that strengthens the relationship between academic service quality and student loyalty. This finding emphasizes the importance of improving academic service quality in building student loyalty in higher education environments.*

**Keywords:** *Academic Services Quality; Student Satisfaction; Student Loyalty*

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### 1. Introduction

Education is the spearhead of a nation's progress. Smartening the nation's life will start from education. The government continues to try to prioritize development in the education sector, especially the quality of education so that it can produce quality and productive human resources. Educational institutions have the main function of providing graduates, not only in large numbers but also of high quality and discipline, capable of becoming dynamists, innovators, motivators and drivers of development as well as producing quality workers for various types and levels of expertise. In this regard, services to the community, namely students, must be improved both in terms of quality and quantity ([Sultan et al., 2010](#)).

Higher education plays a crucial role in developing high-quality and competitive human resources. In an increasingly competitive academic environment, universities are required to provide high-quality academic services to meet student expectations. Good academic service quality not only enhances students' learning experiences but also contributes to their satisfaction and loyalty toward the institution ([Alves & Raposo, 2007](#)) ; ([D. Clemes et al., 2013](#)). Student loyalty is a critical factor in the sustainability of higher education institutions. Loyal students tend to have higher retention rates, recommend the institution to prospective students, and actively participate in various academic and non-academic activities. One of the key factors that can enhance student loyalty is their satisfaction with the academic services provided. In this context, student satisfaction serves as a mediating variable that connects academic service quality with student loyalty ([Annamdevula & Bellamkonda, 2016a](#)).

Service quality is a multidimensional driver of satisfaction. The level of service quality cannot be assessed from the company's perspective but must be viewed from the customer's assessment perspective. Satisfaction from the consumer side is considered good if it meets what they expect, whereas service will be perceived as bad if it does not meet their expectations ([Kotler, 2010](#)). Customer satisfaction is a perception of a product or service that has met their expectations. Consumer behavior theory states that customer satisfaction is the perspective of a consumer's experience after consuming or using a product or service ([Oliver, 1999](#)). Customer satisfaction is expected to influence loyalty. Loyal customers can provide great benefits to an organization ([Sum & Hui, 2009](#)).

Education providers should pay attention to the quality of service. Educational activities are not only oriented towards the final results of the educational process, but also through proof of good accountability including quality assurance, quality control and quality improvement. Public interest in studying at the Aerospace Technology College is very high. Every year the average reaches 700 to 800 students. Students who have successfully completed their education can work in various aviation/aerospace sectors. The educational programs offered by the College of Aerospace Technology are the Strata 1 (S1) program in Aerospace Engineering, Mechanical Engineering, Electrical Engineering. Diploma IV, Diploma III and Diploma I in the fields of Air Transportation Management, Aeronautics, Transportation Management, Ground Handling, Flight Attendants, with various majors in accordance with the demands and developments of the current aviation/aerospace industry.

This number of students, educational management must be balanced with the provision of good services, following established academic rules, as a basis for implementation by the entire academic community, namely administrative staff, lecturers, students and educational management. To be able to synchronize these academic regulations with the expected goals, a strong commitment is required from each party, namely students, lecturers, administrative staff and management to implement and evaluate their activities so that the goals can be achieved in accordance with the vision and mission of this institution. The priority in the field of services provided to students is of course the field of academic services. Quality academic services are expected to provide student satisfaction, and students who receive services can provide evaluations of the services they receive. Both parties have a reciprocal relationship so that each party gets the same satisfaction.

Competition in the higher education sector in Indonesia is becoming increasingly intense, marked by various innovations and improvements in service quality implemented by universities to attract and retain students. Higher education institutions not only serve as providers of education but also as providers of academic services that must ensure student satisfaction as a key factor in fostering student loyalty. Good academic service quality can enhance the institution's image and have a positive impact on the competitiveness of the university. On the other hand, inadequate

services can lower student satisfaction and potentially reduce their loyalty to the educational institution.

One of the universities that continue to strive to improve the quality of academic services is the Aerospace Technology College. The services provided encompass various aspects, such as academic administration, learning processes, structural services, academic advising, and exam implementation. Despite various efforts to improve services, some issues still exist regarding the discrepancy between student expectations and the services they receive. This can be seen from the complaint data received by the public relations and customer service bureau, which handles criticisms, suggestions, and complaints from students. Therefore, research is needed to identify the extent to which academic service quality influences student loyalty and whether student satisfaction mediates this relationship.

Several previous studies have examined the relationship between academic service quality and student loyalty. For instance, a study by [Supriyanto et al., \(2024\)](#) shows that academic service quality significantly impacts student loyalty, both directly and through student satisfaction. However, this research did not consider factors specific to the characteristics of higher education institutions in Indonesia, especially in the context of the increasingly competitive higher education sector. Additionally, another study by [Annamdevula & Bellamkonda, \(2016\)](#) found that student satisfaction can act as a mediator strengthening the relationship between academic service quality and student loyalty, but this research did not delve deeply into how specific elements of academic services contribute to student satisfaction and loyalty.

Therefore, this study aims to fill the existing research gap by analysing the effect of academic service quality on student loyalty and exploring the role of student satisfaction as a mediating variable. The results of this research are expected to contribute to university administrators in improving the quality of academic services to enhance student loyalty and institutional competitiveness in the era of global competition.

## 2. Literature Review

The findings of this study confirm the significant influence of academic service quality on student loyalty, with student satisfaction playing a crucial mediating role. These results align with previous research, which suggests that high-quality academic services contribute to increased student satisfaction, ultimately strengthening their loyalty to the institution ([Annamdevula & Bellamkonda, 2016b](#)). The study's findings indicate that when students perceive academic services as reliable, responsive, and student-centered, they tend to develop a sense of attachment and commitment to their university.

Furthermore, the mediating effect of student satisfaction highlights the importance of addressing students' academic needs, support systems, and overall learning experience. This finding supports the argument that student satisfaction acts as a bridge between service quality and loyalty, reinforcing the idea that higher education institutions must focus not only on service delivery but also on students' perceptions and emotional connections to the academic environment. From the perspective ([Hapsari et al., 2016](#)) of Sharia management, academic service quality is not only oriented toward general service standards but also based on Islamic principles, such as *ihsan* (excellence in service), *Amanah* (trustworthiness), and *maslahah* (benefit for students and society).

Universities that implement Sharia-based management principles in their academic operations tend to provide services that are more ethical, just, and spiritually meaningful, ultimately enhancing student satisfaction and loyalty ([Putri et al., 2023](#)). Student loyalty in institutions that adopt Sharia principles is not solely based on academic factors but also on the institution's adherence to Islamic moral and ethical values ([Kamal et al., 2020](#)). Therefore, integrating Sharia management in

academic services can serve as a strategic approach to increasing institutional competitiveness, particularly in attracting and retaining students who prefer an education system aligned with Islamic values.

The college of aerospace technology provides higher education services in the aerospace field by educating professional personnel who have the characteristics of 5T (Taqwa, Technocrat, Responsive, Tanggon, and Trengginas) for all levels of society to help realize the ideals of national welfare through the implementation of the Tri Dharma of Higher Education.

### **Quality of Academic Services Influences Student Satisfaction**

Service quality can be interpreted as how far the difference is between reality and customer expectations regarding the service they receive. If the reality is the same or more than expected, then the service can be said to be quality or satisfactory, and vice versa. Service quality is something that is felt by customers. Customers will judge the perceived quality of service based on what they picture in their minds. Customers will switch to other service providers who are better at understanding customer specific needs and providing better services ([Ladhari, 2009](#)). Service quality is a level of excellence that a person feels about a service which is expected from the comparison between desires and the performance felt by consumers after purchasing the service. If the service received or felt (perceived service) is as expected, then the quality of service is perceived as good and satisfying. Service quality is the expected level of excellence and control over this excellence to meet customer or consumer expectations.

Based on Patterson and Spreng in [Estiri et al., \(2011\)](#) stated that satisfaction is a feeling or attitude when a consumer can find that their expectations are fulfilled regarding an attribute contained in a product or service and this will lead to satisfaction in all aspects of the service. Satisfied consumers will make repeat purchases and will spread positive information to other potential consumers about the service. Furthermore, [Bitner, \(1992\)](#) satisfaction is an assessment of whether a product or service or the features of a product or service can provide a certain level of pleasure so that it can fulfill consumer desires. The satisfaction variable has the following indicators: satisfaction with the products and services offered by the university, satisfaction with the service and the way the service is provided, as well as satisfaction with the overall process and results obtained through the university. According to [Prasetyani et al., \(2014\)](#), satisfaction is a person's feeling of pleasure that arises after he compares the performance of the product he is thinking about with the performance or results he expected. If the performance is below the customer's expectations, then he will feel dissatisfied. Conversely, if performance meets or exceeds expectations, then customers will feel satisfied or very satisfied. [Yusmardi & Evanita, \(2019\)](#) further explained that the costs of retaining existing customers will be much cheaper than the costs of finding new customers. For this reason, consumer retention is one of the company's efforts to improve product performance. Based on this description, the first hypothesis (H1) is:

H1: The quality of academic services influences student satisfaction

### **Quality of Academic Services Influences Student Loyalty**

Service quality is the quality of a service or service that depends on two variables, namely: expected service and service received, with some previous experience, with services that can influence consumer expectations, in other words the service received is the result. consumer perception. about the service itself. Consumers shop at a certain place because they like the services provided and guarantee that they will provide services in accordance with the rights that consumers have to receive. Employee performance stimulates bonding through trust between sales representatives and consumers ([Leung & Kin-man, 2001](#)) ; ([Athar et al., 2023](#)). Service quality is a consumer's assessment of the entire process of providing a particular service. This assessment is

based on the service conditions that should be provided by the service provider (expectations from consumers) with the actual conditions of the service delivery process ([Parasuraman et al., 1994](#)). According to [Sum & Hui, \(2009\)](#) service quality is a service process that is delivered in accordance with consumer expectations but in consistent steps. Service quality is a type of personal selling and involves direct interaction between the seller and the potential buyer. Based on [Dedeke, \(2003\)](#), service quality is the ability to meet and exceed what consumers expect. In this research there will be 4 variables where the variables and indicators are like this. For the service quality variable, the measurement is based on [K. Cheruiyot & C. Maru, \(2013\)](#) which is a modification of [servqal Parasuraman dkk., \(1994\)](#). Which will be divided into 5 dimensions, namely tangible indicators of the availability of health facilities, the availability of recreation or relaxation areas, security facilities, learning and teaching facilities. The next dimension is reliability with indicators of availability of choices, reliable teaching and learning schedules, good time management and good examination processes, consistency in teaching and effective classroom management, standard and appropriate procedures, recording of activities that occur, and good communication. Good. between lecturers and students. The next dimension is responsiveness with indicators of the willingness and intention of employees to help students, staff and lecturers have good policies. The fourth dimension is assurance, the indicators of which are employees' knowledge of their work, their expertise, their level of honesty, and whether they can be trusted. And the last dimension is empathy which has indicators of the ability to listen, understand, approach and continue to provide information that is important and needed by students.

According to [Yusmardi & Evanita, \(2019\)](#), consumer loyalty is the attitude of consumers who honestly feel satisfaction from the results of purchasing products or services offered by producers or sellers, so that they will buy these products repeatedly and create long-term relationships. Customer loyalty is part of human activity and continues to change depending on the environmental and social impacts of where it is located. However, the consumer behavior that the company hopes will continue is loyalty. Loyalty means customers will continue to make purchases regularly ([Puspaningrum, 2018](#)). Based on this description, the first hypothesis (H2) is:  
H2: The quality of academic services influences student loyalty

### **Student Satisfaction Influences Student Loyalty**

According to [Zhu & Chen, \(2015\)](#), consumer satisfaction is a perception of a product, whether goods or services, that gives satisfaction to him if his expectations are met. Satisfaction is a feeling that arises when consumers compare their perceptions of the performance of a product or service which is higher than their expectations. Satisfaction can encourage customer action to reuse the products and services offered by the company. Satisfied customers tend to reuse the products or services offered by the company. The concept of satisfaction occupies a central position in marketing thought and practice. Satisfaction is the main factor that is most felt in quality ([Casidy & Wymer, 2015](#)). Service Quality can improve the quality of service, thereby creating customer satisfaction ([Anderson & Srinivasan, 2003](#)). This is because perceptions of quality and satisfaction are driven by attitudes. Research also finds that service quality has a direct effect on satisfaction ([Babin et al., 2005](#)). For customers who receive good service, the satisfaction provided by the service provider will increase.

Consumer loyalty according to [Ladhari, \(2009\)](#) where the measurement will be divided into 2 dimensions, namely the economic dimension of consumer loyalty with indicators of willingness to spend more money to study, will not move to another university. The next dimension is consumer loyalty which has indicators of being willing to promote higher education and being willing to spread positive news. Loyalty is a consumer's commitment to using a product, so that he or she

will make repeated purchases and faithfully buy the product ([Boohene & Agyapong, 2011](#)). Based on this description, the first hypothesis (H3) is:

H3: Student satisfaction influences student loyalty

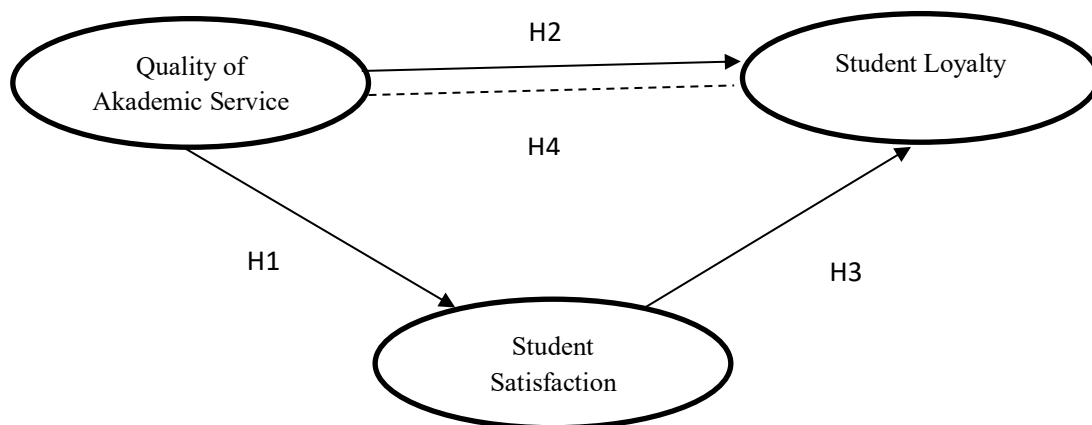
### Quality of Academic Services influences Student Loyalty through Student Satisfaction

[Boohene & Agyapong, \(2011\)](#) explained that the results of research show that there is a significant influence between service performance and customer satisfaction. This means that if the service performance provided to customers is further improved, it will increase customer satisfaction. Service performance influences customer loyalty, meaning that the higher the service performance provided to customers, the greater the customer loyalty in using the service. There is a significant influence between customer satisfaction and customer loyalty, which means that if the level of customer satisfaction increases, customer loyalty will also increase. Customer satisfaction can be an intervening variable between service performance and customer loyalty. It can be interpreted that the higher the service performance provided, the higher the level of customer satisfaction, which will have an impact on increasing customer loyalty. Based on the description above, a hypothesis can be made regarding the influence of academic service quality on student loyalty as follows:

H4: Quality of Academic Services influences Student Loyalty through Student Satisfaction

### Research Framework

The framework for thinking in this research is presented in the image below:



Picture 1. Thinking Framework

### 3. Methodology

This study was conducted in the period from September to November 2023, with the aim of analyzing the effect of academic service quality on student loyalty, as well as exploring the role of student satisfaction as a mediating variable. The variables in this study consist of independent variables, namely Academic Service Quality; mediating variables, namely Student Satisfaction; and dependent variables, namely Student Loyalty. The population in this study was all active

students at the College of Aerospace Technology, totaling 2,039 students. To determine the number of samples, the Slovin formula was used with a margin of error of 10% ( $e = 0.1$ ). Based on the calculation, the minimum number of samples obtained was 93.37, which was then rounded up to 100 respondents to meet the minimum sample requirements. The sampling technique used in this study was convenience sampling, namely a sampling method based on the availability and ease of access to respondents at the time of questionnaire distribution (Sugiyono, 2010). The questionnaire was distributed randomly to students who were willing to fill it out, taking into account the ease of the data collection process. Data collection was conducted through questionnaires distributed to respondents during the research period. The data obtained were analyzed using the Path Analysis method with the help of AMOS software to test the relationship between academic service quality, student satisfaction, and student loyalty.

With this methodology, the study is expected to provide a deeper understanding of the factors that influence student loyalty in higher education, as well as practical implications for educational institution managers in improving the quality of academic services. The data analysis method used to analyze the influence or relationship between the dependent variable and the independent variable is through intervening variables. The method used is path analysis, a development technique of multiple linear regression. This technique is used to test the magnitude of the contribution shown by the path coefficient on each path diagram of the causal relationship between variables  $X_1$  on  $Y_1$  and the impact on  $Y_2$ . "Path analysis is a technique for analyzing cause and effect relationships that occur in multiple regression if the independent variable influences the dependent variable not only directly but also indirectly" (Sugiyono, 2010).

#### 4. Results And Discussion

The validity test in this study was conducted using the Confirmatory Factor Analysis (CFA) method to assess the adequacy of indicators in measuring the researched variables. The validity assessment was carried out by examining the factor loading value for each variable indicator, where an indicator is considered valid if it has a factor loading value of  $\geq 0.50$  (Hair et al., 2014). The test results indicate that all indicators in this study have factor loading values above the minimum threshold, leading to the conclusion that the research instrument meets the validity criteria. Furthermore, a reliability test was conducted to measure the internal consistency of the research instrument using the Cronbach's Alpha method. An instrument is considered reliable if it has a Cronbach's Alpha value of  $\geq 0.70$  (Hair et al., 2014). The analysis results show that all variables in this study exhibit high reliability levels, with Cronbach's Alpha values of 0.85 for Academic Service Quality, 0.87 for Student Satisfaction, and 0.82 for Student Loyalty. Since all Cronbach's Alpha values exceed the minimum threshold, it can be concluded that the research instrument has a good level of reliability and can be used for further analysis.

Before conducting Path Analysis, a series of classical assumption tests were performed to ensure that the data met the required statistical criteria. Normality testing was conducted by analyzing Skewness and Kurtosis values, as well as using the Kolmogorov-Smirnov test. The test results indicated that the data followed a normal distribution, with a significance value  $> 0.05$ , allowing for further analysis. Next, multicollinearity testing was carried out by examining the Variance Inflation Factor (VIF) and Tolerance Value to ensure that there was no high linear correlation between independent variables. The analysis results showed that all variables had  $VIF < 10$  and  $Tolerance > 0.1$ , indicating that multicollinearity was not a concern in this research model. Additionally, heteroscedasticity testing was conducted using the Glejser Test, by analyzing the significance of residuals against independent variables. The test results demonstrated that all significance values were  $> 0.05$ , confirming the absence of heteroscedasticity issues. After

ensuring that the data met the requirements for validity testing, reliability testing, and classical assumption tests, the next step was to perform Path Analysis to examine the relationships between the variables in this study.

**Table 1. Regression Equations on the Effect of Academic Service Quality on Student Satisfaction**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	5.378	1.763		1.314	.003
Quality of Academic Services	.646	.102	.675	11.164	.000

Source: Primary Data, 2023

Structural equation 1 is as follows:  $Y = 5.378 + 0.675X_1 + e$

From the equation above, it can be concluded that the regression coefficient value on the service performance variable on student satisfaction is positive with a value of 0.675 and a significance value of  $0.000 < 0.05$ , so it means that the quality of academic services provided by the College of Aerospace Technology increases, which will increase loyalty. Students assuming other variables are fixed.

**Tabel 2. Regression Equation for the Effect of Academic Service Quality and Student Satisfaction on Student Loyalty**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	4.389	2.163		2.414	.005
Quality of Academic Services	.368	.177	.136	3.643	.020
Student Satisfaction	.546	.252	.475	4.164	.000

Source: Primary Data, 2023

Structural equation 2 is as follows:  $Y = 0.136X_1 + 0.475X_2 + e$



From the multiple linear regression equation above, it shows that:

- a. The results of the regression equation between Academic Service Quality and Student Loyalty show that the regression coefficient value has a positive and significant parameter with a value of 0.136, which means that if the Quality of Academic Service at the Aerospace Technology College increases, it will increase Student Loyalty assuming other variables are constant.
- b. The regression coefficient value between student satisfaction and student loyalty shows a positive and significant parameter with a value of 0.475, which means that if student satisfaction increases, it will increase student loyalty assuming other variables are constant. To determine the results of the mediation effect between Academic Service Quality on Student Loyalty and Student Satisfaction as an intervening variable.

## Hypothesis Testing Results

### The Influence of Academic Service Quality on Student Satisfaction

Hypothesis 1 testing is used to determine whether there is an influence between the quality of academic services on student satisfaction. Based on the output results, the calculated t value for the academic service quality variable was 11.164 with a significance value of  $0.000 < 0.05$ , so the calculated t value =  $11.164 > t$  table value = 2.0032. This explanation can be interpreted as meaning that there is a significant influence between the quality of academic services on student satisfaction. It can be interpreted that if the quality of academic services provided by the Aerospace Technology College to students is further improved, it will increase student satisfaction. The results of this research are in accordance with the research results of Clemes et al., (2013) who found the influence of perceived service quality on satisfaction, [Sultan & Yin Wong, \(2010\)](#) who found that service quality will have an important influence. impact on customer satisfaction. Furthermore, according to ([Manaf et al., 2013](#)) ; ([Ladhari, 2009](#)) ; ([Vauterin et al., 2013](#)) ; ([Sihombing et al., 2023](#)), all of whom researched service quality in higher education and found that service quality has an influence on student satisfaction in higher education. university. Based on the test results, it can be concluded that the test is able to accept H1, so that the alleged influence of academic service quality on student satisfaction is proven or acceptable.

### The Influence of Academic Service Quality on Student Loyalty

Based on the test results between the quality of academic services and student loyalty, the calculated t value was 3.643, with a significance value of  $0.020 < 0.05$ . so the calculated t value =  $3.643 > t$  table value = 2.0040. This explanation can be interpreted that the quality of academic services influences student loyalty, meaning that the higher the quality of academic services provided to students, the greater the loyalty of students in using education at the Aerospace Technology College. This is in accordance with research by ([Suwandoyo et al., 2023](#)) ; ([Sihombing et al., 2023](#)) which explains that the quality of academic services can be explained by the factors physical evidence, reliability, responsiveness, empathy which have a strong effect and guarantees have a weak effect. The quality of academic services has a significant effect on student loyalty through student satisfaction, while the quality of academic services directly has an insignificant effect on loyalty. In this way, the quality of academic services provided will further improve the quality of services/services because measurement of service quality has created high student loyalty, where student expectations regarding the quality of services provided refer to the expectations that students want. Based on the test results, it can be concluded that the test is able to accept H2, so that the alleged quality of academic services influences student loyalty and is proven or acceptable.

### **The Influence of Student Satisfaction on Student Loyalty**

Based on the results of calculations between student satisfaction and loyalty that have been carried out, the calculated t value is 4.164 with a significance result of  $0.000 < 0.05$ . so the calculated t value =  $4.164 > t$  table value = 2.040. This shows that there is a significant influence between student satisfaction and student loyalty. This explanation can be interpreted as meaning that if the level of student satisfaction increases, customer loyalty will also increase. The results of this research are in accordance with the research results of [Olorunniwo et al., \(2006\)](#) which found that positive consumer loyalty from consumers can be driven by the satisfaction obtained by these consumers. Furthermore, [\(Kessler & Mylod, 2011\)](#) ; [\(Sultan & Yin Wong, 2010\)](#) ; [\(Sihombing et al., 2023\)](#) ; [\(Lubis et al., 2023\)](#) ; [\(Kamaroellah et al., 2021\)](#) and [\(Amin & Nasharuddin, 2013\)](#) also found that consumer satisfaction will influence and encourage consumer loyalty from a consumer. Based on the test results, it can be concluded that hypothesis testing is able to accept H3 so that the hypothesis which states the alleged influence of student satisfaction on student loyalty can be accepted.

### **The Influence of Academic Service Quality on Student Loyalty Through Student Satisfaction**

In this test, the mediation effect will be tested, namely the influence of academic service quality on student loyalty through satisfaction as an intervening variable. To determine the effect of mediation, this is done by comparing the results of the standardize coefficient directly and indirectly. The following are the results of mediation testing for the direct and indirect influence of academic service quality on student loyalty through the mediation of student satisfaction as an intervening variable. Based on the SPSS testing results, the interpretation of the results of the path analysis between academic service quality and student loyalty through the student satisfaction variable as an intervening variable can be carried out as follows:

The total influence of service performance on customer loyalty can be seen [\(Ghozali, 2008\)](#):

- Direct effect of service performance on customer loyalty = 0.247
- Indirect influence of service performance on customer satisfaction to customer loyalty  
=  $0.675 \times 0.475 = 0.320$
- Total effect:  $0.529 + 0.247 = 0.708$

Based on the results of the calculations above, it shows that the direct influence between Academic Service Quality on student loyalty is obtained by a regression coefficient of 0.247, while the total indirect influence between academic service quality on student satisfaction and student loyalty is obtained at 0.708, thus exceeding the direct influence of 0.247. Because the indirect effect is greater than the direct effect, namely  $0.708 > 0.247$ , it can be concluded that the actual relationship is direct, meaning that student satisfaction can be an intervening variable between academic service quality and student loyalty. This explanation can be interpreted as meaning that the higher the quality of academic services provided, the higher the level of student satisfaction, which will have an impact on increasing student loyalty. This is in line with [\(Boohene & Agyapong, 2011\)](#) ; [\(Sihombing et al., 2023\)](#) explaining the results. The research results show that there is a significant influence between service performance and customer satisfaction. This means that if the service performance provided to customers is further improved, it will increase customer satisfaction. Service performance influences customer loyalty, meaning that the higher the service performance provided to customers, the greater the customer loyalty in using the service. There is a significant influence between customer satisfaction and customer loyalty, which means that if the level of customer satisfaction increases, customer loyalty will also increase. Customer satisfaction can be an intervening variable between service performance and customer loyalty. It can be interpreted that the higher the service performance provided, the higher the level of customer satisfaction, which will have an impact on increasing customer loyalty. Based on the test results, it can be concluded that the test is able to accept

H4, so that the alleged influence of academic service quality on student loyalty through satisfaction at the Aerospace Technology College is proven or acceptable.

### Analysis of the Coefficient of Determination

Coefficient of determination analysis is used to measure how far the model's ability is to explain variations in the dependent variable, which is indicated by the Adjusted R Square value. Adjusted R Square was chosen so that the data is not biased by the number of independent variables included in the model. For every additional independent variable, R square will definitely increase, no matter whether that variable has a significant effect on the dependent variable. Therefore, many researchers use the Adjusted R Square value when evaluating which regression model is best (Ghozali, 2008). The following are the test results assisted by the SPSS program as follows:

**Table 3. of Determination Coefficient of the Effect of Academic Service Quality on Student Satisfaction**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,743 <sup>a</sup>	,620	,608	4,18305

Source: Primary Data, 2023

Based on the output display in the table above, it shows that the percentage of the customer loyalty variable can be explained by the service performance variable, shown by the Adjusted R Square value of 0.608. In this case it can be interpreted that customer loyalty can be explained by the service performance variable, the value is 60.8%. while the remaining 39.2% (100% - 60.8%) is explained by other variables not examined in this study.

In model II, between the influence of service performance and customer satisfaction on customer loyalty, the Adjusted R Square value is obtained as follows:

**Table 4. of Determination Coefficient of the Effect of Academic Service Quality and Student Satisfaction on Student Loyalty**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,873 <sup>a</sup>	,770	,748	5,28315

Source: Primary Data, 2023

The output results in the table above show that the percentage of student loyalty variables can be explained by the two variables academic service quality and student satisfaction, shown by the Adjusted R Square value of 0.748. In this case, it can be interpreted that student loyalty can be explained by the two variables academic service quality and satisfaction. students' score was 74.8%, while the remaining 26.2% (100% - 74.8%) was explained by other variables not examined in this study.

The findings of this study have significant implications for aerospace technology colleges, especially in increasing student satisfaction and loyalty through improving the quality of academic services. Aerospace technology colleges need to understand that student satisfaction is not only influenced by administrative and academic aspects, but also by their holistic experience during their education. Therefore, universities must develop service strategies that are not only efficient but also aligned with students' needs and expectations, including the moral and ethical values they uphold. In the context of Sharia management, academic service quality should be based on the principles of justice (*al-'adl*), trustworthiness (*amanah*), excellence in service (*ihsan*), and public benefit (*maslahah*). These principles guide educational institutions to not only focus on academic and facility satisfaction but also to ensure that the services provided align with Islamic values, such as transparency, ethics, and social responsibility. For example, the implementation of a fair and inclusive academic system, financial transparency, and concern for student welfare can enhance students' trust in the institution ([Ritonga et al., 2021](#)).

Sharia management theory emphasizes that student loyalty can be strengthened by fostering a more meaningful and sustainable relationship between students and institutions, not only based on academic satisfaction but also on shared values and spiritual connections. This aligns with the concepts of ta'awun (*cooperation in goodness*) and ukhuwah Islamiyah (*Islamic brotherhood*), where Sharia-based educational institutions serve not only as places of learning but also as centers for character and moral development. Therefore, applying Sharia management principles in academic services not only impacts student satisfaction but also serves as an effective strategy for increasing their loyalty to the institution ([Anwar et al., 2024](#)).

## 5. Conclusion

Based on the research conducted, the following conclusions can be drawn: (1) There is a significant influence of academic service quality on student satisfaction, meaning that the better the academic services provided by the Aerospace Technology College, the higher the student satisfaction. (2) There is a significant influence of academic service quality on student loyalty, meaning that the higher the quality of academic services provided to students, the greater the students' loyalty in using the educational services at the Aerospace Technology College. (3) There is a significant influence of student satisfaction on student loyalty, meaning that as the level of student satisfaction increases, student loyalty will also increase. (4) Student satisfaction can act as an intervening variable between academic service quality and student loyalty, meaning that the higher the quality of academic services provided, the higher the level of student satisfaction, which will impact the increase in student loyalty. However, this study has some limitations that should be taken into consideration. First, this research was conducted at only one university, the Aerospace Technology College, so the results may not be fully generalizable to other educational institutions. Second, this study used a questionnaire for data collection, which might have limitations in terms of respondent subjectivity. Third, this research did not explore external factors that may influence student loyalty, such as social and economic factors. Therefore, further research is suggested to expand the sample by including more universities and considering other variables that may impact student loyalty. Thus, although this study provides valuable insights into the impact of academic service quality on student loyalty through student satisfaction, its results should be viewed in the context of the existing limitations. University management, especially at the Aerospace Technology College, is expected to continue improving the quality of academic services to maintain student loyalty amidst the growing competition in the higher education sector.

### Author Contributions

The authors take complete responsibility for the following: 1) Arif Fakhruudin: contributed to the study by overseeing the conception and design, collecting data, analysing and interpreting the results, and preparing the manuscript. 2) Dr. Nuryakin, S.E., M.M., Dr. Indah Fatmawati, S.E., M.Si. and Prof. M. Suyanto M.M. Responsible for the conception, analysis, and interpretation of results, as well as editing and final proofing.

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