



## Study and analysis of learning and infrastructure on Student loyalty through student satisfaction

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### ABSTRACT

*Quality education is really needed as an effort to prepare quality human resources, master science and technology and also have the skills needed for human survival. The aims of this research are, among other things, to describe learning, infrastructure, student satisfaction and student loyalty, analyze the influence of learning and infrastructure on student satisfaction, analyze learning and infrastructure on student loyalty, analyze the influence of student satisfaction on student loyalty, and analyze the influence of learning and infrastructure on student loyalty through student satisfaction at the Faculty of Economics, University of Nusa Nipa Maumere. The population in this study was students from the 2019/2020 class at the Faculty of Economics, Nusa Nipa University, Maumere, who were registered until the 2022 academic year, a total of 391 students. The sampling technique uses simple random sampling. The number of sample members (n) determined by the Slovin formula is 80 people. The research results show that learning and infrastructure are able to create student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. In addition, learning and infrastructure facilities can create student loyalty at the Faculty of Economics, University of Nusa Nipa Maumere. Student satisfaction significantly influences student loyalty at the Faculty of Economics, University of Nusa Nipa Maumere. Learning and infrastructure can create student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere, through student satisfaction. This means that the better quality of learning and infrastructure will trigger student satisfaction, ultimately increasing student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere.*

**Keywords:** Learning, Quality education, Student Loyalty, Satisfaction.

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### 1. INTRODUCTION

To prepare high-quality human resources, master science and technology, and have the skills needed for human survival, quality education is necessary. Student loyalty is the right strategy to face increasing competition between universities (Wardati, 2015). According to Thomas (2011:183), one of the main goals of higher education institutions is student loyalty; this is because customer loyalty has strategic value for the company. Loyalty is crucial to success, both short-term and long-term. Service quality and customer satisfaction are factors that influence loyalty (Tjiptono & Diana, 2015). All business sectors, including education, always try to satisfy their customers. Universities must be able to provide maximum satisfaction to their students if they want to progress (Suhaylide, 2012). In most cases, satisfaction is a person's satisfaction or dissatisfaction resulting from comparing the performance (or results) of a product with their expectations. Customers are dissatisfied and disappointed if the performance does not meet expectations. If the performance of the product meets expectations, the customer is satisfied. If the performance of the product exceeds expectations, the customer is satisfied and happy (Kotler & Keller, 2008).

Students will feel satisfied if their performance exceeds expectations, and conversely, if performance does not meet expectations, students will feel disappointed. According to Winahyuningsih and Edris, the success of the higher education process depends on the compatibility between consumer desires or their perceptions (voice of the customer) and the wishes of the higher education management organization (voice of the company). According to Mulyasa (2002: 101), learning can be seen in terms of both process and results. When it comes to the learning process, it is said to be successful and of high quality if all or (75%) of students are actively involved in the learning process and showing high learning enthusiasm, great enthusiasm for learning, and high self-confidence. Meanwhile, regarding the results, the learning process is said to be successful if there is a positive change in behavior in all students or at least the majority (75%). Based on the description above, the objectives of this research are, among other things, to describe learning, infrastructure, student satisfaction and student loyalty, analyze the influence of learning and infrastructure on student satisfaction, analyze learning and infrastructure on student loyalty, analyze the influence of student satisfaction on student loyalty, and analyzing the influence of learning and infrastructure on student loyalty through student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. The expected results of this research in the future are for institutions. The output of this research can contribute to thinking at the Faculty of Economics, Nusa Nipa University, Maumere, to improve the quality of teaching and increase the availability of appropriate infrastructure. For educational

institutions, the results of this research can be used as a reference and additional books in developing and improving learning at the Postgraduate Management Masters Study Program at Merdeka University, Malang. The results of this study should be used as additional knowledge for other researchers, both theory and practice related to Marketing Management.

## **2. LITERATURE REVIEW**

Customer loyalty means customer satisfaction in using company facilities and services and remaining a company customer. Loyalty shows that customers are always strong customers and behave well in the organization (Ximenes, 2017). In a competitive environment, a company's ability to increase customer loyalty is crucial to excellence (Aaker, 2009). Loyalty is a way to make customers attached to companies and brands (Faedetal, 2010). Customer loyalty will be critical to success, both short-term and long-term, because customer loyalty has strategic value for a company. In general, customer satisfaction is a person's happiness or disappointment from comparing his impression of a product's performance (or results) and his expectations. Satisfaction is an evaluative term that describes likes and dislikes, Simamora in Winarsih (2007). Customer satisfaction is a person's happiness or disappointment from comparing the product's perceived performance (or results) against their expectations.

If product performance matches expectations, Student satisfaction is a student's positive attitude towards the services of a higher education institution because there is a match between the expectations of the service and what they get (Sopiatin, 2010). Sugito states that student satisfaction is the attainment of students' desires, hopes, and needs (Srinadi, 2008). Sarjono (2007) states that student satisfaction is measured by comparing the level of student satisfaction with employee services, teacher expertise supported by infrastructure, and feelings felt by students after service. According to Bowen in Alma (2009), student satisfaction is influenced by their learning outcomes. "Students who enter a tertiary institution certainly have many hopes, such as job opportunities, career development, satisfaction, pleasure, and pride as students at that tertiary institution." All employees and educational processes, as the core of the value chain, must provide student satisfaction in service. (2009) also stated, "In this case, it is always necessary to pay attention and improve the processes that occur in distributing services from producers to consumers. In educational institutions, of course, this concerns its main product, namely the process of teaching and learning (learning) from lecturers to students."

Infrastructure influences student satisfaction, Arikunto, (2017). Adequate infrastructure in education can provide a positive experience for students, increasing their satisfaction with educational institutions. Students will feel more comfortable and assisted in the learning process if they can access adequate facilities to support their learning. Learning also has an influence on student loyalty; Kriswandari (2011) states that student loyalty to a tertiary institution is determined by the learning experience it receives from its lecturers. If lecturers treat students well, they will respect, obey, and show high loyalty to continue participating in their lecture activities. This explains that the quality of learning influences student loyalty. Infrastructure facilities influence loyalty. Dora (2017) states that adequate facilities and infrastructure are an absolute prerequisite that every educational institution must meet to support the learning process experienced by their students. Students need to be supported by adequate infrastructure to feel satisfied and try to find alternative educational institutions. Infrastructure is needed to increase student loyalty because the existence of available and adequate infrastructure gives a sense of satisfaction to students and will cause students to become loyal to the institution. Apart from learning factors and infrastructure, student satisfaction is also thought to influence student loyalty. Ximenes (2017) states that consumer loyalty is a manifestation and continuation of consumer satisfaction in using the institution's infrastructure and services and remaining a consumer of the institution. Satisfied customers will make repeat purchases from only one supplier, so customers will become loyal to that supplier. Evidence that there is a positive relationship between satisfaction and loyalty (loyalty), namely that the higher the level of satisfaction, the higher the level of loyalty, Beatyetal (in Reynold and Arnold, 2000).

## **3. RESEARCH METHODS**

### **3.1 Population and Sampling Technique**

The population in this study were students from class 2019/2020 at the Faculty of Economics, University of Nusa Nipa Maumere, who had re-registered until the 2022 academic year, with a total of 391 students.

### **3.2 Samples**

The sampling technique uses simple random sampling. Simple random sampling is random sampling of members from a population without paying attention to the strata in the population (Sugiyono, 2016, p. 82). The Slovin formula, namely, determines the number of sample members (n):

$$n = \frac{n}{1 + Ne^2}$$

$$n = \frac{391}{1 + 391 \times [(0.01)]^2}$$

n= 79.6

n= 80

Information :

n = number of samples

N = number of population

e = error of sampling, which can still be tolerated at 10%

Thus, 80 students from the Faculty of Economics at Nusa Nipa University in Maumere served as the samples for this study. In this study, path analysis was employed in the analysis. By evaluating the strength of the influence of the contribution aimed at the path coefficient in each path diagram of the link between research variables X1 and X2 towards Y2 through Y1, the path analysis technique is used.

#### 4. RESEARCH RESULTS AND DISCUSSION

The provisions for testing partial hypotheses ( $H_1, H_2, H_3$ ) are seen from the  $t$  statistical significance value, that is, if  $\text{sig } t < 0.05$ , then the effect is significant. Meanwhile, to test the *intervening hypothesis* ( $H_4$ ), it can be seen from the comparison of the *direct effect values* with *the total indirect effect*; that is, if *the direct effect < total indirect effect*, it is proven that student satisfaction is an *intervening variable*.

##### a. Test $H_1$ (Effect of Learning and Infrastructure on Student Satisfaction)

To test the direct influence of learning and infrastructure on student satisfaction and the magnitude of the direct influence using the multiple linear regression method. The complete analysis results are presented in Table 4.1 below.

**Table 4.1 The Influence of Learning and Infrastructure Towards Student Satisfaction**

Variables	Beta	t	Sig.
Learning ( $X_1$ )	0.457	4,494	0,000
Infrastructure ( $X_2$ )	0.342	3,363	0.001
= 0.725 F value = 42.603			
= 0.525 Sig. F = 0.000			
= 0.513			
= Satisfaction ( $Y_1$ )			

Source: Primary data processed (2023)

Based on Table 4.1 above, it can be deduced that learning has a significant impact on student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. The regression coefficient value of the learning variable ( $X_1$ ) is 0.457, the  $t$  value is 4.494, and the sig value is (0.000 0.05). Additionally, it is known that the infrastructure variable ( $X_2$ ) has a regression coefficient value of 0.342, at value of 3.363, and a sig value of (0.001 0.05), indicating that infrastructure facilities at the Faculty of Economics, Nusa Nipa University, Maumere, significantly affect student satisfaction. This indicates that the Faculty of Economics at Nusa Nipa University, Maumere will have a greater improvement in student satisfaction the better the quality of instruction and facilities.  $H_1$  is therefore statistically examined.

From Table 4.1, it is also known that the coefficient of determination ( $R Square$ ) is 0.525. This explains that the contribution of learning and infrastructure in influencing student satisfaction is 52.5%, while 47.5% of student satisfaction variables are influenced by other variables outside of learning and infrastructure. More specifically, Figure 1 below shows the regression equation 1 and the results of the  $H_1$  test'

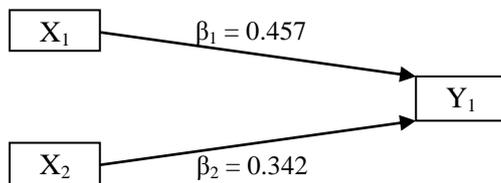


Figure 1 Net work

Regression Equation Model 1 ( $Y_1 = 0.457X_1 + 0.342X_2 + e_1$ )

Source: Primary data processed (2023)

**b. Test H<sub>2</sub> (The Effect of Learning and Infrastructure on Student Loyalty)**

To test the influence of learning and infrastructure on student loyalty and the magnitude of the direct influence using the multiple linear regression method. The full analysis results are presented in Table 4.2 below.

**Table 4.2 The Influence of Learning and Infrastructure Against Student Loyalty**

Variables	Beta	t	Sig.
Learning (X <sub>1</sub> )	0.330	2,340	0.022
Infrastructure (X <sub>2</sub> )	0.105	1,361	0.039
= 0.540 F value = 3.806			
= 0.509 Sig. F = 0.027			
= 0.466			
= Loyalty (Y <sub>2</sub> )			

Source: Primary data processed (2023)

Based on Table 4.2 above, it can be concluded that learning has a significant impact on student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere. The regression coefficient value of the learning variable (X<sub>1</sub>) is 0.330, the t value is 2.340, and the sig value is (0.022 0.05). Additionally, it is known that the infrastructure variable (X<sub>2</sub>) has a regression coefficient value of 0.105, at value of 1.361, and a sig value of (0.039 0.05), indicating that infrastructure facilities at the Faculty of Economics, Nusa Nipa University, Maumere, have a significant impact on student loyalty. This indicates that students at the Faculty of Economics, Nusa Nipa University, Maumere, will be more devoted to their studies of a higher quality of instruction and infrastructure. H<sub>2</sub> is therefore statistically tested.

From Table 4.2, it is also known that the coefficient of determination (R Square) is 0.509. This explains that the contribution of learning and infrastructure in influencing student loyalty is 50.9%, while 49.1% of student loyalty variables are influenced by other variables outside of learning and infrastructure.

More clearly, Figure 14 below shows the regression equation 2 and the results of the H<sub>2</sub> test.

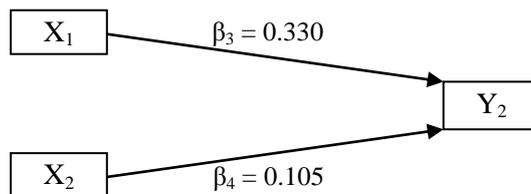


Figure 2 Net work Diagram

Regression Equation Model 2 ( $Y_2 = 0.330X_1 + 0.105X_2 + e_2$ )

Source: Primary data processed (2023)

**c. Test H<sub>3</sub> (Effect of Satisfaction on Student Loyalty)**

To test the influence of satisfaction on student loyalty and the magnitude of the direct influence using the multiple linear regression method. The full analysis results are presented in Table 4.3 below.

**Table 4.3 The Effect of Satisfaction on Student Loyalty**

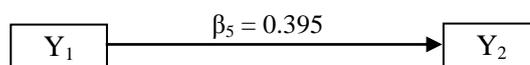
Variables	Beta	t	Sig.
Satisfaction (Y <sub>1</sub> )	0.395	3,799	0,000
= 0.595 F value = 14.435			
= 0.556 Sig. F = 0.000			
= 0.545			
= Loyalty (Y <sub>2</sub> )			

Source: Primary data processed (2023)

Based on Table 4.3 above, it can be concluded that satisfaction has a significant impact on student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere. The regression coefficient value for the satisfaction variable (Y1) is known to be 0.395, the t value is 3.799, and the sig value is (0.000 0.05). This indicates that students in the Faculty of Economics, Nusa Nipa University, Maumere, are more loyal when they are more satisfied. H<sub>3</sub> is therefore statistically examined.

From Table 4.3, it is also known that the coefficient of determination ( *R Square* ) is 0.556. This explains that the contribution of satisfaction in influencing student loyalty is 55.6%, while other variables outside of satisfaction influence 44.4% of the student loyalty variable.

More clearly, Figure 3 below shows the regression equation 3 and the results of testing H<sub>3</sub>.



**Figure 3 Net work diagram**

Regression Equation Model 3 (Y<sub>2</sub> = 0.395Y<sub>1</sub> + e<sub>3</sub>)

Source: Primary data processed (2023)

**d. Test H<sub>4</sub> (Effect of Learning and Infrastructure on Loyalty Through Student Satisfaction)**

Testing H<sub>4</sub> was carried out using path analysis, namely through multiple linear regression analysis stages, and then filtering was carried out based on statistical tests and significance. According to Ghazali (2008:151), this statistical test can be carried out using the *standardized beta coefficient* (standard β). If the β value is significant, then the path coefficient is significant. Path coefficients that are not significant must be discarded. Significance tests can be carried out by comparing the significance of the paths, where if the sig value of the path coefficient is <0.05, then the coefficient is significant. However, if the sig coefficient value is >0.05, it is considered insignificant.

Table 4.4 below shows the results of the analysis of the influence of learning and infrastructure on loyalty through student satisfaction through a comparison of the direct effect , *indirect effect* and *total effect values*

Table 4.4 Path Analysis Results ( Direct , Indirect , and Total Effect )

Variables	Direct effect	Prob.	Indirect effects	Total effect
$X_1 \rightarrow Y_1$	0.457	0.000*	-	-
$X_2 \rightarrow Y_1$	0.342	0.001*	-	-
$Y_1 \rightarrow Y_2$	0.395	0.000*	-	-
$X_1 \rightarrow Y_2$	0.330	0.022*	-	-
$X_2 \rightarrow Y_2$	0.105	0.039*	-	-
$X_1 \rightarrow Y_1 \rightarrow Y_2$	0.232	-	$0.330 \times 0.432$ $= 0.143$	0.375
$X_2 \rightarrow Y_1 \rightarrow Y_2$	0.199	-	$0.105 \times 0.432$ $= 0.045$	0.244
*Significant at $\alpha$ 0.05				

Source: Primary data processing (2023)

Based on the data in Table 4.4 above, it can be seen that the *total effect value* of learning ( $X_1$ ) on loyalty ( $Y_2$ ) through satisfaction ( $Y_1$ ) is 0.375, greater than *the direct effect* (0.330). Likewise, the *total effect value* of infrastructure ( $X_2$ ) on loyalty ( $Y_2$ ) through satisfaction ( $Y_1$ ) is 0.244, which is greater than *the direct effect* (0.105). This explains that the loyalty variable is capable of being an *intervening variable* that intervenes in the influence of learning and infrastructure on student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere. Thus, the  $H_4$  is statistically tested. More clearly, Figure 4 below shows the regression equation 4 and the results of testing  $H_4$ .

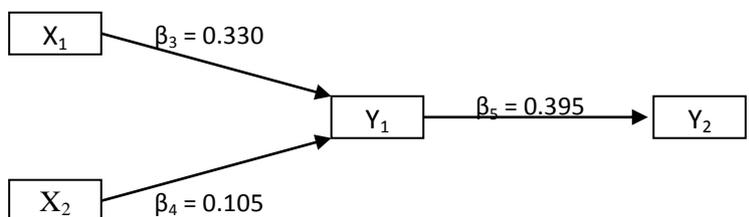


Figure 4 Regression Equation Model 4 ( $Y_2 = 0.330X_1 + 0.105X_2 + 0.395Y_1 + e_3$ )

Source: Primary data processing (2023)

#### 4.1 Discussion

Learning can create student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. Learning is shaped by indicators including knowledge, enthusiasm, learning media, communication, and guidance for learning difficulties. From the results of data analysis, it is known that the leading indicator that forms quality learning is guidance for learning difficulties, which is reflected in lecturers being willing to help students who experience difficulties in academic areas or subjects, and lecturers are also accessible to students to find for guidance and consultation purposes. This means that the better the quality of learning implemented by lecturers at the Faculty of Economics, Nusa Nipa University, Maumere, the more student satisfaction can be increased. Likewise, the worse the quality of learning implemented by lecturers can reduce student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. As stated by Abdul Latif (2021), one of the characteristics of quality learning lies in the teaching and learning process in the classroom which shows that lecturers are able to be good mentors for students who have learning difficulties.

Influential learning can create student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere. The primary indicator that forms quality learning is guidance on learning difficulties, reflected in the attitude of lecturers willing to help students who experience difficulties in academic areas or courses. Lecturers are also accessible for students to find for guidance and consultation purposes. This means that the better the quality of learning implemented by lecturers at the Faculty of Economics, Nusa Nipa University, Maumere, the more student loyalty can be increased. Likewise, the worse the quality of learning implemented by lecturers can reduce the loyalty of students at the Faculty of Economics, Nusa Nipa University, Maumere. As stated by Fitriana (2018). As stated by Tjiptono and Diana (2015), the factor that influences loyalty is customer satisfaction. Thus, every service sector, including the education sector, always tries to provide satisfaction to its customers, namely students. Likewise, according to Ximenes (2017), consumer loyalty is a manifestation and continuation of consumer satisfaction in utilizing the infrastructure and services provided by the institution and remaining a consumer of that institution. At the Faculty of Economics, Nusa Nipa University, Maumere, student satisfaction might operate as a mediator between learning and student loyalty. This means that if the educational activities planned by the lecturers at the Faculty of Economics, Nusa Nipa University, Maumere, are truly of high quality, as demonstrated, among other things, by the lecturers' mastery of the lecture material and their ability to convey it to all students, the lecturers' high enthusiasm when managing the lecture process (friendly attitude and prompt response to requests for clarification), and the lecturers' high level of enthusiasm when managing the lecture process, student satisfaction can increase student loyalty.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusion**

Based on the research results and discussion of the research results as described, the conclusions are put forward that the first is that learning and infrastructure can create student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. This means that the higher the quality of learning and infrastructure, the more significant the increase in student satisfaction at the Faculty of Economics, Nusa Nipa University, Maumere. Second, learning and infrastructure can create student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere. This means that the higher the quality of learning and infrastructure, the greater the loyalty of students at the Faculty of Economics, Nusa Nipa University, Maumere. Third, student satisfaction significantly affects student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere. This means that the higher the satisfaction, the greater the loyalty of students at the Faculty of Economics, Nusa Nipa University, Maumere. Fourth, learning and infrastructure can create student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere, through student satisfaction. This means that better quality of learning and infrastructure will trigger student satisfaction, ultimately increasing student loyalty at the Faculty of Economics, Nusa Nipa University, Maumere.

### **5.2 Suggestions**

Referring to the results and conclusions of this research, suggestions can be outlined as follows: For students, the analysis of student loyalty questionnaires shows that the repeat purchase indicator could be more optimal because there are still students who want to transfer or move to another university. Therefore, it is recommended that students have high loyalty to stay or not move to another university as long as the university management continues to strive to serve students' needs and as long as there are no academic sanctions that require them to transfer to another university. For higher education institutions, the analysis of learning questionnaires shows that communication indicators could be more optimal because there are still students who consider the lecturer's attitude to be less friendly, less open, less cooperative and less friendly in interacting with them. Therefore, it is highly recommended that lecturers show a more friendly, open, cooperative and friendly attitude when interacting or communicating with students to maintain student loyalty and feel appreciated, happy and satisfied at the Faculty of Economics, University of Nusa Nipa Maumere.

The analysis of the infrastructure questionnaire shows that the school furniture indicators are not optimal because some students think that the lighting, air conditioning/fans in the classrooms are not functioning correctly. Therefore, it is highly recommended that university management repair or complete the learning furniture to make students feel happy and satisfied so that they have no intention of moving to another university. The analysis of student satisfaction questionnaires shows that the indicator of affordable costs is not optimal because some students think that they need to receive services and facilities commensurate with the educational costs they pay. Therefore, it is highly recommended that university management improve itself by providing adequate academic services and facilities to increase student satisfaction and loyalty. Future researchers need further development by examining variables that include learning, infrastructure and satisfaction, which can influence student loyalty. It can also analyze other predictors such as emotional ties, trust, convenience, experience, service, university image and promotion, university location, and others.

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