

# The Influence of Academic Performance and Service Quality on Loyalty through Student Satisfaction at the Institut Ciencia Saude Timor-Leste

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# The Influence of Academic Performance and Service Quality on Loyalty through Student Satisfaction at the Institut Ciencia Saude Timor-Leste

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## ABSTRACT

The millennial era has made tough competition in the world of education even more competitive. Many fields of education are feeling the competition today. Therefore there are many promising opportunities for an educational institution to meet the needs of the educational institution itself and for the students themselves to understand all the sources of existing needs.

Therefore, this research was conducted to determine the effect of academic performance and service quality on loyalty through student satisfaction. The object of this research are students who are undergoing or active as students who are educated at the Institut Ciencia Saude Timor-Leste.

The objects of this research are students at the Institut Ciencia Saude Timor-Leste. Data was collected using a questionnaire that was filled out by respondents in semester two to semester five.

The results of data processing show that academic performance has a direct effect on loyalty. Academic performance affects student satisfaction directly. Service Quality affects student satisfaction directly. Student satisfaction directly affects Loyalty. Meanwhile, academic performance affects loyalty through student satisfaction. In addition, Service Quality affects Loyalty through student satisfaction. It can also be concluded that academic performance influences loyalty.

The suggestions put forward in this study are to increase student loyalty, it must increase academic performance and service quality in the education curriculum.

**Keywords:** Academic Performance, Service Quality, Student Satisfaction, Loyalty.

## INTRODUCTION

### Background

The millennial era makes the world of education more competitive. Many fields of education feel the current competition. Therefore, there are many promising opportunities for an educational institution to meet the needs of its own educational institutions and for its own students in understanding all existing sources of needs. Education is a supporting factor that plays an important role in all sectors. Humans need education in their lives. Education is an effort so that humans can develop their potential through the learning process and or other ways known and recognized by society. Therefore, one of the roles of an educational institution

must have adequate performance satisfaction, so that it can provide the services expected by the community.

Higher education as an increase in competitiveness for the quality of human resources. In this case, human resources as a prospective workforce that continues to increase to meet the decreasing demand for labor. Improving the quality of human resources through higher education certainly requires proper academic planning by students in order to achieve goals and achieve satisfactory results. Academic planning should be done well to achieve maximum academic performance.

Academic performance is one of the tools to measure student quality. Student achievement is based on lecture activities carried out by students during their studies. Academic performance is the level of achievement obtained by students through academics. Academic performance can be seen from the daily life of a student in conducting lectures. A student's academic performance can be seen from how he/she participates in learning during class.

The theory of academic performance (ToP) is derived from Elger *et al.*, (2007), and the authors describe 'performance' as the ability to produce valuable outcomes and 'performers' as individuals or groups involved in collaboration while performance level as the location in the academic journey. According to Elger *et al.*, (2007), there are six components of performance level, namely: knowledge level, skill level, identity level, personal factors, and fixed factors and proposed three axioms for effective performance as performer mindset, immersion in enriching environment, and engagement in reflective practice.

Service quality measurement is one of the important measurement tools for companies to understand the needs and desires of consumers by analyzing consumer experience and customer satisfaction with the services provided. Although there is no general agreement on one particular model used as a measure of perceived service quality, there are several effective models offered by researchers over decades of study in this area.

According to Kotler *et al.*, (2003) every student wants maximum satisfaction from every service available in the campus environment. Of course, the maximum satisfaction obtained by students will be able to improve welfare for those concerned. Satisfaction is the level of a person's feelings after comparing the performance he feels compared to his expectations. According to Kotler and Keller *et al.*, (2009) satisfaction is a person's feeling of pleasure or disappointment that arises from comparing the product's perceived performance (or results) against their expectations.

Oliver in Sangadji and Sopiah *et al.*, (2013) states that customer loyalty is a deep-seated customer commitment to re-subscribe or consistently repurchase selected products or services in the future, even though the influence of the situation and marketing efforts have the potential to cause behavioral changes. Customer loyalty in the world of education is closely related to student loyalty. Student loyalty is very necessary for the survival and existence of a university. Students who have high loyalty are assets of the College because they will provide positive recommendations and encourage friends, relatives and other people to use the educational services they have experienced. In addition, it is possible that they will return as customers by continuing their higher education at the college they have attended.

The first previous research that is used as a reference in this study is a study conducted by Banahene *et al.*, (2018) at University College, Kumasi, Ghana. This study found that HEdPERF has a positive and statistically significant relationship with student satisfaction, attitude towards learning and academic achievement. Attitude towards learning also has a positive and statistically significant relationship with student satisfaction and academic achievement. Regarding the mediation effect, attitude towards learning partially mediates between HEdPERF on the one hand, and student satisfaction and academic achievement on the other. This means that academic managers should consider the effects of service quality on student satisfaction and academic performance with and without attitude towards learning in their strategic

management.

The second previous research that is a reference in this study is research conducted by Permana *et al.*, (2020) at Bina Bangsa University. From the results of the study, it can be concluded that increasing Service Quality will affect student satisfaction but not necessarily increase student loyalty directly. Indirectly through student satisfaction, student loyalty can be increased through Service Quality. Improving Information Quality both directly and indirectly can affect student satisfaction and loyalty. Service Quality in higher education is very important in increasing student satisfaction and loyalty.

As the quality of academic performance affects student loyalty, this study was conducted to determine and analyze the effect of academic performance quality and service quality on student loyalty at Institut Ciencia Saude in Timor Leste, which is a health science-focused institution. The evaluation of the institute was selected because it is one of the campuses or institutes that focuses on health sciences in Timor-Leste. In addition to this, data on new student admissions each year at the Institut Ciencia Saude in Timor Leste in the last five years is as follows:

**Table 1. Number of new students admitted to the Institut Ciencia Saude in Timor Leste Year 2018 – 2022**

No	Year	Number of new students	Up/down
1	2018	734	Up
2	2019	637	Down
3	2020	700	Up
4	2021	628	Down
5	2022	595	Down

Source: Data processed

Based on this data, it strengthens the foundation that research with the title of the influence of academic performance and service quality on loyalty through student satisfaction at the Institut Ciencia Saude Timor-Leste is important to do.

### **Problem Statement**

The problem formulations proposed in this study are:

1. Does academic performance affect student satisfaction at Institut Ciencia Saude in Timor Leste?
2. Does Service Quality influence Student Satisfaction at Institut Ciencia Saude in Timor Leste?
3. Does academic performance influence loyalty at the Ciencia Saude Institute in Timor Leste?
4. Does Service Quality influence Loyalty at Ciencia Saude Institute in Timor Leste?
5. Does Student Satisfaction influence Loyalty at the Institut Ciencia Saude in Timor Leste?
6. Does academic performance affect Loyalty through student satisfaction at Institut Ciencia Saude in Timor Leste?
7. Does Service Quality influence Loyalty through Student Satisfaction at Institut Ciencia Saude in Timor Leste?

### **Research Objectives**

In accordance with the background and formulation of the problems raised, the purpose of this study is to analyze the effect:

1. Academic performance on student satisfaction at Institut Ciencia Saude in Timor Leste.
2. Service Quality on Student Satisfaction at Ciencia Saude Institution in Timor Leste.
3. Academic Performance on Loyalty at Institut Ciencia Saude in Timor Leste.
4. Service Quality on Student Loyalty at Ciencia Saude Institution in Timor Leste.
5. Student Satisfaction on Loyalty at Ciencia Saude Institution in Timor Leste.
6. Academic performance on Loyalty through student satisfaction at Ciencia Saude Institution in Timor Leste.
7. Service Quality on Loyalty through Student Satisfaction at Institut Ciencia Saude in Timor Leste.

## Benefits of Research

### Academic Benefit

Make an academic contribution, especially in testing the <sup>4</sup>analysis of the influence of academic performance, Service Quality and Student Satisfaction.

### Practical Benefit

The results of this study are expected to provide benefits for the management of the Institut Ciencia Saude (ICS) Timor-Leste. especially regarding academic performance, Service Quality and Student Satisfaction.

## LITERATURE REVIEW

### Previous Research

The first previous research that is a reference in this study is research conducted by Stephen Banahene, Jerry Jay Kraa1, Philipine Aseye Kasu. *et al.*, 2018 at University College, Kumasi, Ghana. This study found that HEDPERF has a positive and statistically significant relationship with student satisfaction, attitude towards learning and academic achievement. Attitude towards learning also had a positive and statistically significant relationship with student satisfaction and academic achievement. Regarding the mediation effect, attitude towards learning partially mediates between HEDPERF on the one hand, and student satisfaction and academic achievement on the other. This means that academic managers should consider the effects of service quality on student satisfaction and academic achievement with and without attitude towards learning in their strategic management.

The second previous research that is a reference in this study is research conducted by Permana *et al.*, 2020 at Bina Bangsa University. From the results of the study, it can be concluded that increasing Service Quality will affect student satisfaction but not necessarily increase student loyalty directly. Indirectly through student satisfaction, student loyalty can be increased through Service Quality. Improving Service Quality both directly and indirectly can affect student satisfaction and loyalty. Service Quality in higher education is very important in increasing student satisfaction and loyalty.

The third previous research that is a reference in this study is research conducted by Gblonyah *et al.*, 2018 at the University of Cape Coast Ghana. From the results of the study it can be concluded that increasing Service Quality will be able to affect student satisfaction and certainly can increase student loyalty directly. Indirectly through student satisfaction, student loyalty can be increased through Service Quality.

### Theoretical Foundations



## Academic Performance

The theory of academic performance comes from Elger *et al.*, (2007) and the authors describe performance as the ability to produce something of value and performers as individuals or groups involved in collaboration while the level of performance is the results shown during the academic journey. According to Elger *et al.*, (2007) there are five components of performance level, namely:

### 1. Level of knowledge

Knowledge is the result of knowing and occurs after people perceive a certain object.

### 2. Skill level

Skill can refer to the specific action performed or to the nature in which the skill is performed.

### 3. Identity level

Identity is the part of a person's self-concept that comes from their knowledge of membership in a social group along with the value and emotional significance of that membership.

### 4. Personal factors

Personal factors are a person's habit patterns that are influenced by the immediate environment in making choices, then expressed in an action.

### 5. Fixed factors

Fixed factors are factors that do not change as output increases or decreases, and usually include premises such as offices and factories, and capital equipment such as machinery.

This level of academic performance is based on two things, including academic and social integration. In their research Baker and Siryk *et al.*, (1999), state that academic and social integration affects student study performance. Baker and Siryk *et al.*, (1999) in Rienties *et al.*, (2012) divide into five concepts in academic integration including academic, social, personal, and emotional adjustment and attachment.

Sobur *et al.*, (2006), suggest that academic achievement is a change in behavioral skills, or abilities that can increase over time and is not caused by the growth process, but a learning situation. Between academic achievement and learning achievement have the same meaning as stated by Nurkencana *et al.*, (1986) that learning achievement is the result that has been achieved or obtained by children in the form of subject grades. In addition, learning achievement is a result that results in changes in the individual as a result of learning activities.

Setiawan *et al.*, (2006) stated that academic achievement is indicative of an achievement of a level of success regarding a goal, because a learning effort has been carried out by someone optimally. Academic achievement is a change in behavioral skills or abilities that can increase over time and is not caused by the growth process, but because of the learning situation (Sahputra *et al.*, 2009). Utomo *et al.*, 2009, said that academic achievement is the best acquisition in all academic disciplines, be it classroom learning or extra-curricular activities, academic achievement is the fulfillment of all academic goals of a student, achievement also means something that you want to achieve for yourself not what others want or in other words, succeeding in class activities because you are able to overcome various challenges.

According to Bloom in Hipjillah *et al.*, (2015), academic achievement is a process experienced by students to produce changes in the fields of knowledge, understanding, application, analysis power, synthesis and evaluation. According to Hipjillah *et al.* (2015), academic achievement is an assessment of educational results in the form of changes in the fields of knowledge, understanding, application, analytical power, synthesis and evaluation, where the results of the assessment are given based on the results of tests, evaluations or exams from each course, these results are interpreted objectively and applied in the form of numbers and sentences according to what is achieved by each student in a certain period.

The measurement of academic performance according to Daqane *et al.*, (2016) consists of 10 measurements which are then used in this study, namely:

1. University has qualified lecturers.
2. Students get the materials needed.
3. The university provides efficient services.
4. Student mid-semester exams are well organized.
5. Students have good feedback in terms of class discussion.
6. Students have class assignments or homework for capacity building.
7. Lecturer has good communication skills.
8. The learning environment promotes academic achievement.
9. Student-instructor interaction contributes to student academic achievement.
10. Lecturer performance is good

### Service Quality

Kotler and Keller in Hidayati *et al.*, (2020), say service quality is the totality of service characteristics to satisfy consumer needs and desires. Meanwhile, according to Gruber *et al.*, (2010) service quality is defined as the perceived quality resulting from the difference between customer service expectations and perceptions of actual service performance. Based on these definitions of service quality, it can be concluded that service quality is any form of activity carried out by the company to meet consumer expectations. The basic concept of a service (service) and the quality of a product can be defined as fulfillment that can exceed what customers want or expect Hidayati *et al.*, (2020).

Zeithaml *et al.*, (2009) state “service quality, the customer’s perception of the service component of a product, is also a critical determinant of customer satisfaction” this means, service quality is the consumer’s perception of a set of services for a product unit, and is also an important determinant in obtaining customer satisfaction. Based on these various definitions, it can be understood that service quality is by comparing consumers’ perceptions of the services they actually get or receive with the services they actually want for the service attributes of a company.

According to Zeithaml *et al.*, (1990) there are 3 characteristics of service quality, namely intangible (not palpable or stated), heterogeneous (diverse) and indivisible (cannot be divided) or inseparability (cannot be separated).

#### 1. Intangible

Service quality is intangible, which is not palpable because service quality is a result not a product. According to Schneider & White *et al.*, (2004) service quality cannot be seen, touched, or stored, in other words service quality has no physical manifestation.

## 2. Heterogeneous

According to Schneider & White *et al.*, 2004, heterogeneity can cause services to be more difficult to measure and in carrying out quality control to ensure service quality has a uniform standard.

## 3. Indivisible atau Inseparability

Service quality is indivisible or inseparability because the production and consumption processes occur simultaneously. Schneider & White *et al.*, (2004) state that the most important feature of the inseparability of services is that companies must strive to ensure that when services are being produced producers must know the maximum number of consumers who will use these services.

Parasuraman *et al.*, (1988) compiled the main dimensions that are the main factors determining service quality as follows:

### 1. Reliability

Namely the ability to realize the promised service reliably and accurately.

### 2. Responsiveness

Namely the willingness to help consumers by providing fast and precise service.

### 3. Assurance

Which includes knowledge, ability, and politeness or kindness of personal as well as the ability to gain trust and desire.

### 4. Empathy

Which includes maintaining and providing a level of individual or personal attention to consumer needs.

### 5. Tangible

That includes physical facilities, equipment or supplies, prices, and personal appearance and written materials.

Kwadzo *et al.*, (2019), stated Service quality in higher education is a complex and multifaceted concept and a single correct definition of quality is still lacking. Consequently, consensus on how best to define and measure service quality (Clewes, *et al.*, 2003) does not yet exist. Each stakeholder in higher education (eg. students, government, professional bodies) has its own view of quality due to specific needs. Students receive and use the training offered by universities, which makes them priority customers of educational activities (Marzo-Navarro *et al.*, 2005).

Authors such as Sanders and Sander *et al.*, (2000), Gremler and McCollough *et al.*, (2002) and Hills *et al.*, (1995) also consider students as the primary consumers of higher education services. However, this view does not mean that other perspectives may not be valid and important as well. In this regard, Guolla *et al.*, (1999) rightly point out that students can also act as clients, producers and products. Based on findings in the service quality literature, O'Neill and Palmer *et al.*, (2004) define service quality in higher education as "the difference between what a student expects to receive and his or her perception of actual delivery".

The measurement of Service Quality in higher education according to Kwadzo *et al.*, (2019) consists of five



indicators, each indicator has 5-7 measurements, so a total of 30 measurements were then used in this study, namely:

### **Tangible**

1. University provides adequate physical facilities/infrastructure in halls and lecture halls.
2. The condition of the lecture/reading room (e.g. seating space, lighting, air conditioning, fan, microphone) is adequate and feasible for learning is effective for learning.
3. The university provides quality accommodation for all students.
4. The university has adequate IT facilities for learning (e.g. computers and internet connectivity and access).
5. University/department/hall libraries are equipped with the latest reference books.
6. Teaching resources and physical facilities are visually appealing to all students.
7. The physical appearance of university lecturers and administration is good and neat.

### **Responsiveness**

1. Ease of contact/access to lecturers and administrative staff to assist you.
2. The university provides fast and prompt services to all students (e.g. library, hospital, IT).
3. Lecturers and administrative staff are helpful and courteous to all students.
4. Lecturers and administrative staff are willing to provide prompt service.
5. Lecturers and administrative staff are willing and ready to help.
6. Lecturers and administrative staff are willing to provide prompt service and are ready to respond to requests at any time.

### **Reliability**

1. The University has clear values and goals and rules and regulations that are fairly and strictly enforced.
2. The university clearly sets out policies/guidelines in the student handbook.
3. Lecturers and administrative staff are trustworthy.
4. The university transportation department provides reliable and accurate transportation services for all students.
5. The university/department keeps accurate student data
6. Registration is timely and error-free

### **Empathy**

1. Lecturers and administrative staff understand the needs of students and they prioritize students' interests
2. Lecturers and administrative staff provide personal attention, emotions, courtesy to all students
3. Lecturers and administrative staff are always available to provide guidance and advice services to all students.
4. Lecturers and administrative staff always communicate well with students
5. Access to computer facilities, library/reading rooms that are accommodating for student convenience.

### **Assurance**

1. Lecturers and administrative staff are friendly and polite in dealing with student issues.
2. University lecturers are fair in assessing or grading students.
3. The university provides adequate support mechanisms for students in need.

4. Staff within university departments keep promises to all students.
5. There are high security measures in place at the university to protect students from harm.
6. Lecturers and Administrative staff have high academic credentials.

### Student Satisfaction

Student satisfaction is “the extent to which an institution’s service performance meets student calculations” (Weirs-Jenssen *et al.*, 2002; Salami *et al.*, 2005; Roberts-Lombard *et al.*, 2009). Student satisfaction is influenced by students’ expectations and their perceptions of services and the quality of services provided (Hu *et al.*, 2009; Babaei, 2015). The level of student satisfaction is an indicator of the extent to which faculties and universities meet their expectations and goals (Appuhamilage and Torii *et al.*, 2019). The level of satisfaction differs according to the type of students attending (Wilkins and Balakrishnan *et al.*, 2013) and the perceived performance of the educational services provided by the institution (Mukhtar *et al.*, 2015). Certain critical factors such as quality of facilities, quality of degree programs and image affect student satisfaction in universities (Weerasinghe and Fernando *et al.*, 2018).

According to Songsathaphorn *et al.*, 2014) Student satisfaction can be seen as customer satisfaction. Student satisfaction does not only depend on teaching considerations alone, but there must be an in-depth analysis to find out the overall influential factors that contribute to student satisfaction.

Sopiatin *et al.*, 2010, Student satisfaction is a positive attitude of students towards the services of higher education institutions because there is a match between the expectations of the service compared to the reality they receive.

The measurement of Student Satisfaction according to Kwadzo *et al.*, (2019) consists of six measurements which were then used in this study, namely:

1. Satisfied with the decision to study at this University.
2. Satisfied with the decision to enroll at this University.
3. Made the right decision when deciding to enroll at this University.
4. Satisfied with the academic aspects of the services provided by the university.
5. Satisfied with the relationship with the program and lecturers within the university/department.
6. Satisfied with the relationship with the program and lecturers within the university/major.

### Loyalty

Student loyalty is a combination of students’ willingness to give positive word-of-mouth to friends, employers, and organizations whenever the opportunity arises. However, student loyalty also contains attitudinal and behavioral components (Hennig-Thurau *et al.*, 2001; Marzo-Navaro *et al.*, 2005). Student loyalty positively influences quality teaching through active participation and committed behavior (Rodie & Klenie *et al.*, 2000).

According to Mendez *et al.*, 2009, student loyalty “is a critical measure of success for higher education institutions that aim to retain students until graduation and then attract them back”. Loyal students can also increase the number of new students by promoting the university through word-of-mouth behavior (Hennig-Thurau *et al.*, 2001).

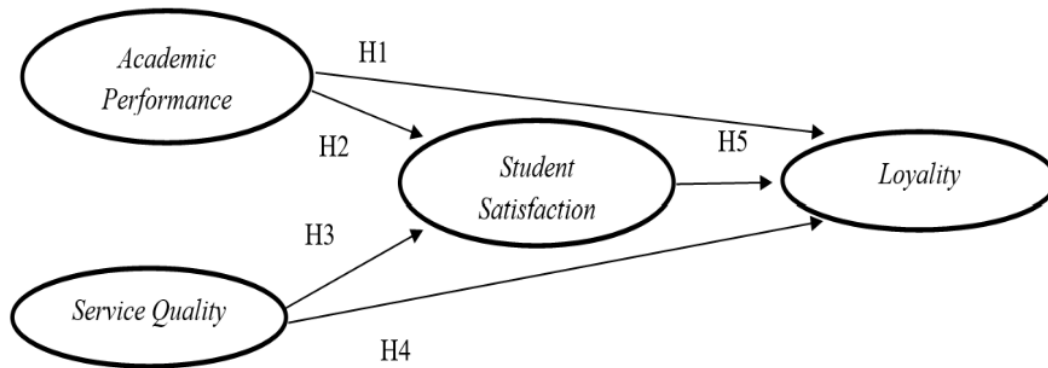
The description of this definition can be concluded that loyalty is a series of firmly held commitments to repurchase or support preferred products or services in the future even though there are influences on situations and conditions from the marketing environment that have the potential to cause customers to

move to other products or services. Loyal consumers under any conditions and anywhere have a firm commitment to keep repurchasing and reusing the company's goods and services.

Loyalty measurement according to Kwadzo *et al.*, (2019) consists of 7 measurements which are then used in this study, namely:

1. Recommend the university to friends and relatives.
2. Giving consideration if friends and relatives have the opportunity to continue their education.
3. If in need of academic services, will look for this university.
4. Choosing the program offered, if going to pursue higher education again.
5. Communicate positively to friends and relatives.
6. If having the option to do so again, would still enroll at this University.
7. Recommend the program to friends and relatives.

### Research Models



**Figure 1. Research Model**

### Hypothesis

Based on previous research and the theoretical basis, the hypotheses used in this study are:

1. Academic performance affects student satisfaction at the Institut Ciencia Saude Timor-Leste.
2. Service Quality affects Student Satisfaction at Institut Ciencia Saude Timor-Leste.
3. Academic performance affects Loyalty at the Institut Ciencia Saude Timor-Leste.
4. Service Quality affects Loyalty at the Institut Ciencia Saude Timor-Leste.
5. Student Satisfaction affects Loyalty at the Institut Ciencia Saude Timor-Leste.
6. Academic performance affects Loyalty through student satisfaction at the Institut Ciencia Saude in Timor Leste.
7. Does Service Quality affect Loyalty through Student Satisfaction at Institut Ciencia Saude in Timor Leste.

### RESEARCH METHODS

The population in this study were students who were studying at the Institut Ciencia Saude Timor-Leste. The sample in this study were some of the students of Institut Ciencia Saude Timor-Leste. So, the sample in this

study is part of the population that has the following characteristics:

1. Minimum age 17 years (with a minimum age criterion of 17 years, at that age it is considered old enough to make purchasing choices that are considered comfortable and satisfying)
2. Domiciled in Dili
3. Currently studying in semester two to semester five
4. Know that the university provides accommodation for those who need it at a certain rate
5. During the course of study, enjoyed all the university's learning facilities (e.g. library).

According to Hair *et al.*, (1995) in Ghozali and Fuad *et al.*, (2005) the sample size is the number of measurements times 5 – 10. The number of measurements in this study was 53, if the number of samples uses 5 times the number of indicators, then the calculation is  $5 \times 53 = 265$  respondents. So the number of respondents needed in this study to distribute questionnaires was 265 respondents.

The technique of determining the number of samples in this study using proportional random sampling Sugiono, *et al.*, 2012. The proportional sample size is as follows.

**Table 2: Proportional sample size**

Number	Semester	Amount	Proportional Sample Size
1	2	180	67
2	3	174	65
3	4	175	66
4	5	180	67
<b>Amount</b>		<b>709</b>	<b>265</b>

Source: Data processed

Based on the data presentation in Table 2. It is known that most of the respondents in this study consisted of semester 2 with 67 respondents, semester 3 with 65 respondents, semester 4 with 66 respondents and semester 5 with 67 respondents, so that there were respondents in this study with a final total of 265 respondents.

The data analysis technique used in this research is the Structural Equation Model (SEM) through the LISREL program. In SEM, measurement model, overall model, and structural model are tested. In addition, this study also used path analysis to explain the relationship between existing variables. By using this SEM method, a comprehensive model will be displayed and can explain the relationship between one construct and another.

## RESEARCH RESULTS

### Validity test

**Table 3: Validity Test Results**

Variable	Indicator	t-Value	Cut-off	Note
Academic Performance	AP1	0,9	> 0,7	Valid
	AP2	0,9	> 0,7	Valid
	AP3	0,9	> 0,7	Valid



	AP2	0,9	> 0,7	Valid
	AP3	0,9	> 0,7	Valid
	AP4	0,9	> 0,7	Valid
	AP5	0,9	> 0,7	Valid
	AP6	0,9	> 0,7	Valid
	AP7	0,9	> 0,7	Valid
	AP8	0,9	> 0,7	Valid
	AP9	0,9	> 0,7	Valid
	AP10	0,9	> 0,7	Valid
	AP10	0,9	> 0,7	Valid
Service Quality	SQ1	0,9	> 0,7	Valid
	SQ2	0,9	> 0,7	Valid
	SQ3	0,9	> 0,7	Valid
	SQ4	0,9	> 0,7	Valid
	SQ5	0,9	> 0,7	Valid
Student Satisfaction	S1	0,9	> 0,7	Valid
	S2	0,9	> 0,7	Valid
	S3	0,9	> 0,7	Valid
	S4	0,9	> 0,7	Valid
	S5	0,9	> 0,7	Valid
	S6	0,9	> 0,7	Valid
Loyalty	L1	0,9	> 0,7	Valid
	L2	0,9	> 0,7	Valid
	L3	0,9	> 0,7	Valid
	L4	0,9	> 0,7	Valid
	L5	0,9	> 0,7	Valid
	L6	0,9	> 0,7	Valid
	L7	0,9	> 0,7	Valid

Source: Data processed

Based on the data in Table 3, it shows that the measurements have been proven valid to be used to measure latent variables because none of the measurements has a t-value in factor loading that is smaller than the cut-off, namely 0.7.

### Reliability Test

The following are the results of reliability testing for each variable carried out using Construct Reliability calculations:

**Table 4: Reliability Test Results**

Variable	CR	Cut off	Note
Academic Performance	0,9	≥ 0,6	Reliable
Service Quality	0,8	≥ 0,6	Reliable
Student Satisfaction	0,9	≥ 0,6	Reliable
Loyalty	0,8	≥ 0,6	Reliable

Source: Data processed

Based on the data in Table 4, it shows that the measurement is proven to be reliable because all variables have a CR value greater than the cut-off value, namely  $\geq 0.6$ .

### Hypothesis Testing

Hypothesis testing is needed to determine the significance of the calculation results with SEM using the LISREL program. Criteria for testing significance with a cut-off of 1.96. If lambda has a t-value  $> 1.96$  then the lambda value is significant. The results of hypothesis testing are as follows:

**Table 5: Hypothesis Testing**

Hypothesis	Variable Relationships	Loading Factor	t – value	Cut Off	Description
H <sub>1</sub>	Academic Performance → Loyalty	0,33	2,34	$\geq 1,96$	Significant
H <sub>2</sub>	Academic Performance → Student Satisfaction	0,24	4,14	$\geq 1,96$	Significant
H <sub>3</sub>	Service Quality → Student Satisfaction	0,13	4,35	$\geq 1,96$	Significant
H <sub>4</sub>	Service Quality → Loyalty	0,20	2,94	$\geq 1,96$	Significant
H <sub>5</sub>	Student Satisfaction → Loyalty	0,29	3,97	$\geq 1,96$	Significant
H <sub>6</sub>	Academic Performance → Student Satisfaction → Loyalty	0,14	2,92	$\geq 1,96$	Significant
H <sub>7</sub>	Service Quality → Student Satisfaction → Loyalty	0,29	3,02	$\geq 1,96$	Significant

5  
Source: Data processed

Based on Table 5 the results of hypothesis testing can be explained as follows:

1. Academic Performance is significant to Loyalty. This influence is evidenced by the loading factor value of 0.33 with a t-value of 2.34 (t-value  $> 1.96$ ).
2. Academic Performance is significant to Student Satisfaction. The effect is evidenced by the loading factor value of 0.24 with a t-value of 4.14 (t-value  $> 1.96$ ).
3. Service Quality is significant to Student Satisfaction. This effect is evidenced by the loading factor value of 0.13 with a t-value of 4.35 (t-value  $> 1.96$ ).
4. Service Quality is significant to Loyalty. This influence is evidenced by the loading factor value of 0.20 with a t-value of 2.94 (t-value  $> 1.96$ ).
5. Student Satisfaction is significant to Loyalty. This influence is evidenced by the loading factor value of 0.29 with a t-value of 3.97 (t-value  $> 1.96$ ).
6. Academic Performance is significant to Loyalty through Student Satisfaction. This influence can be proven by a loading factor of 0.14 and a t-value of 2.92 (t-value  $> 1.96$ ).

Service Quality is significant to Loyalty through Student Satisfaction. This influence can be proven by a loading factor of 0.29 and a t-value of 3.02 (t-value  $> 1.96$ ).

## DISCUSSION

### Academic Performance Significant on Loyalty

Reviewing the results of the structural equation, it can be stated that the effect of Academic Performance on Loyalty is positive. In other words, if the Academic Performance of the individual is higher, the Loyalty felt by the individual will be higher. Conversely, if the Academic Performance of the individual is lower, the Loyalty felt by the individual will be lower. The results of hypothesis testing of the effect of Academic Performance on Loyalty at Institut Ciencia Saude prove that the effect of Academic Performance on Loyalty is significant. This means that the effect of Academic Performance on Loyalty is meaningful. Therefore, the results of empirical data testing prove that the first hypothesis in this study, namely the effect of Academic Performance on Loyalty at Institut Ciencia Saude, has a significant effect.

The results of this study support the research conducted by Stephen Banahene, Jerry Jay Kraal, Philipine Aseye Kasu. *et al.*, 2018 at University College, Kumasi, Ghana. This study found that HEdPERF has a positive and statistically significant relationship with student satisfaction, attitude towards learning and academic achievement. So that satisfaction can increase student loyalty to academics.

### Academic Performance Significant on Student Satisfaction

Reviewing the results of the structural equation, it can be stated that the effect of Academic Performance on Student Satisfaction is positive. In other words, if the Academic Performance of the individual is higher, the Student Satisfaction felt by the individual will be higher. Conversely, if the Academic Performance of the individual is lower, the Student Satisfaction felt by the individual will be lower. The results of hypothesis testing on the effect of Academic Performance on Student Satisfaction at Institut Ciencia Saude prove that the effect of Academic Performance on Student Satisfaction is significant. This means that the effect of Academic Performance on Student Satisfaction is meaningful. Therefore, the results of empirical data testing prove that the second hypothesis in this study, namely the effect of Academic Performance on Student Satisfaction at Institut Ciencia Saude has a significant effect.

The results of this study support the research conducted by Jerry Jay Kraal, and Philipine Aseye Kasu. *et al.*, 2018 at University College, Kumasi, Ghana. This study found that HEdPERF has a positive and statistically significant relationship with student satisfaction, attitude towards learning and academic achievement. Attitude towards learning also has a positive and statistically significant relationship with student satisfaction and academic achievement.

### Service Quality Significant on Student Satisfaction

Reviewing the results of the structural equation, it can be stated that the effect of Service Quality on Student Satisfaction is positive. In other words, if the Service Quality of the individual is higher, the Student Satisfaction felt by the individual will be higher. Conversely, if the Service Quality of the individual is lower, the Student Satisfaction felt by the individual will be lower. The results of hypothesis testing on the effect of Service Quality on Student Satisfaction at Institut Ciencia Saude prove that the effect of Service Quality on Student Satisfaction is significant. This means that the effect of Service Quality on Student Satisfaction is meaningful. Therefore, the results of empirical data testing prove that the third hypothesis in this study, namely the effect of Service Quality on Student Satisfaction at Institut Ciencia Saude, has a significant effect.

The results of this study support research conducted by Gblonyah *et al.*, 2018 at the University of Cape Coast Ghana. Service Quality will be able to affect student satisfaction. This shows that Service Quality is

very important for academics or universities to improve service quality on student satisfaction.

### Service Quality Significant on Loyalty

Reviewing the results of the structural equation, it can be stated that the effect of Service Quality on Loyalty is positive. In other words, if the Service Quality of the individual is higher, the Loyalty felt by the individual will be higher. Conversely, if the Service Quality of the individual is lower, the Loyalty felt by the individual will be lower. The results of the hypothesis testing of the effect of Service Quality on Loyalty at Institut Ciencia Saude prove that the effect of Service Quality on Loyalty is significant. This means that the effect of Service Quality on Loyalty is meaningful. Therefore, the results of empirical data testing prove that the fourth hypothesis in this study, namely the effect of Service Quality on Loyalty at Institut Ciencia Saude, has a significant effect.

The results of this study support the research conducted by Permana *et al.*, 2020 at Bina Bangsa University. Improving Service Quality both directly and indirectly can affect student satisfaction and loyalty. So that to increase student loyalty, service quality measures are needed and can continue to be emphasized.

### Student Satisfaction Significant on Loyalty

Reviewing the results of the structural equation, it can be stated that the effect of Student Satisfaction on Loyalty is positive. In other words, if the Academic Performance of the individual is higher, the Loyalty felt by the individual will be higher. Conversely, if the Student Satisfaction of the individual is lower, the Loyalty felt by the individual will be lower. The results of hypothesis testing of the effect of Student Satisfaction on Loyalty at Institut Ciencia Saude prove that the effect of Student Satisfaction on Loyalty is significant. This means that the effect of Student Satisfaction on Loyalty is meaningful. Therefore, the results of empirical data testing prove that the fifth hypothesis in this study, namely the effect of Student Satisfaction on Loyalty at Institut Ciencia Saude, has a significant effect.

The results of this study support research conducted by Gblonyah *et al.*, 2018 at the University of Cape Coast Ghana which states that the higher student satisfaction with a higher education institution will affect loyalty to the university itself.

### Academic Performance Significant on Loyalty Through Student Satisfaction

Reviewing the results of the structural equation, it can be stated that the effect of Academic Performance on Loyalty through Student Satisfaction is positive. In other words, if the Academic Performance of the individual is higher, the Loyalty through Student Satisfaction will be felt by the individual will be higher. Conversely, if the Academic Performance of the individual is lower, the Loyalty through Student Satisfaction will be felt by the individual will be lower. The results of hypothesis testing of the effect of Academic Performance on Loyalty through Student Satisfaction at Institut Ciencia Saude prove that the effect of Academic Performance on Loyalty through Student Satisfaction is significant. This means that the effect of Academic Performance on Loyalty through Student Satisfaction is meaningful. Therefore, the results of empirical data testing prove that the sixth hypothesis in this study, namely the effect of Academic Performance on Loyalty through Student Satisfaction at Institut Ciencia Saude has a significant effect.

The results of this study support the research conducted by Jerry Jay Kraa1, and Philipine Aseye Kasu. *et al.*, 2018 at University College, Kumasi, Ghana. This study found that HEdPERF has a positive and statistically significant relationship with student satisfaction, attitude towards learning and academic achievement. So that increasing Academic Performance to get loyalty must give or increase student satisfaction, so that the level of loyalty occurs.



### Service Quality is significant on Loyalty through Student Satisfaction

Reviewing the results of the structural equation, it can be stated that the effect of Service Quality on Loyalty through Student Satisfaction is positive. In other words, if the Service Quality of the individual is higher, the Loyalty through Student Satisfaction will be felt by the individual will be higher. Conversely, if the Service Quality of the individual is lower, the Loyalty through Student Satisfaction will be felt by the individual will be lower. The results of hypothesis testing of the effect of Service Quality on Loyalty through Student Satisfaction at Institut Ciencia Saude prove that the effect of Service Quality on Loyalty through Student Satisfaction is significant. This means that the effect of Service Quality on Loyalty through Student Satisfaction is meaningful. Therefore, the results of empirical data testing prove that the seventh hypothesis in this study, namely the effect of Service Quality on Loyalty through Student Satisfaction at Institut Ciencia Saude has a significant effect.

The results of this study support the research conducted by Permana *et al.*, 2020 at Bina Bangsa University. The results showed that service quality had a significant effect on each Student Satisfaction and Loyalty. Improving service quality in higher education is very necessary considering that students tend to choose universities that provide high service quality and student satisfaction. Loy students are not caused by getting good service quality.

## CONCLUSIONS AND SUGGESTIONS

### Conclusions

1. The first hypothesis proposed in the study, namely Academic Performance affects Loyalty at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Academic Performance, the higher the Loyalty at Institut Ciencia Saude Timor-Leste.
2. The second hypothesis proposed in the study, namely Academic Performance affects Student Satisfaction at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Academic Performance, the higher the Student Satisfaction at Institut Ciencia Saude Timor-Leste.
3. The third hypothesis proposed in the study, namely Service Quality affects Student Satisfaction at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Service Quality, the higher the Student Satisfaction at Institut Ciencia Saude Timor-Leste.
4. The fourth hypothesis proposed in the study, namely Service Quality affects Loyalty at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Service Quality, the higher the Loyalty at Institut Ciencia Saude Timor-Leste.
5. The fifth hypothesis proposed in the study, namely Student Satisfaction affects Loyalty at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Student Satisfaction, the higher the Loyalty at Institut Ciencia Saude Timor-Leste.
6. The sixth hypothesis proposed in the study, namely Academic Performance affects Loyalty through Student Satisfaction at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Academic Performance, the higher the Loyalty through Student Satisfaction at Institut Ciencia Saude Timor-Leste.
7. The seventh hypothesis proposed in the study, namely Service Quality affects Loyalty through Student Satisfaction at Institut Ciencia Saude Timor-Leste, is accepted. This result shows that the higher the Service Quality, the higher the Loyalty through Student Satisfaction at Institut Ciencia Saude Timor-Leste.

### Suggestion

Based on the research results and conclusions, the suggestions that can be given are as follows:

## Theoretical Suggestions

This research can be further developed as a reference for conducting similar research on the effect of Academic Performance and Service Quality on loyalty through Student Satisfaction by adding other variables that can be used for further research. Therefore, researchers hope that further research can use variables or indications that need to be added in further research, such as: reputation, image, commitment, Attitude towards learning and other variables or indications. Because in this study the variables used in the study, namely academic performance and service quality, are still not certain to determine the level of student satisfaction and loyalty.

## Practical Suggestions

Based on the research results and conclusions that have been obtained, there are several practical suggestions arranged as follows:

### Suggestions for managing academic performance

Based on the research results, it can be concluded that Academic Performance affects student satisfaction and loyalty. Therefore, Institut Ciencia Saude Timor-Leste must improve academic performance in the education curriculum. Therefore, actions or improvements made to increase satisfaction and loyalty such as: increasing the quality or knowledge of lecturers, improving the education curriculum, facilities and aspects of more efficient services.

### Suggestions for managing service quality

Based on the results of the study, it can be concluded that service quality affects student satisfaction and loyalty. Therefore, the quality of services performed or offered by Institut Ciencia Saude Timor-Leste to students must be in accordance with the world of education curriculum, so as to increase student satisfaction so that students gain loyalty to the university during their higher education. Because service quality is one of the most important roles in life. When someone feels that the services offered are good and in accordance with one's expectations, it will increase satisfaction. Therefore, to improve good service quality, it is necessary to improve adequate facilities/infrastructure, quality of lecturers, quality of employees, quality of assurance and increase innovation in the education curriculum.

### Suggestions for managing student satisfaction

From the results of this study, it can be concluded that student satisfaction is greatly affected in the education curriculum. Therefore, to increase student satisfaction, the university must improve academic performance and the quality of services offered or provided within the university environment while students are undergoing their higher education at the university. Because satisfaction is a very important level of satisfaction. Therefore, the actions that must be taken by an educational institution to increase satisfaction, namely: improve service quality, commitment and responsibility.

### Suggestion for loyalty management

From the results of this study it can be concluded that loyalty is strongly influenced by academic achievement and service quality. To increase or get good loyalty, the university must provide an adequate education curriculum, from the aspect of academic achievement and the quality of services provided while the students are undergoing their education at the university. To increase loyalty, an educational institution must improve performance, achievement, commitment, facilities and quality of services provided.

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