

# THE IMPACT OF SERVICES QUALITY ON PERFORMANCE OF UNIVERSITIES IN VIETNAM: STUDENTS' PERCEPTION

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## Abstract

*The objective of the article is to evaluate the impact of training service quality on the performance of universities in Vietnam, from the perspective of students. The study was conducted on 865 valid questionnaires. The data is analyzed using Smart PLS 3.3 software, the results show that both internal and external service quality have a positive impact on the performance of universities in Vietnam. For public universities and affiliated to large cities, the quality of service affects performance more than that of private schools and small cities. The study confirms the statistically significant regulatory role of university type and university location in Vietnam.*

**Keywords:** Quality of training service, data science, university, performance, Vietnam.

## Introduction

Today, in parallel with other service industries, the concept of training service quality has been recognized as a part of the service industry. The emergence of more and more universities in Vietnam promotes the rapid development of educational services to serve the needs of society. The ongoing changes in educational services have received increasing attention over the past two decades. Researchers have pointed out that students are the ones who pay the costs of education, so educational institutions need to

flexibly switch from putting products to sell to reaching customers [1]. At the same time, in a competitive field, higher education institutions need to constantly improve the quality of their services to create a competitive advantage in the market [2-6].

For today's education and training institutions, the service experience of students and staff is complex and different from the consumer experience in any service industry, which drives the discovery of a separate research method to evaluate service quality in the education and training sector. Currently, studies have tried to develop a scale to measure service quality in educational institutions [7], but so far there is no consensus on the system of key factors constituting service quality training services, especially for educational institutions of developing countries [8-12].

In parallel with the internationalization of higher education and the increase in the number of private universities, the reduction in the state budget for public universities is the cause of the increasingly competitive higher education market acrimonious. That fact indicates that universities need to improve the quality of education and constantly satisfy customers. Another strategy that can be mentioned is to improve the quality of higher education services by a student-centered approach. Student satisfaction approaches can be considered as an effective tool, a strong bridge between different academic and market-oriented perspectives on how to improve the quality of University.

In the context of education research in Vietnam, higher education is associated with the history of Eastern higher education, the goal of education is to train elite classes with many levels and rigorous examinations. Moving in accordance with the changes of the times, the importance of education and training, especially university education, has shifted from traditional higher education to "mass" higher education so many people can go to college. In addition, with the emergence of many universities, in order to compete and provide optimal satisfaction for students and university lecturers, the goal of the study is to identify the factors that affect the level of customer satisfaction with the provision of high quality training services by higher education institutions in Vietnam.

## **Literature review**

### ***Service quality***

First, it must be affirmed that the quality of a product or service is an important competitive factor, it can help increase the quantity demanded of users. But it was only in the 1940s that many sectors realized the importance of service quality, thereby considering this factor as a strategy to compete in the market. Since then, service quality has largely determined success or failure, having a great impact on the global economy.

Depending on the research object, different research quality, service quality will also be defined in many different ways, including the following definitions as follows:

- According to TCVN and ISO 9000, "service quality is the suitability of a product or service to satisfy requirements set forth by the customer, for which a supplier or manufacturer should review the requirements periodic quality requirements for the product".

In short, service quality and the issues surrounding it are all defined that "service quality is the degree to which a service satisfies the requirements of its users". In other words, service quality is the gap between customer expectations and reality when using the service. According to that research direction, the perceived service quality can be divided into 3 levels:

- Good service quality: the service meets the needs of customers.
- Satisfactory service quality: the service meets the needs of customers.
- Service quality is not good: the service does not meet the needs of customers.

During the research, Parasuraman proved that the 5th gap is affected and dependent and the remaining 4 distances. That is the premise of the SERVQUAL model – the model is widely applied in many fields, but it cannot be denied that for different industries, the model may not be optimal, so it is necessary to supplement and adjust accordingly. In particular, in the education industry, the quality of educational services depends greatly on those who decide it such as students, parents, staff, society, etc. The quality of educational services is considered a special feature. Most importantly, it is received by the user here as the learner in the learning process [13-17].

### ***Service quality in higher education***

Customers as well as anyone who accepts to pay costs to use products or services provided by businesses or organizations to satisfy their needs. In particular in the field of higher education, students are the ones who spend money to be able to satisfy their learning needs, buy knowledge and other study support services. Therefore, it can be said that for a higher education institution, students will be considered as a customer of training services, from which, universities need to focus on satisfying their needs and expectations students' wishes.

[18] have proposed four components of a comprehensive overall education based on students' perceptions to experience quality in higher education, including: (1) Quality of lecturers ; (2) Students participate in learning; (3) Social/emotional support system; and (4) Library and information technology resources. The study found a more "bright spot" than previous studies: weak faculty quality and student support systems have a strong influence on the delivery of quality education.

Research on the quality of higher education services by [19] was developed from the HEdPERF training service quality measurement model – a model built through a comparative method to show the strengths and limitations of each model. The study selected six public and private schools in Malaysia, from which the author pointed out five groups of factors determining the quality of training services including: (1) Teaching (Academic aspects), (2) Administration (Non – academic aspects), (3) Reputation (Reputation), (4) Approach to organization (Access) and (5) Training program (Program issues).

The study by [20] was conducted at universities in Cambodia and identified five main factors related to providing quality higher education: (1) Training programs and activities Extracurricular; (2) Teaching faculty; (3) Budget; (4) Facilities; and (5) Interactive system.

A study from private universities in Thailand and Japan by [21] determined the quality of services based on students' thoughts, and pointed out 3 factors influencing Students' decision to choose a university includes: (1) Academic aspect, (2) Non-academic aspect and (3) Facility aspect.

[22] conducted a study assessing the quality of higher education services, developing a scale named "Higher Education" based on performance (PHEd) consisting of 67 items and 8 Research aspects: (1) Reliability; (2) Efficiency; (3) Ability; (4) Performance; (5) Capacity; (6) Guarantee; (7) Unusual situation management and (8) Textbook.

In the study of [23] on modeling service quality in higher education, the research team builds a model based on the concept of service quality and points out two groups of factors: main: : (1) quality of teaching, quality of input, interoperability, learning facilities; (2) aspects of administrative and logistical management including: input quality (quality of learners, teaching staff, administrative staff, facilities), training process (teaching, learning) and administrative work), output quality (exam results, jobs and income levels) [24-27].

### ***Effect of service quality on non-financial performance of universities***

For higher education institutions, measuring the financial level is very difficult, so to evaluate the performance, studies often rely on non-financial factors for analysis. The non-financial performance of educational institutions is the goal that most higher education institutions want to achieve with their own development tools and policies.

The non-financial performance of schools can be effectively approached according to the theory of thinking stages of activity. This raises the dependence of the non-financial performance of the educational institution and the factors of service quality, customer satisfaction and customer loyalty. When educational institutions invest in service quality factors both internally (in terms of facilities, faculty capacity) or externally (activities outside the school, reputation, ability, etc.) ability to approach potential students) will all have an impact on customer satisfaction (here, students, employees and employers) [28-31].

Any business activity needs an effective combination of two factors, human and material, in order to carry out the work in accordance with the intentions in the business strategy and plan of the organization, based on available resources. Service quality is related to employee performance, especially internal service. Internal services can be understood as benefits that corporate employees enjoy when participating in business activities. Internal services include: workplace facilities, work that employees have to do, employee selection and development,... Effective internal service can bring satisfaction employees, thereby motivating them to work and stick with the company for a long time Good employees will improve the operational efficiency of the business.

The application of the service-profit chain model in Homburg's research has confirmed that the company's financial performance can be improved through the way of improving employee satisfaction to orient towards customers, customer satisfaction and customer loyalty. Similarly,

### ***Service-profit chain model (SPC)***

The service-profit chain is the link between the elements: employees - customers - profits. The core factor to build this chain is the employee's attitude about work, from which it develops to the purpose of profit. Employees are the basic factor to achieve the quality of human resources, thus confirming the importance of employee commitment and loyalty.

From the model, it can be seen that, when internal service quality positively affects employees, it will make them loyal and satisfied, thereby indirectly improving employee's work results, providing valuable products high value to customers. When customers feel satisfied with their needs, the likelihood of returning will be higher. That is the first step in retaining loyal customers, then being able to reach more potential customers, increasing the revenue of the business.

In the field of higher education, the SPC model also demonstrates its effectiveness. However, for higher education institutions, financial goals are difficult to measure, as well as goals vary between institutions, so the ultimate goal here is often a non-financial goal. Thanks to the investment in quality services, educational institutions will create student

satisfaction and their loyalty to the institution, thereby creating non-financial benefits of these higher education institutions.

### ***Hypotheses and research models***

#### Relationship between service quality and non-financial performance

In fact, the research on service quality in higher education has not been given much importance and received little attention even though this is an important aspect. The service quality factor in both internal and external aspects is what creates a positive impact for a higher education institution in many aspects including competitive advantage compared to competitors player or widely known by everyone. Realizing that fact, the research team wants to show the positive relationship of service quality both inside and outside the higher education institution on non-financial performance. From there, the research team hypothesized:

*Hypothesis H1: There is a positive relationship between internal service quality and non-financial performance.*

*Hypothesis H2: There is a positive relationship between external service quality and non-financial performance.*

Organization size in the relationship of service quality affects non-financial performance

According to the law of economies of scale, the strengths that large universities have are clearly visible. Every dollar invested in the quality of internal services and the quality of services outside of a larger educational institution will generate more benefits than smaller organizations. Along with the advantage of large scale, institutions can also reach potential students more easily because they are known by many people, thereby easily improving the quality of non-financial performance. From there, the research team hypothesized:

*Hypothesis H3: Organization size moderates the effect of service quality on the quality of non-financial performance.*

The type of organization in the relationship of service quality affects non-financial performance

The type of educational institutions studied here is divided into two types, private educational institutions (public schools) or public educational institutions (public schools). When considering the impact of service quality, in the case of increased investment in both internal and external service quality: types of public organizations with the advantage of rich experience, established reputation and people's trust, will be able to increase non-financial performance significantly; However, for private sector schools, increasing investment in service quality may not necessarily increase non-financial performance, for the same reasons as lack of experience in training many people know and not yet trust by the people. From there, the research team hypothesized:

*Hypothesis H4: Type of university moderates the effect of service quality on the quality of non-financial performance.*

Organization's headquarters address in the relationship of service quality to non-financial performance

Regarding the location of the headquarters of the educational institutions in this study, two types of organizations are shown, which are organizations with headquarters in centrally run cities, large cities such as Hanoi, Ho Chi Minh and Da Nang, ... and organizations in the remaining provinces. The advantages of the first type of organization can be clearly seen when the demand for moving to big cities of potential students is increasing, these organizations are easy to communicate, promote as well as reach students their members than in other small provinces, resulting in higher non-profit

performance for the same level of investment in quality service compared to other types of organizations. From there, the research team hypothesized:

*Hypothesis H5: University headquarters moderates the effect of service quality on the quality of non-financial performance.*

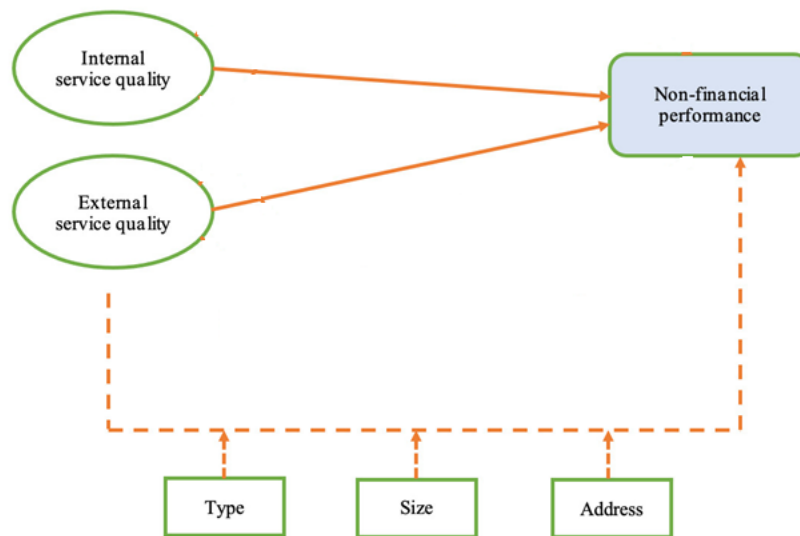


Fig. 1. Theoretical research model  
Source: suggested by the research team

## Research Methods

### Sample

The year 2004 is a milestone marking a major turning point in the quality management of higher education in Vietnam, due to the large number of national documents promulgated towards the renovation of educational management in Vietnam. The regulatory policies on education quality management have been consulted from universities, domestic and foreign experts continuously for two years. This is considered the first set of transparent, clear and systematic standards in the history of Vietnamese education. These regulations have set out requirements in higher education quality management in association with resource conditions, industry structure and objectives and missions of Vietnamese higher education institutions.

In 2017, the Ministry of Education and Training began to apply training programs and training facilities according to the AUN-QA Standards, with the permission and consent of the Trust Council of the Schools Network. ASEAN University (AUN Board of Trustess), thereby creating a premise and basis for drastically improving the quality of higher education.

The research sample was analyzed based on 865 valid responses from Vietnamese students.

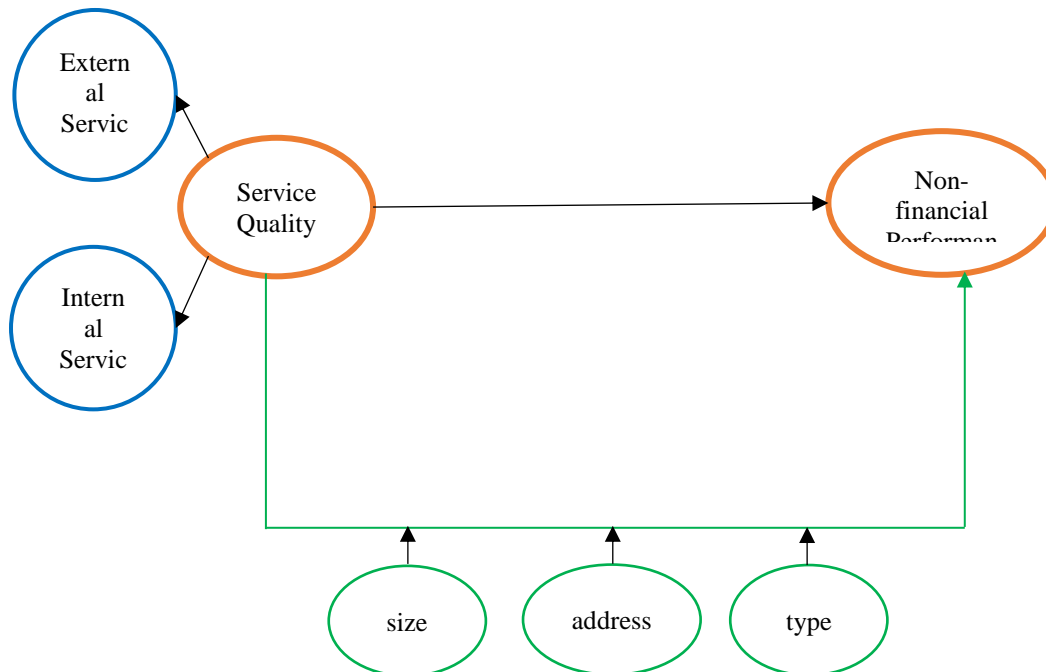


Fig. 2. **Experimental research model**

Source: Suggested by the research team

Inside:

- Independent variable: Service quality (SQ) is a second order factor. SQ is composed of two factors: internal service quality (ISQ) and external service quality (ESQ).
- Dependent variable: Non-profit performance (NFP)
- Regulatory variables: University size (size), University type (type), University headquarters (address)

Specifically, the concepts of the research variables are as follows:

- Internal service quality (ISQ): Internal service quality is an employee's perceived satisfaction with services provided by internal service providers. In addition, internal service quality refers to employees' perceptions of the quality of service they receive from or provide to their colleagues
- External service quality (ESQ): External service quality is defined as the fulfillment of customer needs and wants and the accuracy of delivery in delivering value or benefit that the customer wants.

(The variables are all on a Likert scale from 1 - strongly disagree to 5 - strongly agree)

### **Analytical techniques**

In the era of ever-evolving information technology, the "first generation" techniques that were once favored by scientific researchers are gradually being replaced by the emergence of technology "second generation" with some ability to eliminate the weaknesses of the previous method. The common name for these new models is the



structural equation model (SEM).

SEM is not a separate method but a set of different models. Instead of only being allowed to study the relationship of a single dependent variable with one or a few other explanatory variables such as statistical methods ANNOVA, linear regression, etc., SEM has opened up more problems such as: endogenous variable problem. Thus, the more complex situations occur, more problems as well as the need to understand the not only one-way relationship of the variables, then using SEM is one of the better choices.

Of the two types of SEM, CB-SEM - a variance-based SEM model is often used to indicate whether to support or reject theories or relationships of some subjects. The CB-SEM method builds on whether the selection models can estimate for a sample data set the problem of covariance or not. In contrast, the PLS path model (or PLS-SEM) can be used to develop more relationships with a pre-existing foundation, thereby finding out new features or special relationships that are unique to each other. Other methods are difficult to see. The use of PLS-SEM in exploratory studies is also a strong point of this SEM method when it focuses on explaining the variance for the dependent variables, then the model is tested.

Compared with the covariance-based in CB-SEM, the PLS - SEM path model gradually gained more attention of researchers by handling structural formative, processing This is obviously simpler when implementing vowiss CB – SEM. If the researcher simply wants to check if a certain theoretical model is appropriate, it is not a problem to use CB-SEM, but according to trends, to be able to predict, or develop, Theoretically, PLS-SEM will become a more reliable method for implementation. In summary, PLS-SEM can relax the requirement of large numbers of observations such as taking a full sample size or using multiple measures, so the term "soft sampling" is also sometimes used. Research uses PLS-SEM method for several reasons:

1. Survey data cannot be normally distributed by its own characteristics.
2. PLS – SEM solves more in the structural bridge model when the SQ variable is modeled as a 2nd order factor formed from two lower aspects, ISQ and ESQ. Therefore, the CB-SEM method should not be selected.
3. In order to develop emerging theories, the choice of using CB - SEM method is no longer appropriate, instead, the PLS - SEM path model has more advantages.

The order of data analysis in quantitative research

Step 1: Descriptive Statistics

Describe the data obtained from the official survey sample by classifying the number of students participating in the survey based on different criteria.

Step 2: Check the reliability of the scale by

Cronbach's Alpha coefficient is used in testing the reliability of the scale to find unreasonable variables and eliminate them. Based on the Cronbach's Alpha test coefficient of the scale components and the Cronbach's Alpha coefficient of each measurement variable, we can test the reliability of the variables in the scale. The study will exclude the variables with the total correlation coefficient of the variable  $< 0.3$ . For Cronbach's Alpha coefficient, the research team takes the standard as greater than 0.7

Step 3: Exploratory factor analysis EFA

EFA is a method to analyze the dependence of different variables or in other words, there is no independent variable and it is explained based on the inverse relationship between related variables. EFA is used to derive a smaller set of more significant factors from a set of reference variables. Based on the linear relationship between the factors and the observed variables, we have a basis for this extraction. The EFA method is commonly used in research to briefly evaluate the relationships. However, EFA relies only on collected information sources, then finds out the constituent elements that can then indicate whether previous models or studies are appropriate or not. As for structural



measurement, EFA will not be a good method. Therefore, EFA is only used to analyze intermediate variables, and SQ measures the composition, so it is not suitable for EFA analysis.

The alternative to evaluate the scale is to use the extracted variance: when the extracted variance is  $> 50\%$  and Eigenvalue  $> 1$  or the factor loading (Factor loading)  $\geq 0.5$ , the measurement problem is solved [32].

Step 4: Evaluate the measurement model

Combined reliability, convergence value and discriminant value are 3 values to be able to evaluate the measurement model:

- Composite reliability assessment measures the reliability of a set of observed variables measuring a concept (factor) and the reliability coefficient CA measures intrinsic consistency across a set of important variables closeness of the answers. The composite confidence value is greater than 0.7 and CA confidence is 0.6 or higher, then it will be satisfactory.

- Evaluation of the convergence value of the scale is achieved when the normalized weights (Outer loading) of the scale are high ( $> 0.5$ ) and statistically significant ( $p < 0.05$ ) and the total variance extracted is reflected. The overall variability of the observed variables explained by the latent variable is significant when the value is above 0.5 [33]

- Evaluation of discriminant validity: is the degree to which one concept of a particular latent variable is distinguished from the concept of other latent variables [34]

- Multicollinearity detection: Through the Variance Inflation Factor (VIF), we can conclude that there is a sign of multicollinearity when  $VIF > 10$ .

Step 5: Evaluate the structural model

- After having the structural model, we need to test the new variable, quantify the impact of SQ on NFP and test the hypotheses, we use the following tools:

- Measure the coefficient of determination (R-square value), an index that measures the model fit of the data or the explanatory power of the model. Depending on the degree, values around 0.67 and above would be strong, respectively, about 0.33 as moderate, and 0.19 as weak.

- The Path Coefficient is intended to describe the effects of different variables similar to the normalized beta obtained through the OLS model and is significant and will have the same effect as the sign of the coefficient.

- T-value: using the student distribution to evaluate the significance level

Step 6: Test Bootstrap

Bootstrap estimation test: through sample processing to get confidence intervals for all estimates as well as build a premise for statistical inference. By treating it randomly, the Bootstrap template will generate replacements from the original templates.

## Results

Through the graph, the research team focused on the number of third-year students who conducted the survey to satisfy the research objective because most of the first-year and second-year students did not have much experience and sense of the subject. school, and 4th year students and above are busier, so they don't have time to seriously conduct the survey. Therefore, when analyzing the sample according to the number of years students' study at the school, the sample is also guaranteed to carry out the research.

The research results are extracted from SPSS 23 software. The results show that all the scales in the research variables ensure reliability with the Cronbach Alpha coefficient being greater than 0.7 and the total variable correlation coefficient being uniform. greater than 0.4. Thus, as suggested by [32], the scales of the research variables all ensure the conditions of reliability and validity, satisfying to perform the next tests

Table 1

**Construct Reliability and Validity**

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
External service quality	0.891	0.893	0.888	0.570
Internal service quality	0.876	0.882	0.877	0.704
Non - financial performance	0.871	0.873	0.872	0.577

The results in Table 1 show that all research variables have a composite Cronbach Alpha coefficient greater than 0.8, the smallest value is 0.808, proving that the scales in the research variables ensure very good reliability [32]. At the same time, the extracted variance value (AVE) is also greater than 0.5, the smallest value is 0.645 – a very excellent result [33].

Next, the study tests the discriminant validity of the research variables.

Table 2

**Discriminant ValidityFornell-Larcker Criterion**

	External service quality	Internal service quality	Non - financial performance
External service quality	0.755		
Internal service quality	0.198	0.839	
Non - financial performance	0.394	0.381	0.759

The results show that all values on the diagonal are larger than the value outside the diagonal, specifically the largest value outside the diagonal is 0.394 is still smaller than the smallest value on the diagonal is 0.755. This means that the research variables ensure discriminant validity [32, 33].

Table 3

**Outer Loadings**

	External service quality	Internal service quality	Non - financial performance
ESQ1	0.688		
ESQ2	0.819		
ESQ3	0.770		
ESQ4	0.862		
ESQ5	0.692		
ESQ6	0.682		
ISQ1		0.837	
ISQ2		0.909	
ISQ3		0.766	
NFP1			0.742
NFP2			0.767
NFP3			0.738
NFP4			0.820
NFP5			0.726

Table 4

## Heterotrait-Monotrait Ratio (HTMT)

	External service quality	Internal service quality	Non - financial performance
External service quality			
Internal service quality	0.195		
Non - financial performance	0.390	0.381	

The results in Tables 4 and 5 show that the scales of the research variables all converge on the original research variables and satisfy the loading coefficients greater than 0.5 [32, 35].

To test the phenomenon of multicollinearity, the study uses the VIF coefficient, the test results are as follows:

Table 5

## Collinearity Statistics (VIF) Outer VIF Values

	VIF
ESQ1	1.948
ESQ2	1.909
ESQ3	1.964
ESQ4	1.966
ESQ5	2.451
ESQ6	2.530
ISQ1	2.514
ISQ2	2.304
ISQ3	2.352
NFP1	1.800
NFP2	2.860
NFP3	2.278
NFP4	2.031
NFP5	1.622

The test results show that all the scales have VIF coefficients less than 5, which means that there is no multicollinearity in this study and the conditions for further analysis are satisfied. The R-square value =0.24, shows that from the perspective of Vietnamese students, the non-financial performance of higher education institutions is explained by nearly 30% (24%). This means, the variables in the research model explain 24% of the variation in the performance of Vietnamese higher education institutions.

Table 6

## Model\_Fit Fit Summary

	Saturated Model	Estimated Model
SRMR	0.051	0.051
d_ ULS	0.269	0.269
d_ G	0.174	0.174
Chi-Square	608.945	608.945
NFI	0.881	0.881

Finally, to evaluate the measurement model, the study evaluates the fit of the model with the research data with the results as shown in Table 7. According to [32], the SRMR coefficient less than 0.08 is guaranteed. fit of the model with the research data. With the results of the project, the SRMR coefficient is 0.051, the NFI is 0.881, the coefficients d\_ULS and d\_G are both less than 95%, so the research model is consistent with the research data [33, 34].

**Structural Model Evaluation**

To evaluate the structural model, the study used Bootstrapping technique in Smart PLS software to test the research hypotheses.

The results of hypothesis testing are as follows:

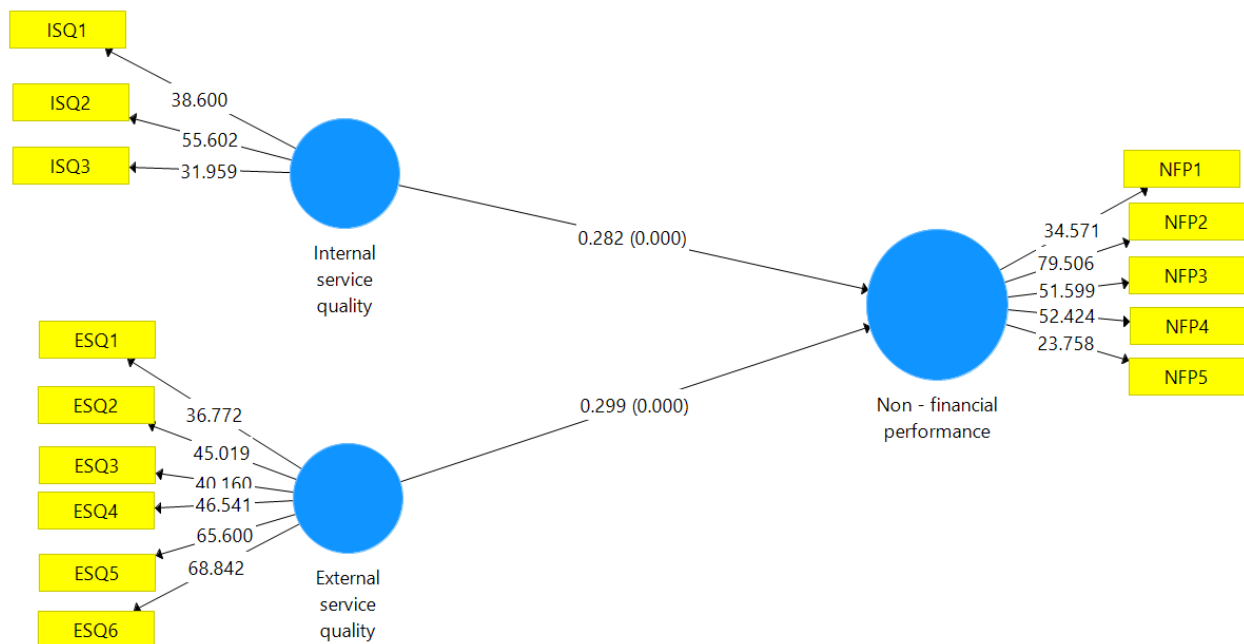


Fig. 3. Hypothesis test results (extracted from Smart PLS)

*Synthesis of the research team from Smart PLS*

Based on the results of hypothesis testing in Figure 7 shows that 2 hypotheses (H1-H2) are tested at regular intervals, both hypotheses are supported at 1% significance level due to the P-value. value < 0.01. In this result, the impact coefficients are all positive, showing that the direction of impact between the factors is a positive relationship (positive impact).

A more detailed analysis shows that internal service quality (ISQ) has a positive impact on the performance of universities in Vietnam with an impact level: 0.282. This means that a university with a good quality of internal service will make it easier to attract talent and retain students. This is relatively obvious because students through the internal learning environment can promote many strengths as well as create comfort when studying. With such a space, students will reduce stress and interest in lessons or other internal activities.

On the other hand, the impact factor of external service quality (ESQ) on the performance of universities is 0.299 at 1% significance level (P\_value = 0.000).

In summary, the overall effect coefficients are positive and there are some very high coefficients that demonstrate that improving the SQ will have a positive effect on the NFP. For the first 2 hypotheses (H1 - H2), both are supported.

Finally, the study tests the regulatory role of the regulatory variables in the research model.

The regulatory role test model is as follows:

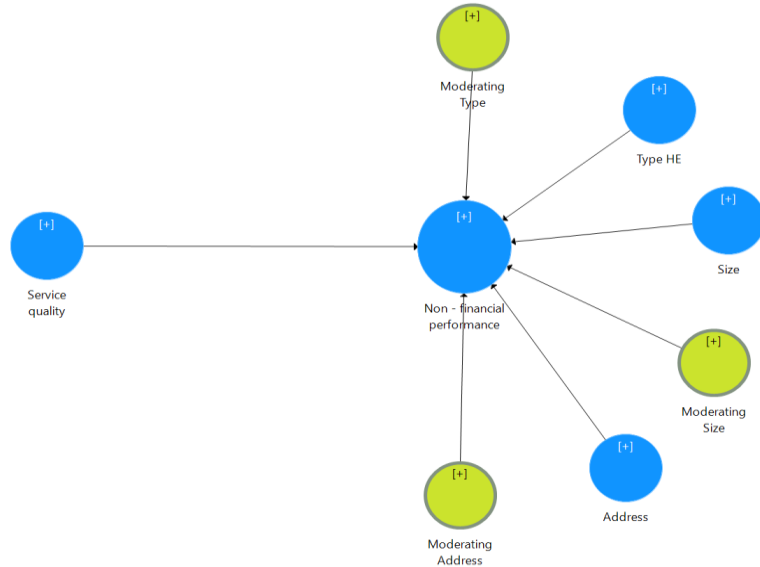


Fig. 4. Regulatory role test model  
Source: Synthesis of the research team

Using Bootstrapping technique in Smart PLS 3.3, the results of the regulatory role test are as follows:

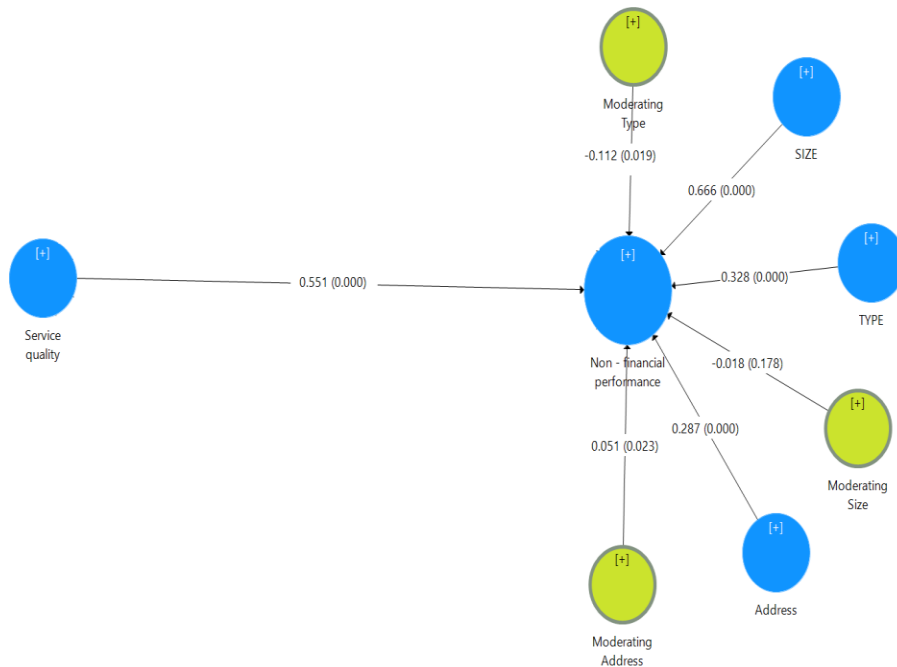


Fig. 5. Regulatory role test results  
Synthesis of the research team from Smart PLS

The test results in Figure 9 show that two statistically significant regulatory variables are address and type of university. However, with the moderating variable of university size, there is not enough evidence to conclude that size has a moderating role in the relationship between training service quality and university performance. The detailed analysis of the impacts is as follows:

First, the regulatory role of the Address modifier:

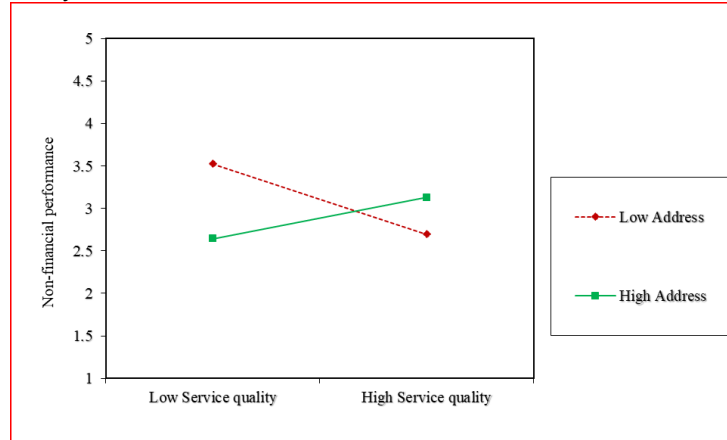


Fig. 6. Regulatory role of university addresses  
Source: Synthesis of the research team

The research results in Figure 10 show that, with universities in central cities such as Hanoi, Hai Phong, Da Nang, Ho Chi Minh, and Can Tho, the more investment they make to improve their quality, the more investment they make. Training services further improve the operational efficiency of universities. However, with universities not belonging to centrally-run cities such as Son La, Phu Tho, Quang Ngai, and Kien Giang. Therefore, the more investment in improving service quality in terms of facilities and staff, not improving operational efficiency, but even reducing operational efficiency. This means that for universities in remote provinces, even though they have invested in facilities, they still cannot attract students and compete with other universities (who are competitors). competition in the industry). Partly due to the culture of the Vietnamese people, the desire for their children to study in big cities (cities directly under the central government) to have the best development opportunities.

Second, the moderating role of the moderator variable of the type of university (Type)

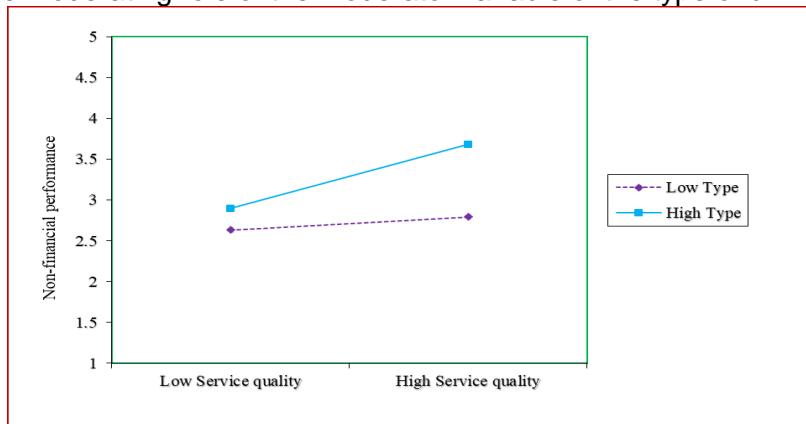


Fig. 7. Regulatory results by type of university  
Source: Synthesis of the research team

The above results show that public universities, the more they invest in the quality of training services, that is, the higher the service quality, the higher the non-financial performance. Reputation and image are greatly improved. However, for private universities in Vietnam, the higher the service quality, the less the improvement in non-financial performance is shown in the straight line representing the low type with small slope than the slope of the High type line, or the slope of the High type line is greater than the slope of the Low type line.

Therefore, public universities need to innovate, digitally transform education and invest in improving service quality more to bring about even higher operational efficiency in the future.

## **Conclusion**

The quality of internal education has a positive impact on student satisfaction. The internal factors mentioned here can be mentioned such as facilities, library system of learning materials, training programs, teaching staff, etc. Indeed, these factors have been proven in many previous studies. First, a training program that is rated as quality will be able to provide quality courses that meet the needs of students. Secondly, helping students to have good access to educational services requires the enthusiasm and dedication of teachers and staff as well as the level of readiness to respond and provide services, thereby leading to satisfaction of students. Finally, physical facilities or tangible facilities such as equipment, lecture halls, libraries are very important factors determining the satisfaction of students studying at the university.

The quality of internal and external training services can also directly affect the performance of universities in Vietnam, without having to go through intermediaries. But this impact is moderated by two factors: the type of university and the geographical location of the university. As mentioned above, for public universities, the higher the quality of training services, the more effective the non-financial performance of these institutions will be. But that's not necessarily true for private schools. Similarly, universities in central-affiliated cities, if improving the quality of training services, will also have a more positive impact on performance than universities in other regions.

## **Significance of the study**

The research is conducted with a focus on students and from the students' perspective, expressing feelings of satisfaction and loyalty of lecturers. This is the new point that the research wants to achieve through the whole process is from the perspective of students because in Vietnam, students play a very important role in the success of the university.

In previous studies, the service-profit chain model for evaluation and measurement has not been used, so the research team applies the model and shows the close relationship between service quality and service quality and performance of universities in Vietnam. In addition, from the student's perspective, performance is not measured traditionally, but is measured by non-financial performance, as assessed by students studying at that university.

The concept of a higher education institution has been recognized as part of the service industry. The introduction of many private universities increased competition in this field. However, that is why universities need to attach importance to and improve service quality to achieve the best performance. However, the goals of the schools are different. If public universities often aim for the benefit of the community, private universities often focus on profit goals. Therefore, the study examines the role of the type



of university as a statistically significant moderator in the relationship between service quality and university performance from the perspective of students. In addition, the study shows a statistically significant regulatory role of geographical location and size in the relationship between service quality and performance of universities in Vietnam.

In addition, the study provides solutions and recommendations to improve the quality of training services and operational efficiency of universities in Vietnam. At the same time, the research results are the theoretical basis for future studies on this topic.

### **Research limitations**

The recognition of limitations in research can suggest and develop new directions for future research. Therefore, the detection of limitations in the study is very necessary.

To suggest and develop new directions for future research. Therefore, it is necessary to detect the limitations in the research. This study is only conducted for the research subjects who are students of 15 educational institutions in the North - Central - South with the sampling method. Convenience and selection criteria are based on the popularity of the university. Therefore, the research results are not representative, not highlighting the generality of the study.

Another limitation focuses on the time and scale of the study. Due to resource factors and some objective reasons, the research team carried out the research in a short time with a relatively small scale. Therefore, the observed sample may not be as complete and comprehensive as possible. Therefore, the reflectivity of the topic will bring greater significance if the research sample is surveyed over a longer period of time, with a large enough sample of observations.

The research team carried out research on students from universities across the country, but the group has not mentioned and surveyed the target group of students from colleges, research institutes, centers university training center. The team found that this is a limited part of the research object in this study.

In fact, the team found that the quality of university services not only affects students, but also many other individuals in the organization. However, the research team only stopped to point out the impact of service quality on students. This is also considered a limitation of the study.

Finally, the effects of service quality on the parallel function just stop at the ability to convert, have not yet delved into the quality and practical approach, there is no research method to approach the space.

### **Future research**

Realizing the limitations and shortcomings in the research, the research team proposes some new research directions in the future:

Future studies may consider multinational studies, surveys for international students and staff who have been using higher education services in Vietnam. Although students are considered as the main customers in higher education activities, if we ignore the influence of other factors on training services, it will cause deviations, not achieving generality and comprehensiveness when drawing conclusions.

In the integration of the world economy, the increasing demand of international students has opened up many opportunities and challenges for training institutions. In 2019, Vietnam welcomed about 21,000 foreign students to study in Vietnam (Ministry of Education and Training), which contributes to affirming the quality of Vietnam's human resource training compared to international training programs. That has promoted the attraction and fostering of highly qualified lecturers, good pedagogical skills or extensive

communication strategies of universities,... Environmental factors universities constantly influence behavior to improve service quality and operational efficiency of educational institutions, and open future expectations for research that is closer to reality.

One of many new research directions proposed by the research team is to conduct research on regional cultural factors. As mentioned above, the research team encountered a limitation in survey scale, so regional cultural factors were not mentioned and analyzed in this research paper. However, not only in Vietnam but also in the world, cultural factors have a strong impact on service quality and organizational performance. In Vietnam - a country with 54 ethnic groups, regional cultural characteristics have an impact on accessing and evaluating training quality and performance of universities in different regions. The expansion of the regional factor aims to analyze student satisfaction about the quality of training. From there, further studies can conduct comparisons and contrasts between regions (expanding further in many countries) which is an effective development orientation in the future.

During the research, the research team found that the quality of higher education services not only affects students, but also many other individuals in the organization. Therefore, it is necessary to expand the survey to many objects and cases.

From the study "The influence of service quality on the performance of universities from the perspective of students", the research team said that there are still many factors that have an impact on training quality and effectiveness. activities at universities have not been fully exploited. Having more research in the future is a motivation for researchers to contribute knowledge and improve service quality at university level. Thereby, finding a comprehensive model suitable in different conditions is a valuable contribution in the field of scientific research.

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