Factors Affecting Student Satisfaction with Higher Education Service Quality in Vietnam

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Abstract: Higher education plays an important role in providing students with knowledge and skills to enter the labor market. The quality of higher education, the satisfaction of the quality of higher education has been concerned by many individuals and organizations. The study aims to explore the factors affecting student satisfaction with the quality of higher education services in Vietnam. Research data was collected from survey results by questionnaires from 396 students of An Giang University, Vietnam National University Ho Chi Minh City, Vietnam. SPSS 20, AMOS 24 software is used for analysis and evaluation of scales through Cronbach's Alpha reliability coefficient; exploratory factor analysis EFA; CFA confirmatory factor; SEM linear regression analysis to test the hypotheses. The results of the SEM model study show that there are six factors affecting student satisfaction with the quality of higher education services in Vietnam, including teaching staff; facilities and teaching facilities; ability to serve; educational activities; student support activities; education programs. From the research results, discussions on educational administration are proposed to improve student satisfaction with the quality of higher education services in Vietnam.

Keywords: *An Giang University, higher education services, student satisfaction, Vietnam.*

Introduction

In the development of socio-economic science, and technology education has an important role. Education is the key, it is the driving force for economic development, socio-political stability, and human development index improvement. A university is a unit that trains highly qualified human resources. Therefore, higher education is viewed as a service provided to customers who are students (Yusoff et al., 2015). The quality of higher education services of universities is always a factor that students care about and value so that they can make a decision to choose a university where students will stick to studying and training, and develop skills (Shahijan et al., 2018). The quality of higher education services is an issue that is always interested by the Ministry of Education and Training and universities to innovate towards international integration. Therefore, determining the factors affecting student satisfaction about the quality of higher education services is a necessary and regular job in universities.

Student satisfaction with educational institutions can influence their beliefs and future intentions (Thomas & Galambos, 2004). At the same time, student satisfaction is a university indicator to measure how well students meet the needs of students, it represents the quality, success, and survival of universities (Alnawas, 2015). Previously, education was seen as a non-commercial, non-profit training activity, but over time due to the impact of external factors, especially the impact of the market economy. Universities have gradually changed the nature of educational activities that are no longer just a public benefit but a public service, more precisely, a clear market for educational service has been formed (Truong et al., 2016).

To attract customers who are learners, educational institutions offer many different forms of training. However, there are also many worrying issues including poor quality of training; program content is heavy on theory, not suitable for reality; graduates who do not meet the job requirements; moral degradation in schools. From this situation, we should measure learners' satisfaction with the quality of educational services (Wilkins & Balakrishnan, 2013). Through the

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assessment of students, the university has an objective view of the educational services they provide with the expectation to improve and improve the quality of education and training services (Beverly et al., 1998).

Determining the factors affecting student satisfaction about the quality of higher education services so that universities can develop strategies, improve the quality of higher education services, and increase student attraction, and achieved university accreditation results (Aldridge & Rowley, 1998). With the above purpose, it is to contribute to improving and improving the quality of higher education services of An Giang University, Vietnam National University Ho Chi Minh City, Vietnam. Specific objectives, the study is to determine the factors affecting the satisfaction of students about the quality of higher education services at An Giang University, Vietnam National University, Ho Chi Minh City, Vietnam. In addition, a number of discussions provided governance implications, in order to improve the quality of higher education services, to increase student satisfaction (Elliott, 2003).

Literature Review

Service Quality and Educational Service Quality

The customer is an important element of the service delivery process. Customers are both directly involved in the production and consumption of services. Service quality is rated high or low depending on customer satisfaction when using the service (Rowley, 1997). Some researchers have defined customer satisfaction to include.

According to Bitner (1990), customer satisfaction is a state in which the product or service satisfies or exceeds the satisfaction of what the customer needs and expects. The result is repeat purchases, loyalty, and the value of word of mouth. Oliver (1997) argues that satisfaction is the degree to which a customer's requirements are met. According to Parasuraman et al. (1985, 1988, 1998), service quality is the gap between customers' expectations before using and their perception after using.

Thus, service quality is the difference between consumers' expectations of service and their perception of the service's outcome. Service quality can be understood as customer satisfaction measured by the difference between expected quality and achieved quality (Weerasinghe et al., 2017). Service quality is the result of a comparison made between customers' expectations of service and their perception of using that service. Service quality means meeting and satisfying customer needs (Dill, 2007).

Higher education converges elements that are considered a service industry, in which universities are seen as service providers and students as customers. It can be seen that the main customers in higher education services are students. According to Appleton-Knapp and Krentler (2006), higher education is classified as a service with its main outputs being mental development, knowledge, skills, and graduation outcomes rather than ownership of the object such as a qualification certificate that represents tangible evidence of educational services. Therefore, it becomes important to identify the determinants of service quality in higher education from the student's point of view. Quality of higher education services is the expectation and perception of learners when using and participating in higher education activities (Jain et al., 2011).

Satisfaction and Student Satisfaction about Higher Education Service Quality

According to Oliver (1997), satisfaction is the consumer's response to the satisfaction of wants. This definition implies that satisfaction is the satisfaction of consumers in using the service to meet their expectations, it includes the level of satisfaction above and below the desired level. Zeithaml and Bitner (2000) argue that customer satisfaction is the customer's evaluation of a product or service that has met their needs and expectations.

Thus, student satisfaction about the quality of higher education services is a comprehensive assessment of the educational activities provided by the university that meet the students' expectations. Student satisfaction is assessed through the interaction between service users and service providers during and after using the service. Student satisfaction is felt through the school's activities to provide students with student satisfaction before purchase and evaluation after use (Babar & Kashif, 2010).

Student satisfaction and higher education service quality are related. There have been many studies to test the relationship between these two concepts, they believe that service quality leads to customer satisfaction, service quality is the premise and basis for assessing customer satisfaction (Arambewela & Hall, 2009). Therefore, in order to improve customer satisfaction, service providers are required to further improve their service quality.

Theoretical Foundations Student Satisfaction about Higher Education Service Quality

To measure service quality, Parasuraman et al. (1985, 1988, 1998) developed the SERVQUAL model, a model that has been cited a lot in research on service quality. In the first efforts, Parasuraman et al. (1985) proposed to measure service quality through 10 factors. However, in the improved version, Parasuraman et al. (1988) reduced the service quality measurement model down to 5 factors including tangibles; reliability; service capacity; responsiveness; empathy.

The SERVQUAL model measures service quality by calculating the gap between perceived service performance and expectations. Using this model helps to identify the factors and components that explain service quality, thereby helping managers know which factors need to be improved to better meet customer needs (Abdullah, 2005; Carrillat et al., 2007).

However, according to Cronin and Taylor (1992), expectations are a factor that is difficult to determine and some customers do not set expectations. Therefore, there is little theoretical and practical support for calculating the gap between perceived results and expectations to measure service quality. Cronin and Taylor proposed the SERVPERF model, which is a successor to the SERVQUAL model to study service quality in relation to satisfaction and purchase intention. The results of data analysis in the study of Cronin and Taylor (1992) show that the scale based only on service performance results well explains service quality.

Research by Cronin and Taylor (1992) shows that service quality is a factor leading to customer satisfaction. Customer satisfaction has a stronger impact on purchase intention than service quality. This implies that managers need to focus on overall customer satisfaction rather than just service quality.

In Vietnam, there have been several studies on student satisfaction about the quality of higher education services. According to Nguyen (2018), the quality of higher education has received great attention from society. It contributes to the country's socio-economic development. Higher education was once considered a non-profit activity, today higher education has become a type of service in which students are customers. Students pay to use the best quality services. The development of universities must go hand in hand with improving the quality of education to attract learners. The author has identified factors affecting student satisfaction with the quality of educational services at Tra Vinh University including Access to educational services; Infrastructure; Educational environment; Pedagogical activities; Educational outcomes. According to Phuong and Hương (2019), Universities should be concerned with meeting social needs and the satisfaction of stakeholders of which students are an important part. Improving service quality and student satisfaction at the university is not only to meet the standards of educational accreditation but also to attract students to the university, It contributes to the existence and development of the university. Students' satisfaction with the service quality of universities in Ho Chi Minh City proposed a model of 6 factors including Dorm; Canteen; Academic counseling; Counseling, and Job placement; Overall facilities, and the support of departments.

According to Tran (2019), University is a unit that trains highly qualified human resources. Higher education is considered a service provided to customers who are students. The quality of educational services, specifically the quality of support services that go hand in hand with the quality of the university training, will always be a factor that students care about, in order to make a decision that they will stick to learning. The study examined the factors affecting student satisfaction about the quality of support services at Lac Hong University based on the SERVPERF model. The research results show that there are five factors affecting student satisfaction about the quality of support services including Service implementation process; Service capabilities; Teaching staff and Academic advisors; Movement activities, and Facilities, which the infrastructure factor is the factor that has the strongest impact on student satisfaction.

According to Dinh et al. (2021), student satisfaction with educational services is considered as one of the strategic factors to attract students of higher education institutions worldwide. The study confirmed the model of student satisfaction with higher education services and investigated the relationship between student satisfaction with the quality of educational services. Research results show that the student satisfaction model for educational services of Hue University includes accessibility to educational services; teaching facilities and equipment, educational environment; educational activities, and educational outcomes. In addition, satisfaction across all aspects of the quality of educational services has influenced the satisfaction of educational outcomes, in which educational activities have the most significant impact.

Hypotheses and Research Structure

On the basis of inheriting the SERVPERF service quality measurement model. We propose a model of factors affecting student satisfaction with the quality of higher education services in Vietnam: A study at An Giang University, Vietnam National University, Ho Chi Minh City, Vietnam with 6 factors including lecturers teaching; education program; educational activities; facilities and teaching facilities; ability to serve; support activities for students, Figure 1.

Based on research theories, the following hypotheses and the model of this study were proposed.

Hypothesis 1 (H1): Student satisfaction with the quality of higher education services includes 6 factors, lecturers teaching; education program; educational activities; facilities and teaching facilities; ability to serve; support activities for students.

Hypothesis 2 (H2): Factors affecting the quality of higher education services can affect student satisfaction.

H2.1: Factor Lecturers teaching affects the quality of higher education services, and can affect student satisfaction.

H2.2: Factor Education program affects the quality of higher education services and can affect student satisfaction.

H2.3: Facilities and teaching facilities factors that affect the quality of higher education services, and can affect student satisfaction.

H2.4: Factor of Ability to serve affects the quality of higher education services and can affect student satisfaction.

H2.5: The factor Support activities for students have an influence on the quality of higher education services and may affect student satisfaction.

H2.6: Factor Educational activities affect the quality of higher education services, and can affect student satisfaction.
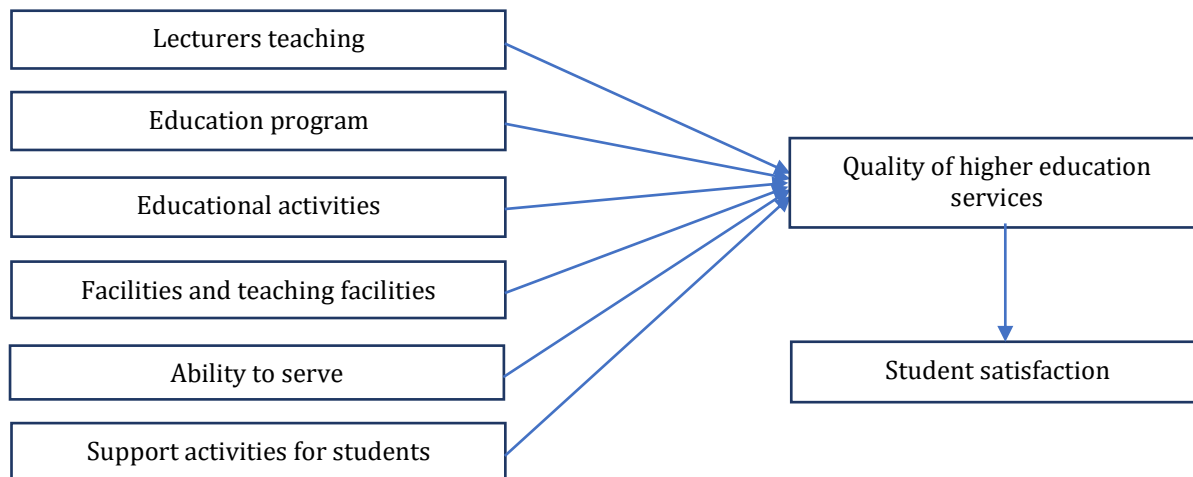

Figure 1. Student Satisfaction with Higher Education Service Quality

Methodology

To evaluate the model of factors affecting student satisfaction with the quality of higher education services. The study considered the theoretical framework and used focus groups to discuss with students and lecturers at An Giang University. In the focus group discussions, the participants were provided with a list of factors affecting student satisfaction with the quality of higher education services; They were asked to give their opinions on the factors affecting student satisfaction with the quality of higher education services; The addition of the missing elements to the list. The consensus reached at the end of this phase allows for the construction of the model shown in Figure 1.

Take a research sample

Based on the preliminary discussion results, a questionnaire was developed to obtain an overview of the factors affecting student satisfaction with the quality of higher education services. Data collection took place between April and July 2021. The questionnaire survey method was used. Students responded directly to the questionnaire. The study was carried out at An Giang University, Vietnam National University Ho Chi Minh City, Vietnam. The questionnaire was distributed to 405 students. There are 396 valid response forms that were collected, including 219 males and 177 females. there are 18.7% students in the first year; there are 24.2% students in sophomore year; there are 27% students in the third year; there are 30.1% students in the fourth year. there are 24% from faculty of agriculture - natural resources; there are 15.4% from faculty of economics - business administration; there are 13.6% from faculty of pedagogy; there are 10.4% from faculty of law and political science; there are 15.4% from faculty of engineering - technology - environment; there are 6.1% from the faculty of information technology; there are 9.1% from the faculty of Tourism and Culture-Arts; There are 6.1% from the faculty of foreign language. It is shown in Table 1.

Table 1. Sample Characteristics

Research factor	Number of samples	Percentage
1. Gender	396	100%
Male	219	55.3
Female	177	44.7
2. Study year	396	100%
Student in the first year	74	18.7
Student in sophomore year	96	24.2
Student in the third year	107	27
Student in the fourth year	119	30.1

Table 1. Continued

Research factor	Number of samples	Percentage
3. Faculty	396	100%
Faculty of Agriculture - Natural Resources	95	24
Faculty of Economics - Business Administration	61	15.4
Faculty of Pedagogy	54	13.6
Faculty of Law and Political Science	41	10.4
Faculty of Engineering - Technology - Environment	61	15.4
Faculty of Information Technology	24	6.1
Faculty of Tourism and Culture - Arts	36	9.1
Faculty of Foreign language	24	6.1

Data analysis

The responses from the survey were coded and analyzed by SPSS software Version 20, AMOS version 24. The questionnaire included 41 Likert entries. Demographic questions seek information on gender, year of study, faculty, and 8 scales of the model of factors affecting student satisfaction with the quality of higher education services. Likert scale is used with a range of values from 1 to 5 to measure the perceived level of survey subjects (1) completely disagree, (2) disagree, (3) neutral, (4)) agree, (5) totally agree.

Measuring student satisfaction with higher education service quality in Vietnam, the steps to conduct the analysis include. The reliability of the 8 scales was assessed using Cronbach's Alpha coefficient. Cronbach's Alpha coefficient > 0.6 can be used, variables with corrected item-total correlation < 0.3 will be excluded.

Exploratory factor analysis (EFA) aims to evaluate each variable's convergence value and discriminant value in the factor groups. Coefficient KMO (Kaiser-Meyer-Olkin) is an index used to consider the appropriateness of factor analysis. The value of KMO must reach a value of 0.5 or more ($0.5 \leq KMO \leq 1$) which is a sufficient condition for factor analysis to be appropriate. Bartlett's test is statistically significant (sig Bartlett's Test < 0.05), showing that observed variables are correlated with each other in the factor. Parameter Eigenvalue is a commonly used criterion to determine the number of factors in EFA analysis. With this criterion, only factors with Eigenvalue ≥ 1 will be kept in the analytical model. Total Variance Explained $\geq 50\%$ shows that the EFA model is suitable (Hair et al., 2014).

Confirmatory factor analysis (CFA) to test the representativeness of the observed variables (measured variables) for the factors (constructs). Confirmatory factor analysis (CFA) to test the representativeness of the observed variables (measured variables) for the factors (constructs). To consider model fit, we should consider validity and reliability including, Composite Reliability (CR) >= 0.7; Average Variance Extracted (AVE) >= 0.5; Maximum Shared Variance (MSV) < Average Variance Extracted (AVE); Square Root of AVE (SQRTAVE) > Inter-Construct Correlations (Hair et al., 2010). Hypothesis testing and measuring the influence of factors on higher education service quality; and measuring the influence of factors on student satisfaction by structural model structural equation modeling (SEM).

Results

Checking Reliability of Student Satisfaction with Higher Education Service Quality Sub-Scales

Alpha coefficient was developed by Cronbach (1951) to measure the internal consistency of variables in the same group. Accordingly, Cronbach's Alpha coefficient can be used to evaluate the reliability of the scale and remove inappropriate variables from the model. Cronbach's alpha is a test of how closely the scales are correlated. A study on the scales according to Nunnally (1978) suggested that Cronbach's Alpha coefficient > 0.6 can be used, the scale can be used best between 0.8 and 1. In addition, variables with corrected item-total correlation < 0.3 will be excluded.

Table 2. Reliability of Student Satisfaction with Higher Education Service Quality Sub-Scales

Scales of measurement	Encode	No. of items	Cronbach's Alpha	Corrected Item-Total Correlation range
Lecturers teaching	LET	6	.912	.682 - .847
Education program	EDP	6	.906	.700 - .788
Facilities and teaching facilities	FTF	5	.902	.730 - .835
Ability to serve	ABS	4	.931	.788 - .877
Support activities for students	SAS	5	.873	.597 - .779
Educational activities	EDA	5	.942	.778 - .903
Quality of higher education services	QHE	3	.964	.905 - .920
Student satisfaction	STS	4	.983	.947 - .963

Research data processing results in Table 2 showed that all 8 scales achieved high reliability (Cronbach's Alpha > 0.8), and corrected item-total correlation coefficient > 0.3. It represents the appropriateness of the scale.

Exploratory factors analysis EFA for the scales

The KMO and Bartlett's test results in the KMO and Bartlett's test tables show that the KMO value = 0.866, proving that this discovery factor is appropriate. Bartlett's test, value Sig.= 0.000 (< 0.05), proves that the variables are correlated with each other in the factors.

Parameter Eigenvalues ≥ 1 is kept in the analytical model. The analysis results showed that Eigenvalue = 1,014 (≥ 1) and 8 factors were extracted with the best meaning of summarizing information. The sum of squares of the cumulative factor loading coefficient (Cumulative) is 77.476% (≥ 50%), showing that the EFA model is appropriate. Therefore, all 8 factors are kept in the research model, Table 3.

Table 3. Rotated Component Matrix

	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
LET5	.882							
LET6	.854							
LET3	.808							
LET4	.789							
LET1	.745							
LET2	.729							
EDA4		.938						
EDA5		.922						
EDA3		.906						
EDA2		.859						
EDA1		.829						
EDP6			.859					
EDP5			.833					
EDP4			.832					
EDP3			.790					
EDP1			.786					
EDP2			.767					
STS3				.965				
STS1				.960				
STS4				.958				
STS2				.946				
FTF5					.875			
FTF3					.833			
FTF4					.815			
FTF2					.814			
FTF1					.793			
SAS5						.874		
SAS4						.840		
SAS1						.796		
SAS2						.774		
SAS3						.705		
ABS3							.906	
ABS4							.905	
ABS2							.870	
ABS1							.839	
QHE2								.769
QHE1								.766
QHE3								.718

Confirmatory factor analysis CFA of the structural model Confirmatory factor analysis CFA is a statistical technique of linear structural modeling (SEM). The method of factor analysis CFA and linear structural model SEM were used to test the scales and model fit. CFA results are evaluated through criteria including unidirectionality; reliability; convergence; and distinction.

Confirmatory factor analysis results for 8 scales of concepts with indicators Figure 2. X^2/df = 1,831 (< 3) is good; CFI = .961 (> .9) is good; RMSEA coefficient = .046 (< 0.6) is good; pclose = .951 (> .05). (Hair et al., 2010, 2014; Hu & Bentler, 1999); The GFI coefficient = .869 (> 0.8) is acceptable (Baumgartner & Homburg, 1996; Doll et al., 1994). The results of CFA factor analysis confirm the unidirectionality of the scale in the research model.

The results of the validity and reliability test. All values Composite Reliability (CR) of 8 scales ranged from .862 to .964 (> 0.7); All values of Average Variance Extracted (AVE) of 8 scales ranged from .560 to .900 (> 0.5); All values Maximum Shared Variance (MSV) from .087 to .263 < Average Variance Extracted (AVE) from .560 to .900 (Hair et al., 2010), Table 4.

Table 4. Checking Convergent and Distinction Validity of Model Fit Indices

Factor construct	No. of items	CR	AVE	MSV	MaxR(H)
Lecturers teaching (LET)	6	0.913	0.638	0.263	0.928
Education program (EDP)	6	0.935	0.744	0.068	0.976
Facilities and teaching facilities (FTF)	5	0.906	0.617	0.096	0.909
Ability to serve (ABS)	4	0.983	0.936	0.087	0.984
Support activities for students (SAS)	5	0.898	0.639	0.235	0.913
Educational activities (EDA)	5	0.862	0.560	0.176	0.892
Quality of higher education services (QHE)	3	0.933	0.776	0.185	0.939
Student satisfaction (STS)	4	0.964	0.900	0.263	0.970

The results of testing the scales also show that Square Root of Average Variance Extracted (SQRTAVE), which has LET = 0.799; EDA = 0.862; EDP = 0.786; STS = 0.967; FTF = 0.799; SAS = 0.748; ABS = 0.881; QHE = 0.949; All 8 scales > Inter-Construct Correlations (Hair et al., 2010), Table 5.

Table 5. The square root of average variance extracted of model fit indices

	LET	EDA	EDP	STS	FTF	SAS	ABS	QHE
LET	0.799							
EDA	-0.019	0.862						
EDP	0.268	-0.035	0.786					
STS	0.191	0.214	0.116	0.967				
FTF	0.284	0.100†	0.190	0.116	0.799			
SAS	0.331	0.060	0.130	0.045	0.282	0.748		
ABS	0.334	-0.015	0.223	0.108	0.186	0.146	0.881	
QHE	0.513	0.261	0.309	0.295	0.485	0.420	0.430	0.949

Thus, the results of the Validity and Reliability test are shown in Table 4, Table 5, which represents the Combined Reliability; Convergent Validity; Discriminant Validity is guaranteed at 8 scales.

Structural Model Testing (SEM) of Student Satisfaction with Higher Education Service Quality

The results of data processing are continued to analyze the factors affecting student satisfaction with the quality of higher education services in Vietnam. The processing results are presented in Table 6, Table 7, and Figure 2.

The model has X^2/df = 1.831; CFI = .961; GFI = .869; RMSEA = .046; pclose = .951.
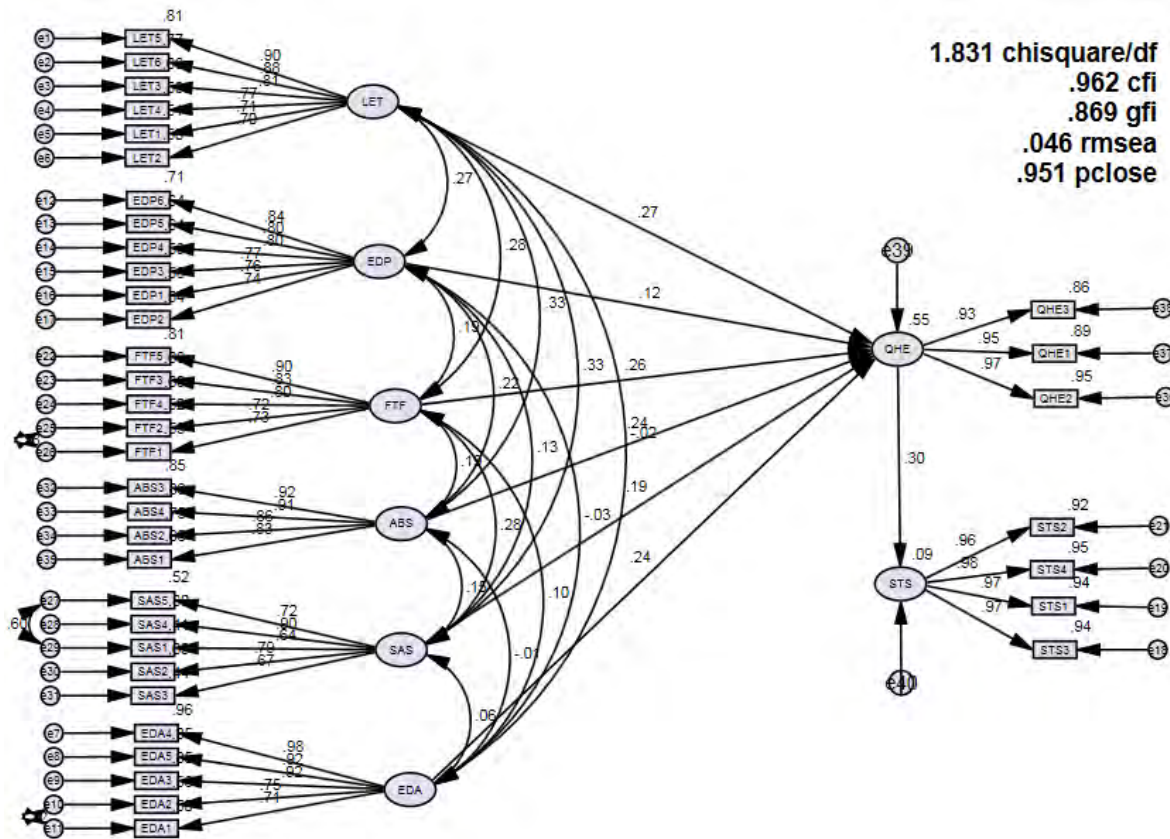
Figure 2. Model results factors affecting student satisfaction with the quality of higher education services

Research data processing results in Table 6 showing values Sig of the scales LET = .000 (< .05), EDP = .004 (< .05), FTF = .000 (< .05), ABS = .000 (< .05), SAS = .000 (< .05), EDA = .000 (< .05), QHE = .000 (< .05). This shows that the impact relationship between the independent variable and the dependent variable is significant.

Results of standardized regression coefficients Table 6, the larger the normalized regression coefficients, the stronger the impact of the corresponding independent variable on the dependent variable (QHE). Factors affecting the quality of higher education services include LET = .267, FTF = .264, ABS = .241, EDA = .237, SAS = .191, EDP = .117.

Table 6. Independent factors directly affect the quality of higher education services

The relationship of direct effects	Estimates	Sig	Standardized estimates
QHE <--- LET	.283	.000	.267
QHE <--- EDP	.149	.004	.117
QHE <--- FTF	.300	.000	.264
QHE <--- ABS	.288	.000	.241
QHE <--- SAS	.261	.000	.191
QHE <--- EDA	.220	.000	.237
STS <--- QHE	.275	.000	.296

Research results R^2 (Adjusted R Square) of QHE = .547, which means that the regression model is suitable. The explanatory regression model is that the independent variables affect 54.7% of the variation of the dependent variable (QHE) in the model. In addition, R^2 (Adjusted R Square) of STS = .088, it is explained that the independent variables affect 8.8% of the variation of the dependent variable (STS) in the model.

Table 7. Factors affect student satisfaction with the quality of higher education services

The relationship of indirect effects	Estimates	Sig	Standardized estimates
STS <--- QHE <--- ABS	.079	.001	.071
STS <--- QHE <--- SAS	.072	.001	.057
STS <--- QHE <--- FTF	.083	.001	.078
STS <--- QHE <--- EDP	.041	.002	.035
STS <--- QHE <--- EDA	.061	.001	.070
STS <--- QHE <--- LET	.078	.001	.079

Research data processing results in Table 7, the independent variables affecting the dependent variable (STS) through the intermediate variable (QHE) have the value Sig ABS = .001, SAS = . 001, FTF = .001, EDP = .002, EDA = .001, LET = .001. This shows that the impact relationship between the independent variables affecting the dependent variable (STS) through the intermediate variable (QHE) is significant.

Results of standardized regression coefficients Table 7, the larger the normalized regression coefficients, the stronger the impact of the corresponding independent variable on the dependent variable (STS). Factors affecting the quality of higher education services include LET = .079, FTF = .078, ABS = .071, EDA = .070, SAS = .057, EDP = .035.

Discussion

Checking Hypothesis 1

Research results show that the scales are reliable and valid for model evaluation. The findings of the study show that there are 6 factors affecting student satisfaction about the quality of higher education services in Vietnam including Lecturers teaching; Facilities and teaching facilities; Ability to serve; Educational activities; Student support activities; Education programs.

Checking Hypothesis 2

Lecturers teaching directly affects the quality of higher education services is 0.267, and the indirect influence on student satisfaction is 0.079 through the quality of higher education services. The improvement of training and retraining of highly qualified and good teaching staff. Encourage and create conditions for lecturers to study in developed countries. Promote scientific research in teaching, integrate scientific research results into teaching (Chandra et al., 2018). Lecturers should invest a lot of time in lectures to attract students (Tran et al., 2020). The application of information technology in teaching will contribute to improving the quality of teaching, creating an interactive educational environment between teachers and learners (Duque & Weeks, 2010). Students are encouraged and facilitated to actively seek knowledge and streamline the self-study process (Cuthbert, 1996).

Facilities and teaching facilities directly affect the quality of higher education services is 0.264, and indirectly affect student satisfaction is 0.078 through the quality of higher education services. According to students' assessment, this is an important factor that affects student satisfaction. It is advisable to invest in and improve the operational efficiency of the library, providing a rich source of learning materials for students (Thanassoulis et al., 2017). Equipped with many tools and equipment for laboratories. Prioritize resources to build students' professional internship models (Luo et al., 2019). The university should focus on further improving the quality of support services and the internet system so that students can better access and search for information, serve their learning and research (Chandra et al., 2018).

The ability to serve directly affects the quality of higher education services is 0.241, and the indirect influence on student satisfaction is 0.071 through the quality of higher education services. The management and training department should actively carry out communication work. Students can receive information quickly, accurately, which is information about learning methods, disseminate rules, processes, and procedures (Le et al., 2021). It will create convenience for students to build a sense of self-discipline. This is the basis to ensure the full and effective implementation of the university regulations, contributing to building a good sense of learning and attitude in students (Michael, 1999).

Educational activities directly affect the quality of higher education services is 0.237, and indirectly affect student satisfaction is 0.070 through the quality of higher education services. Besides the quality factor of higher education being placed on top, the university image marketing factor is increasingly being valued (Chandra et al., 2019). Universities should establish communication and public relations departments to attract students and build brands, which is an important task of universities in Vietnam today. Especially in the context that universities are developing according to self-enrollment and financial autonomy. Communication activities of universities should take place more, increase the number of scholarships for new students, organize open days (for high school students to visit and learn about the university environment), open more international cooperation majors (Koshkin et al., 2017).

Student support activities directly affect the quality of higher education services is 0.191, and indirectly affect student satisfaction is 0.057 through the quality of higher education services. It is advisable to establish a counseling department, a student support center to promptly solve difficulties, problems, and empathize with students. At the same time, the student support department is a place to introduce students to internships and job placements when students graduate (Mwiya et al., 2017). It is advisable to organize dialogue activities with students to promptly capture students' thoughts and opinions (Tran et al., 2018). Create a friendly classroom environment by innovating traditional learning methods into group discussions and presentations. Organize academic classes, clubs to create conditions for students to have many opportunities to interact with many friends (Gruber et al., 2010).

Education programs directly affect the quality of higher education services is 0.117, and the indirect effect on student satisfaction is 0.035 through the quality of higher education services. In order to improve the training program factor, universities should balance the ratio between theory and practice in the training program of each discipline, each

subject (Mallika & Torii, 2019). Based on practical needs, periodically evaluate training programs to design additional programs to ensure integration and training towards social needs (Kevin & Dooyoung, 2002). The training program should aim at three goals (knowledge, skills, self-control, and responsibility) (Naylor et al., 2021). Depending on the different disciplines, the ratio of knowledge and skills is appropriate (James et al., 2008). Should synchronously solve the design steps of career-oriented training programs; development of teaching materials; organize the evaluation of the training process, ensuring continuity and flexibility.

Conclusion

The hypothetical research model is tested on the scales showing the suitability of the factors. The research results have verified the model of factors affecting student satisfaction with the quality of higher education services in Vietnam. In which, there are six factors representing the level of influence from strong to weak including lecturers teaching; facilities and teaching facilities; ability to serve; educational activities; student support activities; education programs. Thus, the results achieved in the study satisfied the set objectives.

The discussion proposed to help higher education administrators understand the relationship between factors including lecturers teaching; facilities and teaching facilities; ability to serve; educational activities; student support activities; education programs to the quality of higher education services in Vietnam, and student satisfaction. The independent factors are taken care of well, which means that the quality of higher education services will increase, and student satisfaction will also increase.

Recommendations

From the findings of the study, several recommendations can be drawn including. Research results have discussed some recommendations to higher education administrators about solutions to improve the quality of educational services, which is an important content to improve student satisfaction. In order to improve student satisfaction with the quality of higher education translation, the university's administrators need solutions to improve the quality of lecturers teaching; facilities and teaching facilities; ability to serve; educational activities; student support activities; education programs. Researchers are advised to expand the research model with a large number of survey samples, and a larger scope to determine the appropriateness of the model in practice. In the context of increasing socialization of higher education, the results of this study will provide meaningful considerations for higher education administrators to find ways to improve service quality in higher education.

Limitations

The study only focused on one university, the sample size was relatively small and a number of other factors could affect student satisfaction. From the above limitations, the authors propose a number of research directions for further studies, which should expand the scope of comparative research between universities. Expand the research sample size and consider adding new factors to the research model to improve the explanatory power of the current model.

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