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Evaluation of Student Satisfaction of the University of Labour and Social Affairs with the Quality of Online Training

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ABSTRACT: The study uses qualitative and quantitative research methods to clarify the relationship between Functional Quality and Technical Quality affecting the Image factor. With a research sample size of 142 valid questionnaires of students participating in online learning along with methods of reliability coefficient analysis, exploratory factor analysis and multivariate regression, the research team has determined to determine the positive relationship of these factors. However, the research objective of the article is to assess the satisfaction of university students of social work with the quality of online training, so we continue to explore the second relationship which is the relationship between factor Image and student satisfaction. The univariate regression analysis method was used, and the results showed that Image and learner's satisfaction have a positive relationship with each other. Finally, based on the research results, we believe that in order to increase the satisfaction of learners, we need to emphasize the group of solutions that increase the evaluation level for the Technical Quality factor.

KEYWORDS: Learners, Online training, University of Labour and Social Affairs, Satisfaction, Vietnam

1. INTRODUCTION

Improving the quality of training is a central issue of concern to the Ministry of Education and Training and the State. Experts in the field of training have affirmed that improving the quality of training is a key model to meet the requirements of fundamental and comprehensive education reform according to Resolution 29 of the Government. Under the influence of the Covid - 19 pandemic, many higher education institutions have timely implemented online training to ensure the learning progress of students. The urgent implementation of online training in the context of the epidemic situation has raised many questions about the quality of online training. The University of Labour and Social Affairs launched online training right after the outbreak of Covid - 19. Through investing in technical facilities and changing from on-the-job training to training that combines both online and on-the-job training, many difficulties for the university's teaching activities have been solved. This study aims to assess the satisfaction of university students of social work with the quality of online training. The results of the research are the basis for us to evaluate and offer solutions to improve the quality of online training and thereby improve student satisfaction.

2. THEORETICAL BASIS

2.1. Online training

Research by Bittner (2000) suggests that online training is increasingly popular. Training has been transferred to a new format through any browser on the internet. Online training allows learners to be location independent, time-independent, extend the delivery of course materials, and control the quality of learning materials. Online training shortens training time and reduces travel costs (pp.45-46). Author Kaeter (2000) believes that online training is a form suitable for learners' needs, easy to update content and highly interactive (pp.120-122). According to the CIO Advertising Supplement [CIO], online training can be delivered in a self-paced format or through a virtual classroom with in-person access (CIO, 2001a, pp.16-18). The Report of the Commission on Technology and Adult Learning (2001) defines online training as “instructional content or learning experiences delivered or enabled by electronic technology”. According to Fee (2005), Online training is all learning activities using the Internet or intranet (para1). Author Cheng (2006) believes that online training is all learning activities with a clear purpose, deployed on the basis of using information technology platforms (pp.265-270). We see that there are many definitions of online training published by the authors in their studies. These concepts all have a common perception that online training is done through the Internet, and learners are freed from place, time, and cost.

2.2. Satisfied

Bachelet (1995) suggested that customer satisfaction is assessed through consumers' feedback on products, services, or themselves characteristics. Reflections of consumers show their level of satisfaction when using products and services. Philip Kotler said that customer satisfaction is the level of the state and feeling of a person that comes from comparing the results obtained from consumer products and services through their own expectations. According to Lien (2016), the level of satisfaction is a function of the difference between the received results and expectations. Customers may have one of the following three levels of satisfaction: If the performance is worse than expected, the customer will not be satisfied; if the performance results match the expectations, the customer will be satisfied; If actual results exceed expectations, customers are very satisfied and delighted (pp.81-89). From the above points of view, we see that the level of satisfaction depends on the difference between the results received and the expectations, if the actual results are lower than the expectations, the customers are not satisfied if the actual results are lower than the expectations. If the actual results are higher than the expectations, the customer will be very satisfied.

2.3. Overview

Research by Artino (2008) on predicting satisfaction with online training based on trust and perception (p.260). The author agrees with many statements that online training can be difficult for learners who lack initiative, motivation and self-learning skills. The author's goal is to clarify the relationship between students' beliefs about motivation, their perception of the learning environment and their satisfaction with online learning. With a research sample size of 646 students who responded to the survey after participating in online learning to answer the survey, the author collected and analyzed data to serve the research objectives. The results of the survey data analysis show that three factors, task value, self-efficacy and perceived instructional quality, have a positive influence on students' satisfaction with online teaching. The author uses the 3-step hierarchical regression method and the final regression model has the extracted variance accounted for 54%. The research results also provide new directions for future research (Artino, 2008, p.260).

Research by Kuo et al. (2013) on predicting student satisfaction in online training. The purpose of the author is to investigate the impact of factors on student satisfaction in the context of online teaching. The analytical method used is multivariate regression analysis to evaluate the impact of four components: Interaction between learners and instructors, between learners and content, confidence in the ability of learners, etc. Internet learning and student interaction and self-regulating learning to online learner satisfaction. The results of data analysis show that there are 3 components that have a positive impact on student satisfaction, namely the interaction between learners and instructors, between learners and content, and confidence in the learner's ability to study on the internet and are good predictors. The other factor is the interaction between students and self-regulated learning does not affect learner satisfaction. At the same time, the author also identifies qualitative factors such as gender, class level and online learning time that affect the interaction between learners and learners, their own capacity on the internet and adjustability (p.16).

Research by Zeng & Wang (2021) assesses students' satisfaction with online learning under the impact of the Covid-19 pandemic (p.182). The author of the article presented the components of the online course. The method of designing an online course from a group of instructors to transition from face-to-face to online learning before the impact of the covid 19 pandemic. With the goal of assessing student satisfaction, the author has performed an assessment. Effective evaluation between online learning results and face-to-face learning results at training institutions. Evaluate and discuss the impact of heterogeneous and heterogeneous components on student satisfaction with online learning. Finally, the author also proposes to change the content of the program in line with online teaching (Zeng & Wang, 2021, p.182).

Research by Parahoo et al. (2016) on building a model to assess student satisfaction in online training (pp.11-19). The author believes that higher education institutions consider that the factor that has the greatest impact on training quality is student satisfaction. The objective of the study is to build a model to assess student satisfaction and identify the factors affecting it. The author uses mixed research methods to explore issues affecting learners' satisfaction through their opinions. The analytical methods used in this paper are group discussion and exploratory factor analysis. The sample of 834 students participating in online learning at the University of Mauritius participated in an online survey. The results of the author's data analysis show that four factors the marketing structure of the university's reputation, facilities, faculty empathy and student-student interaction have a strong impact and are positively related to student satisfaction (Parahoo et al., 2016, pp.1-19).

Research by Ghaderizefreh & Hoover (2018) on learner satisfaction with mixed training both face-to-face and online (p.1393). Online training and training that combines both on-campus learning and e-learning are increasingly popular and attract the attention of researchers, administrators, and educational institutions. Assessing learners' satisfaction with the quality of online training will help educational institutions to adjust and improve the quality of online education, thereby attracting learners. The

author has applied Pekrun's theory of the value of emotional control over achievement to build a toolkit consisting of 8 components that affect learners' perception and satisfaction. The research sample of 29 students who took the mixed course took part in a mandatory survey to assess their online learning characteristics, perceptions and satisfaction with this course. Research results show that the strongest and most positive impact is high readability and illustration. The second factor that brings negative emotions to learners is Difficulty, speed of lectures and lack of clarity (Ghaderizefreh & Hoover, 2018, p.1393)

Research by Herwin et al. (2022) on structural assessment and learner satisfaction measurement model in online training. The research sample used by the author is 149 online students. Data was collected through a survey sent to each student. The author used a structural model to evaluate the relationship of the independent variables as "learning management system", "administrative services", "performance of supporting lecturers" and "satisfaction with of students in learning". The data were analyzed using the Multivariable Structural Equation Model. The results of data analysis have shown that the factor "performance of supporting instructors" has the greatest impact on student satisfaction in online learning. The remaining factors such as "Administrative services" have a positive impact ranked second. The factor "learning management system" does not have a direct impact on student satisfaction, but this factor has an indirect impact on student satisfaction through "faculty performance" and "faculty performance." administrative services" (pp.152-160).

Research by Tuan (2022) on student satisfaction with the quality of online training services. The study was conducted at universities in the Ho Chi Minh City area, Vietnam. The sample of the study consisted of 267 students who had participated in online learning. The author builds a model to evaluate student satisfaction based on the TAM technology acceptance model combined with the theoretical basis of successful information systems. The research results confirm factors such as "Perceived ease of use", "Perceived usefulness", "information quality", "system quality", "instructors", "services", "support", "subjective norm" and "perceived behavioral control" have a positive effect on learners' satisfaction with online learning (pp.42-54).

Nguyen & Doan (2021) Assessing student satisfaction about the quality of university training services by E-learning in the context of Covid-19. The survey subjects were 1,935 students from 10 faculties of Lac Hong University. The results show that there are 5 factors namely "Tangible means", "Empathy", "Prestige", "Service capacity" and "Responsiveness" that have a positive influence on student satisfaction. pellets. Research results also show that E-learning still has many problems in terms of "Internet transmission", "teaching materials", "timetables" and "methods of testing and evaluation" that need to be completed and need to be considered. resolve to ensure consistency as well as ensure the quality of teaching and learning.

We can see, online training has been present for a long time in developed countries due to their stable technical infrastructure and good quality. In Vietnam, the information technology system has developed strongly recently, and online teaching has been initially applied by institutions. Assessing student satisfaction with the quality of online teaching and training is essential, but currently, in Vietnam, there are still quite a few researchers who delve deeply into this content. Therefore, our research is to assess the satisfaction of university students of social work with the quality of online teaching is very meaningful.

3. METHODS

3.1. Research Methods

Research methods at the desk include Comparison, analysis of the theoretical basis of online training, satisfaction and research status on learner satisfaction with the quality of online training.

Field research method: Investigating and surveying by using a questionnaire based on a scale developed by the research team to assess learners' satisfaction with the quality of online training through three components is Technical Quality, Functional Quality and Image Quality.

3.2. Model and hypothesis

The research team used Gronroos's (1984) model of Technical Quality / Functional Quality (1984) to measure the quality of online training services, thereby assessing satisfaction. According to this model, the quality of online training is measured by comparing the value that learners expect before taking online learning and the value that learners receive when they have completed the online course. To measure service quality, Gronroos has introduced 3 factors: Technical Quality, Functional Quality and images. Technical quality describes what the online training service is offered and the quality that learners receive from online training such as quality materials, and subject knowledge about the quality of online classrooms. Functional quality describes how an online training service is delivered or how learners receive technical quality results. The image is built mainly on the technical quality of online training and the functional quality of the online training service. Although the model of Gronroos (1984) has not been tested as widely as the SERVQUAL and SERVPERF models, in online training, technical quality is a very important part. Therefore, the use of this model in our study is completely appropriate.

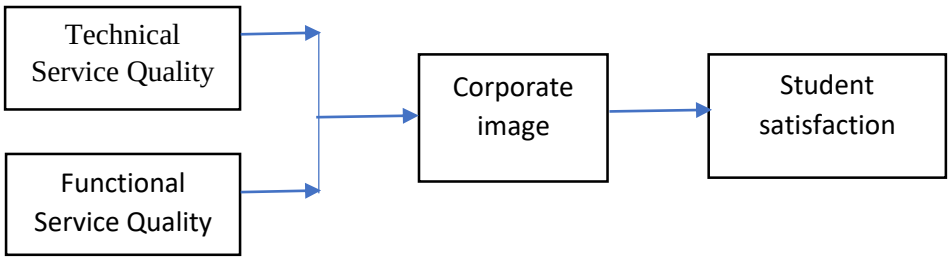

Figure 1: Research model of student satisfaction with the quality of online training

Source: Gronroos (1984)

Research hypothesis

F_(1-1): When the technical quality assessed by the learners increases or decreases, the visual factor will increase or decrease respectively

F_(1-2): When the functional quality assessed by learners increases or decreases, the visual factor will increase or decrease respectively

F_2: When the Image is evaluated to increase or decrease by the technical quality and functional quality, the satisfaction of learners with the quality of online training will increase or decrease respectively

3.3. Scale

The survey to assess the satisfaction of learners with the quality of online training services is measured based on the results of one-on-one interviews, and group discussions with experts. The survey table includes 17 observed variables divided into 4 factors. The technical quality factor includes 4 observed variables, the functional quality factor includes 5 observed variables, the Image factor includes 5 observed variables and finally the dependent factor is student satisfaction including 3 variables. observe. The symbols and contents of these observed variables are listed in detail in Table 1 below. The scale after adjustment includes 17 observed variables, these variables are measured using a 5-point Likert scale (from 1 strongly disagree to 5 completely agree).

Table 1. Student satisfaction scale with the quality of online training

Scales and symbols	Observable variable content
Technical Service Quality (TSQ)	
TSQ1	The school ensures that online classrooms are not hacked
TSQ2	The school equips many online classrooms to meet the learning needs of students
TSQ3	The school helps students feel safe when providing confidential information to the online learning website
TSQ4	The school's online classroom has a stable connection
Functional Service Quality (FSQ)	
FSQ1	The school has created online enrollment instructions to support students
FSQ2	The school's online teaching hours are convenient time frames for students
FSQ3	Relevant departments always support the online learning process
FSQ4	Instructors are always supportive in online teaching situations
FSQ5	Online lecturers provide complete knowledge for students
Corporate image (CI)	
CI1	The school always plans to teach online and strictly follows the plan
CI2	The school supports students and provides specific instructions before participating in online learning
CI3	The school always provides an online teaching schedule to each student
CI4	Online teachers always make sure to enter the class in accordance with the regulations
CI5	The school always checks and monitors the online teaching of teachers
Student satisfaction (SAT)	

SAT1	I am satisfied with the performance achieved from the e-learning service
SAT2	I am satisfied with the experience of using the online learning service
SAT3	Using an online learning service is a correct decision

Source: Construction of the research team

4. RESEARCH RESULTS

We used a convenient sampling method by distributing the survey directly to students of the information technology department. The number of survey questionnaires distributed was 180, and the number of votes collected was 163. After the research team removed the invalid answer sheets due to missing answers, 142 votes were left to be included in the analysis.

4.1. Analyze the scales using Cronbach's alpha

Calculating the reliability of the scales using alpha coefficients with the procedure of removing variables allows us to evaluate the goodness of the initial scales, as well as evaluate the contribution of each indicator to the scale whether it is significant or not.

Analysis of Cronbach's alpha coefficient for the "Technical Quality" Scale

The reliability of the scale “Technical quality” with alpha coefficient = 0.854 is very good (Trong & Ngoc, (2008). All indicators have a common contribution to the reliability of this scale.) The Item-Total Correlation (minimum) of the observed variables of the Technical Quality scale are all guaranteed to be >0.5 and suitable for the research purpose. Cronbach's Alpha if Item Deleted (maximum) data are all less than 0.854, ensuring that both conditions are simultaneously satisfied for the retention of the observed variable for the following analyses.

Table 2. Analysis results of Cronbach’s alpha coefficient for the “Technical Quality” Scale

Cronbach's Alpha		Cronbach's Alpha Based on Standardized Items		N of Items	
,854		,854		4	
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TSQ1	10,93	6,165	,653	,449	,832
TSQ2	10,86	5,654	,755	,571	,788
TSQ3	10,93	6,392	,668	,466	,826
TSQ4	10,95	6,005	,709	,509	,808

Source: Data processing results of the research team

Analysis of Cronbach's alpha coefficient for the "Functional Quality" Scale

The reliability of the "Functional Quality" scale with alpha coefficient = 0.918 is very good (Trong & Ngoc, (2008). It can be seen that the smallest total correlation of the observed variables of the Functional Quality scale can be seen. All functions ensure that the level >0.5 is suitable for the research purpose The data on Cronbach's Alpha if Item Deleted (the largest) are smaller than the confidence coefficient, ensuring that both conditions are satisfied at the same time for retention of observed variables for the following analysis.

Table 3. Analysis of Cronbach’s alpha coefficient for the Scale of “Functional Quality”

Cronbach's Alpha		Cronbach's Alpha Based on Standardized Items		N of Items	
,918		,919		5	
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
FSQ1	14,68	13,710	,769	,668	,904
FSQ2	14,73	12,992	,834	,744	,891
FSQ3	14,65	14,570	,745	,594	,909
FSQ4	14,59	13,534	,786	,715	,901
FSQ5	14,70	13,458	,818	,691	,894

Source: Data processing results of the research team

Cronbach's alpha coefficient analysis for the "Image" Scale

The reliability of the "Image" scale with alpha coefficient = 0.896 is very good (Trong & Ngoc, 2008). The corrected Item-Total Correlation (minimum) of the observed variables of the Image scale is guaranteed to be >0.5 in accordance with the research purpose. The data on Cronbach's Alpha if Item Deleted (the largest) are all less than 0.896, ensuring concurrently satisfying both conditions for keeping the observed variable for the following analyses.

Table 4. Analysis results of Cronbach's alpha coefficient for the "Image" Scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,896	,896	5

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CI1	14,87	9,890	,654	,470	,893
CI2	14,94	9,472	,732	,543	,876
CI3	14,89	8,796	,765	,647	,870
CI4	14,95	9,054	,787	,671	,864
CI5	14,92	9,184	,787	,623	,864

Source: Data processing results of the research team

Analysis of Cronbach's alpha coefficient for the scale due to "Student satisfaction"

The reliability of the scale "Student satisfaction" with alpha = 0.857 is very good. In particular, all indicators have a common contribution to the reliability of this scale.

Table 5. Analysis results of Cronbach's alpha coefficient for the Scale of "Student satisfaction"

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,857	,857	3

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SAT1	7,77	2,644	,734	,549	,796
SAT2	7,64	2,672	,694	,484	,832
SAT3	7,61	2,381	,765	,589	,766

Source: Data processing results of the research team

4.2. Exploratory factor analysis

Exploratory factor analysis [EFA] is performed in two steps. In the first step, each scale component that meets the criteria at Cronbach's alpha analysis is the object of EFA analysis to select indicators with weights converging on the first factor to be drawn. In this step, the principle components procedure and Varimax factor rotation are used (Trong & Ngoc, 2008). In the second step, all the indicators selected in the first step are included in a one-time analysis with the same method. To assess the appropriateness of exploratory factor analysis, the Kaiser - Mayer - Olkin index must be within the range from 0.5 to 1 to be appropriate (Trong & Ngoc, 2008). In addition, for the convenience of reading analysis results, the factor weights are arranged in descending order and values below 0.5 will not be displayed on the report table.

EFA analysis for "Technical Quality" scale

Table 6. EFA exploratory factor analysis for the "Technical quality" scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						,810
Bartlett's Test of Sphericity			Approx. Chi-Square			242,164
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,783	69,582	69,582	2,783	69,582	69,582

2	,519	12,964	82,547			
3	,377	9,415	91,962			
4	,322	8,038	100,000			
Extraction Method: Principal Component Analysis.						

Source: Data processing results of the research team

The EFA results show that all four indicators of the "Technical Quality" scale converge on a common factor, with all factor weights being 0.5. So, as a rule, all four indicators that create a common factor are kept in the next step of the analysis.

EFA analysis for the "Functional Quality" scale

Table 7. EFA analysis for the "Functional Quality" scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				,827		
Bartlett's Test of Sphericity			Approx. Chi-Square	523,805		
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,774	75,474	75,474	3,774	75,474	75,474
2	,492	9,843	85,316			
3	,349	6,977	92,293			
4	,237	4,739	97,033			
5	,148	2,967	100,000			
Extraction Method: Principal Component Analysis.						

Source: Data processing results of the research team

EFA results show that all 5 indicators of the "Functional Quality" scale, which explain 75.474%, converge on only 1 common factor, with all factor weights being 0.50. Therefore, all 5 indicators are kept for the next analysis step.

EFA analysis for the "Image" scale

Table 8. EFA analysis for the "Image" scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				,857		
Bartlett's Test of Sphericity			Approx. Chi-Square	416,328		
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,541	70,816	70,816	3,541	70,816	70,816
2	,559	11,182	81,998			
3	,386	7,718	89,716			
4	,293	5,867	95,583			
5	,221	4,417	100,000			
Extraction Method: Principal Component Analysis.						

Source: Data processing results of the research team

EFA results show that all 5 indicators of the "Image" scale explain 70.816%, all converge on only 1 common factor, with all factor weights being 0.50. Therefore, all 5 indicators are kept for the next analysis step.

EFA analysis for the scale "Student satisfaction"

Table 8. EFA analysis results for the scale "Student satisfaction"

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			,726
Bartlett's Test of Sphericity		Approx. Chi-Square	191,489
Component	Initial Eigenvalues	Extraction Sums of Squared Loadings	

	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,333	77,772	77,772	2,333	77,772	77,772
2	,387	12,911	90,683			
3	,280	9,317	100,000			
Extraction Method: Principal Component Analysis.						

Source: Data processing results of the research team

The EFA results show that all 3 indicators of the "Student satisfaction" scale, which explain 77.772%, all converge on only one common factor, with all factor weights being 0.50. Therefore, all 3 indicators are kept for the next analysis step.

EFA analysis for all scales

The above EFA analysis results for each scale do not remove any indicators, so the input for the general EFA analysis includes only 14 indicators. The results of the analysis are shown in Table 9.

Table 9. EFA analysis results are common to all scales

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.									,881
Bartlett's Test of Sphericity			Approx. Chi-Square						871,523
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,477	60,858	60,858	5,477	60,858	60,858	3,687	40,970	40,970
2	1,150	12,778	73,636	1,150	12,778	73,636	2,940	32,667	73,636
3	,556	6,176	79,812						
4	,465	5,161	84,973						
5	...	...	...						
9	,141	1,562	100,000						

Extraction Method: Principal Component Analysis.

Source: Data processing results of the research team

EFA results for all explanatory scales are 73.636%, and all indicators converge into 2 groups of factors, with all factor weights being 0.50. The KMO index is 0.881. Therefore, all these indicators are kept for the next analysis step. According to the results of the factor rotation matrix in Table 11, the scale is kept unchanged, no new factors are formed. Therefore, the new scale components are used similarly to the original construction scale.

Table 11. Rotated Component Matrix

Component	1	2
Observed variables	FSQ4, FSQ5, FSQ2, FSQ1, FSQ3	TSQ3, TSQ4, TSQ2, TSQ1
Weight	0,869; 0,866; 0,852; 0,751; 0,704	0,850; 0,798; 0,758; 0,692

Source: Data processing results of the research team

4.3. Linear regression

To evaluate the relationship and impact direction of the group of technical quality and functional quality components on the Image component, we use the multivariate regression analysis method. Univariate regression equation to determine the impact of the Image factor on student satisfaction with the quality of online training.

Multivariable linear regression

The multivariable regression equation showing the relationship between the image factor and the technical and functional quality factors has the following form:

$Y = a_0 + a_1X1 + a_2X2$

In there :

Y : The dependent variable represents the predictive value of the Image

a_0, a_1, a_2, : Are the regression coefficients

X1, X2: Are the independent variables in order: technical quality component, functional quality component

The results of the multivariate regression analysis are as follows:

Table 12. Linear regression results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,746[a]	,556	,550	,50442

Source: Data processing results of the research team

We see that Adjusted R square = 0.550 (>0.5) indicates that 2 components of technical quality and functional quality influence the image quality of online teaching at the University of Labor and Social Affairs. With the adjusted R = 0.556 results, it shows the appropriateness of the regulatory assurance model. To test whether the model can be inferred for the real population, we must test the model's goodness of fit.

Table 13. ANOVA test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44,340	2	22,170	87,133	,000[b]
	Residual	35,367	139	,254		
	Total	79,707	141			
a. Dependent Variable: CI						
b. Predictors: (Constant), TSQ, FSQ						

Source: Data processing results of the research team

The results of the ANOVA test showed that the F-test value reaches the value of 87,133 at the significance level sig = 0.000b< α = 0.1. Thus, we accept the hypothesis that the two independent components of technical quality, functional quality and the dependent variable component are Images that each have a positive relationship with each other. Therefore, the model fits the data set and can be generalized to the population.

Table 14. Results of multivariate regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,075	,206		5,223	,000
	FSQ	,185	,062	,225	3,000	,003
	TSQ	,542	,071	,578	7,690	,000
a. Dependent Variable: CI						

Source: Data processing results of the research team

From the table of regression results, we see that the component that has the greatest influence on the Image factor is "Technical Quality" with beta = 0.542, and the "Functional Quality" factor has a lower influence with beta = 0.185. So the regression equation for the unnormalized Beta coefficients is as follows:

CI = 1.075 + 0.542TSQ + 0.185FSQ

Univariate regression equation

The univariate regression model analyzes the dependence of a dependent variable on an independent variable. In this study, simple linear regression represents the relationship between the dependent variable "Student satisfaction" and the independent variable "Picture". The regression model is shown below:

SAT = a_0 + a_1CI

Where: a_0: Free parameter (intercept coefficient) and a_1: Slope
The results of the regression analysis are as follows:

Table 15. Linear regression results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,719[a]	,517	,513	,53978

Source: *Data processing results of the research team*

We see that Adjusted R square = 0.517 (>0.5) indicates that 51% of the variability of learner satisfaction is explained by the Image component. Thus, satisfaction and Image are quite closely correlated. However, this fit is only true for the sample data. To test whether the model can be deduced for the real population, we must test the model's goodness of fit:
Hypothesize:
Ho: Image and student satisfaction have no relationship
H1: Image and student satisfaction are related
Choose significance level = 0.05 corresponding to 95% confidence level.

Table 16. ANOVA test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43,595	1	43,595	149,626	,000[b]
	Residual	40,791	140	,291		
	Total	84,386	141			
a. Dependent Variable: SAT						
b. Predictors: (Constant), CI						

Source: Data processing results of the research team

The results of the ANOVA test show that the F-test value is 149,626 at the significance level sig = 0.000 < α = 0.1. Thus, we accept the hypothesis that Image and student satisfaction have a positive relationship with each other. Therefore, the model fits the data set and can be generalized to the population.

Table 17. Results of univariate regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,081	,230		4,701	,000
	CI	,740	,060	,719	12,232	,000
a. Dependent Variable: SAT						

Source: Data processing results of the research team

From the table of regression results, we see that the influence of the Image factor on learner satisfaction is 0.740. So the univariate regression equation is as follows:
SAT = 1.081 + 0.74 CI

5. DISCUSSION

The results of the multivariate regression model show that, if other conditions are unchanged, the technical quality factor increases (decreases) by 1 point, and the image factor increases (decreases) by 0.542 points. Similarly, the functional quality factor increased (decreased) by 1 point, and the visual factor increased (decreased) by 0.185 points. In the univariate regression model, the Image factor increased (decreased) by 1 point, and the student's satisfaction increased (decreased) by 0.74 points. From the above regression analysis results, in order to improve learners' satisfaction with the quality of online training, we need to adjust

two components, technical quality and functional quality. In particular, when looking for solutions to enhance student satisfaction, we need to emphasize the solution group for the Technical Quality component.

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