



## Research Article

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# Switching Intention of Gen Z Students in E-Learning Program

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## Abstract

The research aimed to explore factors that impact the switching behavior of Gen Z students who are studying the eLearning program and suggesting factors to improve the teaching quality in the eLearning program in universities in Vietnam. The principal methodology of research was a mixed method by analyzing 1,085 respondents. The Likert 5-points and SmartPLS 4.0. were used to examine the measurement and structural models, and hypotheses. The findings of the research represented the influence of eLearning quality on student satisfaction and switching intention, as well as the moderating effect of transnational education and the mediating effect of student satisfaction in the path model. The research encourages managers to provide preferable policies to reduce the intention to switching of students. It also clarified the moderating role of transnational education. It could assess the level of influence on the relationship between student satisfaction and switching intention. The further studies should evaluate the role of switching intention, moderation role of transnational education in field of eLearning program.

**Keywords:** switching intention, satisfaction, eLearning, transnational education

## 1. Introduction

According to the Valverde-Berrocoso et al. (2020), COVID-19 outbreaks in 2019 made 1,5 billion students and 63 million institutions worldwide have to transmit from face-to-face to online teaching and the strengths and weaknesses of education systems before digitalization challenges. Besides the development of information and communication technology caused eLearning to become one of the most favorable teaching methods in higher education institutions in the world (Ntshwarang et al., 2021). At the organizational level, eLearning is known as a provisional plan to continue the special learning progress during social distancing because of COVID-19 (Roman & Plopeanu, 2021). Waheed

et al. (2016) claimed that the education industry has a new trend towards online learning in accordance with the development of information technology. Müller et al. (2021) claimed that eLearning had some positive points which were related to flexibility independent learning, self-reflection, enhancing the teaching methods, and overwhelming boundary interactions between instructors and learners. Online teaching and learning activities are receiving a lot of attention from many countries around the world and especially the extremely strong development of Korea, Australia, Canada and the United States (Vu Huu Duc, 2020). Higher education institutions participated in a variety of technological development processes. According to experts, eLearning significantly changes to the structure, organization, and delivery of education. All factors in the learning process are increasingly utilizing online learning environments (Madleňák et al., 2021). Because of the opportunities of eLearning program impact the education industry, higher education institutions should prepare innovation policies to adapt to convert as well as competition toward online teaching and learning practices.

Particularly, Vietnam's higher education conformed with challenges and risks as "brain drain" because of the internationalization and globalization process (Tran Thi Tuyet, 2014). Besides, joining the WTO in 2007 had a significant impact on the internationalization process of Vietnam higher education system. The promotion of free trade under the WTO and GATS has encouraged deregulation and deregulation in cross-border education in the belief that it will contribute to economic development worldwide. According to UNESCO-CEPES (1999), transnational education is defined as all types and modes of delivery of higher education study programs or sets of courses or education services (including distance education) in which the learner lives in a different country from the nation where the awarding organization is based. The eLearning program is known as one of transnational education types (Huang, 2003). Vietnam, China, Europe, Singapore, Hongkong, and Malaysia are the countries which attracted the form of transnational education for fee (Croucher et al., 2021). Therefore, in the current situation of economic intergration, Vietnam education is likely to be competitive and learners will switch programs if the eLearning programs cannot adapt with the student expectations. As more and more higher education institutions around the world adopt eLearning programs, these institutions already engaged in eLearning programs continue to expand their online offerings (Pedro & Kumar, 2020).

The study aimed to explore the factors that impact the switching intention of eLearning students, suggest practical implications for improving the teaching and learning quality of eLearning programs in Vietnam's higher education institutions.

## 2. Research Hypotheses

### 2.1 *The impact of eLearning quality and student satisfaction*

According to Dayana Fozeli et al. (2022), student satisfaction is one of the key indicators that reflects how well students use these eLearning systems. Meanwhile, Chopra et al. (2019) claimed that eLearning quality is a second-order factor and includes service quality, information quality, and system quality. Besides, both the subjective experience of the service user and the objective quality of the service provider determine customer satisfaction, educational outcomes should be evaluated in a neutral way based on customer satisfaction (Han & Sa, 2022). Therefore, for online training and teaching activities, eLearning quality is one of the prerequisite factors for measuring customer satisfaction.

H<sub>1</sub>. eLearning has a positive influence on student satisfaction.

### 2.2 *The impact of university image and student satisfaction*

An image is a personal impression of an identified object that can be clearly recorded due to the lack of information the person received from an appropriate organization (Chandra et al., 2019). Previous

studies assumed that satisfaction was an antecedent of corporate image and then established a research model by assessing behavioral intentions (Brown & Mazzarol, 2009). Organizations look for customer behavioral motivations through satisfaction and company image, as well as propose solutions to increase the number of customers and advertising in the market (Ni et al., 2020). According to the results of Alves & Raposo (2010), university image has a strong influence on student satisfaction.

H2. University image has a positive influence on student satisfaction.

### 2.3 *The impact of student satisfaction and switching intention*

Switching behavior is defined as the act of being loyal to one type of product but switching from one service provider to another due to dissatisfaction or any other related issue (Keaveney & Parthasarathy, 2001). Additionally, Bansal & Taylor (1991) represented service provider switching involves replacing the current service provider with another service provider. Hsieh et al. (2012) claimed that switching intention is opinions of customer after using the product or service. However, previous researches of Dey et al. (2020), D. M. Gray et al. (2017), and Sánchez García & Curras-Perez (2020), customer satisfaction has a negative effect on switching intention. The research focuses on the relationship between student satisfaction and switching intentions.

H3. Student satisfaction has a negative influence on switching intention.

### 2.4 *Moderation of transnational education*

According to Croucher et al. (2021), Australia has a long-standing reputation as an education exporter, and many Australian providers operate in a number of countries, providing higher education with quality through various transnational education agreements. There are other potential markets, including Vietnam, that are identified to have significant growth; specifically, in 2018, Vietnam had 6,972 students studying with a supplier from Australia. Not only that, Knight & McNamara (2014) believed that transnational education also helps learners gain prerequisite working skills to develop future career and brand reputation in foreign countries. Transnational educational institutions are one of the important reasons why learners make decisions to participate in transnational education programs. Transnational educational programs play a moderating role in assessing the relationship between learner satisfaction and the intention to switch to another educational program, especially in the transformed global context.

H4. Transnational education has a positive moderation impact on the relationship between student satisfaction and switching intention.

## 3. Methodology

The primary objective of the research is to explore and evaluate the ability to switching another eLearning programs. To achieve this objective, the two-phase approach was applied. The first one was to explore the factors influencing switching intention and suggest the preferable scale for creating the questionnaire. In the second phase, 1,085 students from universities which had eLearning programme in Vietnam were interviewed by Google form during February to March 2024. The structured questionnaire comprised two sections. The first section included the personal information of respondents. Section 2 consisted of dimensions impact the switching intention. The items in the section 2 were measured on a five-point Likert scale from strongly disagrees to strongly agrees. The valid data has been analyzed by using the SMARTPLS 4.0.

## 4. Results

There are two stages: the method of embedding the higher-order latent variable into the two stages proposed by Ringle et al. (2012) and the method of separating the higher-order latent variable from

the two stages proposed by Becker et al. (2012). According to Cheah et al. (2019), both versions yield the same results. Therefore, the authors decide to apply the two-stage method of Ringle et al. (2012) to export for research purposes.

In the first stage, the authors determine the value of eLQ with the path model as below.

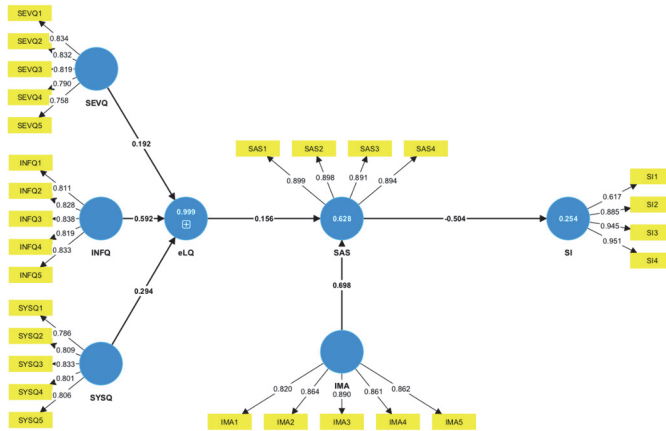


Figure 1: The first stage path framework (Authors, 2024)

In the next phase, after completing the path model as above, the author performed PLS model estimation to obtain the latent variable values INFQ, SYSQ, and SEVQ. The authors duplicated the data into the original data to perform phase 2 with the official path framework.

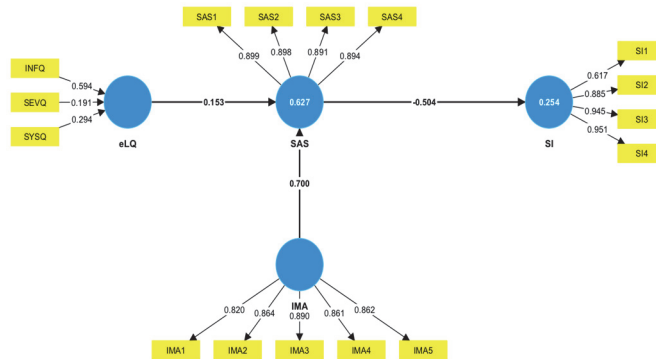


Figure 2: The official path framework (Authors, 2024)

#### 4.1 Evaluation of reflective measurement model

##### 4.1.1 Construct reliability and validity

The internal consistency reliability should be evaluated by the composite reliability and Cronbach's alpha. Addition, consider Cronbach's alpha as the lower bound and composite reliability as the maximum limit of internal consistency reliability Hair et al. (2017). F. Hair et al. (2014) suggested that

the value of Cronbach's alpha and composite reliability should be higher than 0.5. Cronbach's alpha value of indicators were from 0.970 to 0.954. While the Composite reliability value of indicators were from 0.956 to 0.978 which adapted with the standardization to evaluate the internal consistency. Therefore, the official path model met the requirement of construct reliability and validity.

**Table 1.** Construct reliability and validity (Authors, 2024)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
IMA	0.954	0.956	0.965
SAS	0.965	0.965	0.974
SI	0.970	0.971	0.978

#### 4.1.2 Convergent validity

According to official path model, IMA, SAS, and SI are three indicators which create the reflective model. Hair et al. (2017) suggested that outer loadings and the average variance extracted (AVE) to assess the convergent validity of reflective constructs. The outer loadings should be higher than 0.7 in individual item (F. Hair et al., 2014) and the AVE should be higher than 0.5 to assess whether the indicators have value. However, As stated by Table 2 , AVE of IMA was 0.739, SAS was 0.802, and SI was 0.740, and TRA was 0.875 that all the indicators were higher preferred value of 0.5.

Moreover, the outer loadings of indicators were higher than 0.7 which were from 0.820 to 0.951. To be more specific, IMA has 5 observed variables that value of outer loadings were from 0.820 to 0.890. Besides, the next indicator is SAS and has 4 observed variables that the value of outer loadings were from 0.891 to 0.899. The final indicator of reflective model is SI and also has 4 observed variables that the value of outer loadings were from 0.885 to 0.951. In this vein, the outer loading of SI<sub>1</sub> was 0.617 lower than 0.7. However, Hulland (1999) claimed that the outer loadings can be able to under 0.7 when it is the research in social science studies. While Junaid Nadvi (2022) represented that the human behavior is also known as the social science research. Therefore, the outer loading of SI<sub>1</sub> was lower than 0.7 but still adapted to the requirement of convergent validity in this situation. The outer loadings of SYSQ, INFQ, SEVQ were 0.869, 0.889, 0.965, which were greater than 0.7. Moreover, the indicator TRA had 4 variables, and outer loadings of these variables were 0.943, 0.895, 0.967, 0.936 which were higher than 0.7. Therefore, according to the results of AVE and outer loadings, the convergent validity of reflective model was valid and able to assign to analyze the structural evaluation model.

**Table 2.** Convergent validity (Authors, 2024)

	Outer loadings	Average variance extracted (AVE)
<b>IMA</b>		0.739
IMA <sub>1</sub>	0.820	
IMA <sub>2</sub>	0.864	
IMA <sub>3</sub>	0.890	
IMA <sub>4</sub>	0.861	
IMA <sub>5</sub>	0.862	
<b>SAS</b>		0.802
SAS <sub>1</sub>	0.899	
SAS <sub>2</sub>	0.898	
SAS <sub>3</sub>	0.891	
SAS <sub>4</sub>	0.894	
<b>SI</b>		0.740
SI <sub>1</sub>	0.617	
SI <sub>2</sub>	0.885	
SI <sub>3</sub>	0.945	
SI <sub>4</sub>	0.951	

	Outer loadings	Average variance extracted (AVE)
eLQ		
SEVQ	0.869	
SYSQ	0.889	
INFQ	0.965	
TRA		0.875
TRA1	0.943	
TRA2	0.895	
TRA3	0.967	
TRA4	0.936	

4.1.3 Discriminant validity

Hair et al. (2014) represented that discriminant validity refers to how well a concept measures what it is supposed to measure and how empirically different it is from other constructs. Cross loadings is the first approach, and the following step is Fornell - Lacker which are two main ways to evaluate the discriminant validity in the traditional way (Hair et al., 2017). However, Hair et al. (2019) suggested that the researchers should be applied more the Heterotrait - Monotrait Ratio (HTMT) to assess the discriminant validity because (Hair et al. (2017) explained that the cross loadings cannot assess the lack of discriminant validity when two different constructs are totally correlated and the Fornell - Lacker criterion is not well. The HTMT is preferred by Henseler et al. (2015) which is known as the average value of the item correlations across constructs relative to the mean of the average correlations of indicators evaluating the similar construct (Hair et al., 2017). The discriminant validity occurs when the values of HTMT are large (Hair et al., 2019). Henseler et al. (2015) proposed that the value of HTMT should not exceed 0.9 or 0.85, which depends on the constructs. Therefore, the authors determined HTMT is the value to assess the discriminant validity of path model. The HTMT of all indicators was under 0.9, indicating that the path model did not occur in the discriminant situation of all correlations and the path model continued to examine the following structural model.

Table 3. Heterotrait - Monotrait ratio (HTMT) (Authors, 2024)

	IMA	SAS	SI
IMA			
SAS	0.852		
SI	0.483	0.557	

4.2 Evaluation of formative measurement model

4.2.1 Collinearity statistics (VIF)

Hair et al. (2017) suggested that when measurement the collinearity statistics of formative measurement model should be analyzed by outer model. To measure the collinearity, the variance inflation factor (VIF) is applied for. The value of VIF should be around 3 to 5 which claims the ability of collinearity problems exist, however, the VIF value should be lower than 3 (Hair et al., 2019). According to the path model, the SEVQ, SYSQ, and INFQ are exogenous latent variables, outer model is utilized to measure VIF. The VIF value of SEVQ and SYSQ were 2.908 and 2.804 which were under 3 to show the inability of collinearity in two constructs. While the VIF of INFQ was 3.063 nearly 3, this value represented that the collinearity statistics of this construct met the requirement.

Table 4. VIF - Outer model (Authors, 2024)

	VIF
SEVQ	2.908

	VIF
SYSQ	2.804
INFQ	3.063

4.2.2 Outer weights

The indicators' weights should be evaluated in the following step. The outer weights are the results of analyzing the multiple regression with the latent variables scores as the independent variables, and the formative indicators as the independent variables (Hair et al., 2017). The p-value should be under 0.5 to represent the significance of outer weights (Hair et al., 2019). These results showed that the evaluation of the relevance of all indicators was significant, so the formative measurement model reached the requirement for analysis, and the authors could assess the structural model in the following step.

Table 5. Outer weights (Authors, 2024)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
IMA <sub>1</sub> ← IMA	0.820	0.819	0.013	63.171	0.000
IMA <sub>2</sub> ← IMA	0.864	0.864	0.010	85.135	0.000
IMA <sub>3</sub> ← IMA	0.890	0.890	0.008	105.453	0.000
IMA <sub>4</sub> ← IMA	0.861	0.860	0.011	80.046	0.000
IMA <sub>5</sub> ← IMA	0.862	0.862	0.010	84.742	0.000
INFQ → eLQ	0.965	0.962	0.012	77.900	0.000
SAS <sub>1</sub> ← SAS	0.899	0.899	0.007	124.019	0.000
SAS <sub>2</sub> ← SAS	0.898	0.898	0.007	122.831	0.000
SAS <sub>3</sub> ← SAS	0.891	0.891	0.008	106.393	0.000
SAS <sub>4</sub> ← SAS	0.894	0.893	0.008	109.841	0.000
SEVQ → eLQ	0.869	0.866	0.028	31.243	0.000
SI <sub>1</sub> ← SI	0.617	0.616	0.025	24.314	0.000
SI <sub>2</sub> ← SI	0.885	0.884	0.010	84.280	0.000
SI <sub>3</sub> ← SI	0.945	0.945	0.004	234.902	0.000
SI <sub>4</sub> ← SI	0.951	0.951	0.004	238.338	0.000
SYSQ → eLQ	0.889	0.887	0.025	36.100	0.000

4.3 Evaluation of structural model

4.3.1 Collinearity statistics (VIF)

To assess the structural model, the authors assessed the collinearity statistics. The collinearity examine the The inner model is applied for examine the structural model that evaluates the impact between the constructs (Hair et al., 2017). Hair et al. (2019) claimed that collinearity must be tested to ensure that it does not skew the regression findings. This procedure is similar to evaluating formative measurement models, except that the VIF values are calculated using the latent variable scores of the predictor constructs in a partial regression. According to the Table 6, the VIF of the relationship between IMA and SAS and the relationship between eLQ and SAS was 1.396 were under 3.000, and value of the relationship between SAS and SI was 1.000 lower than 3.000, which ideally results in the absence of collinearity.

Table 6. VIF – Inner model (Authors, 2024)

	VIF
IMA → SAS	1.396
SAS → SI	1.000
eLQ → SAS	1.396

#### 4.3.2 R<sup>2</sup> value

After assessment the discriminant validity, the authors continued on evaluate the coefficient of determine (R<sup>2</sup> value) to measure the structural model (Hair et al., 2017). The R<sup>2</sup> value is applied for assess the variance which is interpret in individual of the endogenous variables as well as the framework's explanatory power (Shmueli & Koppius, 2010). Rely on the rule of thumb, the value of R<sup>2</sup> should be 0.75, 0.50, 0.25, seperately, expressing substantial, moderate, or weak levels of predictive accuracy (Hair et al., 2011; Henseler et al., 2009). The R<sup>2</sup> of SAS was 0.627 greater than 0,50 which explained that the level of predictive accuracy was moderate. While the R<sup>2</sup> value of SI was 0.254 which represented that the level of predictive accuracy in structural model was weak.

**Table 7.** R<sup>2</sup> value (Authors, 2024)

	R-square	R-square adjusted
SAS	0.627	0.626
SI	0.254	0.254

#### 4.3.3 Effect size (f<sup>2</sup>)

The effect size f<sup>2</sup> measures an exogenous variable's contribution to an endogenous latent construct's R<sup>2</sup> value (Hair et al., 2017). Therefore, the effect size is done after the assessment of coefficient of determine. When comparing the path coefficient and f<sup>2</sup> effect sizes, the rank order of the predictor constructs' importance in explaining a dependent construct in the structural model is frequently the same (Hair et al., 2019). As stated by thumb rule, the f<sup>2</sup> value should be greater than 0.02, 0.15, and 0.35 which seperately explained for small, medium and large of effect size (Cohen, 1988). The effect size of the independent variable IMA on SAS was 0.940, which claimed that the impact of IMA on SAS was large. While the effect sizes of SAS and SI were 0.341, the influence of SAS on SI was medium. The f<sup>2</sup> value of eLQ and SAS was 0.045 greater than 0.02, so the eLQ had a small effect on SAS, which was a dependent construct.

**Table 8.** Effect size (Authors , 2024)

	f-square	Effect levels
IMA → SAS	0.940	Large
SAS → SI	0.341	Medium
eLQ → SAS	0.045	Small

#### 4.3.4 Q<sup>2</sup> value

After assessment the coefficient of determination, the authors continued on evaluating to predictive accuracy of the path model. The blindfolding technique in PLS-SEM involves removing single points from a data matrix, replacing them with the mean, and estimating model parameters (Rigdon, 2014; Sarstedt et al., 2014). Exogenous constructs with Q<sup>2</sup> values greater than 0 are predictive of the endogenous construct being studied (Hair et al., 2017). According to the rule of thumb, the Q<sup>2</sup> values should be greater than 0, 0.25 and 0.50 to represent that an exogenous variable has the small, medium and large predictive relevance for a definite endogenous variable in the path model (Hair et al., 2017; Hair et al., 2019). The Q<sup>2</sup> value of SI was 0.186, indicating that the SI had small predictive relevance. While the Q<sup>2</sup> value of SAS was 0.5, this exogenous construct had a large predictive relevance for a certain endogenous construct.



**Table 9.** Q<sup>2</sup> value (Authors, 2024)

	Q <sup>2</sup> (=1-SSE/SSO)	Predictive levels
SI	0.186	Small
SAS	0.500	Large

#### 4.3.5 Hypotheses tests

The following step assesses the relationships' statistics in the path model. The meaning of the path coefficients is similar to that of the formative indicator weights. To determine the significance of route coefficients, researchers often use bootstrapping with values ranging from -1 to +1 (Nitzl, 2014). In addition, they can understand a construct's indirect influence on a specific target construct via one or more intervening constructs. Path coefficient values vary from +1 to -1, with +1 signifying strong positive correlations and -1 showing strong negative relationships (Hair et al., 2014). Almost researchers choose p-values to evaluate the significance levels. A p-value is an indicator of erroneously dismissing an appropriate null hypothesis. When using a 5% significance threshold, the p value must be less than 0.05 in order to determine that the association under examination is significant at the 5% level (Hair et al., 2017).

The p-values of the hypotheses were 0.000 lower than 0.500, which claimed that all of the relationships were supported. However, the effect levels among the variables in the relationships were contrasting. IMA had the strongest and most positive influence on the SAS because the path coefficient value was 0.700. In the following hypothesis, SAS had a negative impact on the SI, and a path coefficient value of -0.504 was presented. While the eLQ had a positive influence on the SAS, which was 0.153 of the path coefficient value.

**Table 10.** Hypotheses tests (Authors, 2024)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values	Decision
IMA → SAS	0.700	0.698	0.026	26.808	0.000	Support
SAS → SI	-0.504	-0.504	0.030	16.954	0.000	Support
eLQ → SAS	0.153	0.155	0.028	5.512	0.000	Support

#### 4.3.6 Mediation tests

In the PLS path model, mediation occurs when a mediator variable partially absorbs the influence of an exogenous on an endogenous construct (Hair et al., 2014). According to Emeagwali & Sleimi (2017), the mediation tests are divided into three levels which are full mediating effect, partial mediating effect, and no mediating effect. These levels are determined by the significance level of the direct effect and indirect effect. Piaw (2023) represented that the full mediating effect occurs when only the indirect is significant, the partial mediating effect occurs when both the direct and indirect effects are significant, and the no mediating effect occurs if none of the direct and indirect effects exist. Besides, the positive or negative effect of the mediation also is identified by the original sample of indirect effect. Both direct effects and indirect effects were significant because these p-values were 0.000 under 0.05. It claimed that the path model had two mediation relationships, which were partial mediating effects. In the first mediating relationship, IMA → SAS → SI had the original sample of indirect effects IMA → SI was -0.353, which presented the negative partial mediating effect. The second mediating relationship was eLQ → SAS → SI had the original sample of indirect effect was -

0.077, which was a negative mediating relationship.

**Table 11.** Mediation tests (Authors, 2024)

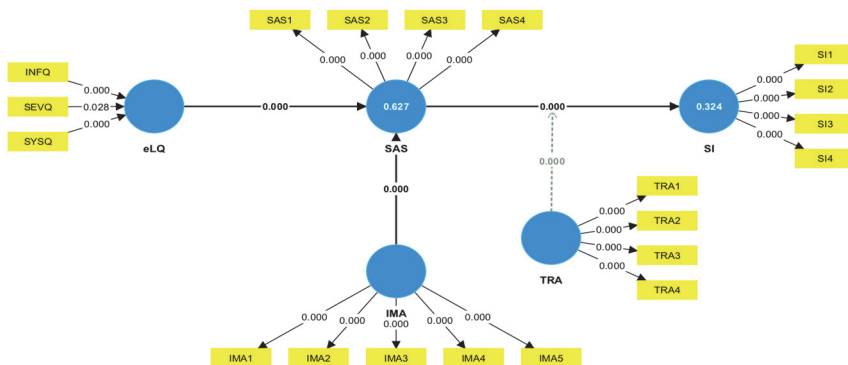
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values	Decision
Total indirect effects						
IMA → SI	-0.353	-0.352	0.027	13.047	0.000	Support
eLQ → SI	-0.077	-0.078	0.014	5.497	0.000	Support
Direct effects						
IMA → SAS	0.700	0.698	0.026	26.808	0.000	Support
eLQ → SAS	0.153	0.155	0.028	5.512	0.000	Support
SAS → SI	-0.504	-0.504	0.030	16.954	0.000	Support

4.3.7 Moderation tests

Moderation appears when the effect of an exogenous construct on an endogenous construct is impacted (or moderated) by the values of another variable (F. Hair et al., 2014). TRA was a moderator variable that impacted the relationship between SAS and SI because the p-value was 0.000, which was lower than 0.05. Besides, the influence of the moderating relationship TRA x SAS on SI was significant because the p-value was 0.000, lower than 0.05. While the path coefficient value of the moderating effect was 0.107, TRA was a positive moderator on the relationship between SAS and SI.

**Table 12.** Moderation test (Authors, 2024)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values	Decision
SAS → SI	-0.385	-0.384	0.033	11.758	0.000	Support
TRA → SI	-0.226	-0.226	0.033	6.832	0.000	Support
TRA x SAS → SI	0.107	0.107	0.018	5.930	0.000	Support



**Figure 3.** Moderation test (Authors, 2024)

## 5. Discussion and Implications

The research assessed the impact of eLearning quality and university image on student satisfaction, whereas the relationship between student satisfaction and switching intention was moderated by transnational education in the higher education institutions that had the eLearning program in Vietnam for Gen Z students. The conceptual framework also analyzed the significance of hypotheses and was explored in this discussion.

The research indicated that the impact of eLearning quality on student satisfaction is a significant hypothesis. According to H<sub>1</sub>, the relationship between eLearning quality and student satisfaction was assessed in the research of Aldholay et al. (2018) and Chaw & Tang (2018). Besides, according to the research of Aldholay et al. (2018), the overall quality of eLearning was the second-order variable, which was measured by three latent variables: system quality, service quality, and information quality. It was also identified in this research. The research claimed that eLearning quality was examined through service quality, system quality, and information quality, which had a high impact on eLearning quality. Therefore, the managers in higher education institutions should make an effort to balance the quality of service quality, system quality, and information quality, such as the flexibility of service, the ease of following the layout of information in the eLearning system, and supplying up-to-date knowledge for students. The universities should upgrade their IT facilities, such as high-quality Internet access, cloud computing, and artificial intelligence. Moreover, higher education institutions should be financially and chronologically structured to ensure that teaching and upgrading infrastructure activities are continuously conducted without interrupting the learning process. The curriculum should be constantly upgraded, supplemented, and edited to align with the constant development of society. The subjects should be reviewed and modified to adapt to the requirements of the industry.

In the second hypothesis, the relationship between university image and student satisfaction is significant. Besides, the research of Teeroovengadum et al. (2019) claimed the influence of university image on student satisfaction. According to the outer loadings, eLearning managers in universities should be more concerned with student scientific research activities and increase the image and academic reputation of the university through eLearning programs. For example, the university could connect with more companies to provide career opportunities after graduating from the eLearning program. Since the eLearning program of higher education institutions could increase the level of credibility in the mindset of students, they could receive recognition from companies. The universities should connect with businesses by inviting specialists to take part in practical teaching to help students visualize their career path after graduating. Besides, the universities should carry out many research topics at diverse levels, with the participation of lecturers, students, and mentors from businesses.

The next hypothesis presents the relationship between student satisfaction and switching intention as having a negative influence. Dey et al., (2020) proved that customer satisfaction had a negative impact on switching intentions. As stated by the results of the outer loadings, students feel satisfied when they can receive their expectations during their study. Besides, the satisfaction of students came from how the eLearning program met their requirements to decrease their ability to switch to other eLearning programs. To enhance student satisfaction, the universities should ensure quick and accurate information through the system's notifications sent by e-mail and SMS. The universities should provide instruction to help students solve their problems, which can appear during learning time, and have a student service department to help students avoid experiencing unresolved difficulties.

The research gap is the moderating role of transnational education. The final hypothesis represents that transnational education is a moderator that impacts the relationship between student satisfaction and switching intentions. According to the research of Knight & McNamara (2014), transnational education was represented as the secondary data to analyze the descriptive research. The outer loadings of TRA showed that the managers of eLearning programs in universities should

provide more courses and lectures to develop intercultural knowledge, skills, and professional skills for further career paths. Higher education institutions should ensure that university reputation is always measured and upgraded to reduce the ability to exchange programs. The flexibility of transnational education is also provided by the eLearning program. Therefore, the universities should have more policies to improve their overall eLearning program to gain competencies with other transnational education.

## 6. Limitations and Conclusion

The research findings answered all the research questions and objectives. The research identified the factors and levels that impacted the switching intention, which were eLearning quality, university image, the mediating effect of student satisfaction, and the moderating effect of transnational education. In addition, the authors suggested practical implications for managers to control the switching intentions of Gen Z students in universities in Vietnam.

However, the research also has several limitations, which could affect future research. The first limitation relates to the location of the data. The data of the research was only collected from a single city in Vietnam, which could provide information on issues related to the diversity of culture. The following limitation is objective research: The research is only concerned with the factors that impact the switching intention of students who are studying an eLearning program; however, switching intention could occur in offline learning which is not explored in the research.

Future research should be managed within the limitations of the research. Firstly, the research would be done in different cities and countries to assess and develop the conceptual framework for this study. This would verify the role of the conceptual model, which prefers individual cities in one country. Besides, further research can explore new factors, such as culture, that can influence the switching intention of students. Secondly, transnational education is a phenomenon with only quantitative research. In this research, transnational education is the moderation variable, which was based on the results of the structural model. Therefore, further studies can explore the role of transnational education as an exogenous variable, an endogenous variable, or a mediating variable in the path model.

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## References

- Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical Latent Variable Models in PLS-SEM: Guidelines for Using Reflective-Formative Type Models. *Long Range Planning*, 45(5-6), 359-394. <https://doi.org/10.1016/j.lrp.2012.10.001>
- Chandra, T., Hafni, L., Chandra, S., Purwati, A. A., & Chandra, J. (2019). The influence of service quality, university image on student satisfaction and student loyalty. *Benchmarking: An International Journal*, 26(5), 1533-1549. <https://doi.org/10.1108/BIJ-07-2018-0212>
- Cheah, J. H., Ting, H., Ramayah, T., Memon, M. A., Cham, T. H., & Ciavolino, E. (2019). A comparison of five reflective-formative estimation approaches: reconsideration and recommendations for tourism research. *Quality and Quantity*, 53(3), 1421-1458. <https://doi.org/10.1007/s1135-018-0821-7>

- Chopra, G., Madan, P., Jaisingh, P., & Bhaskar, P. (2019). Effectiveness of e-learning portal from students' perspective: A structural equation model (SEM) approach. *Interactive Technology and Smart Education*, 16(2), 94–116. <https://doi.org/10.1108/ITSE-05-2018-0027>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. L. Erlbaum Associates.
- Croucher, G., Elliott, K., Locke, W., & Yencken, E. (2021). Australia's higher education delivery offshore and online – trends, barriers and opportunities.
- Dayana Fozeli, A., Sani, N. A., Mustafa, A. S., Khalid, N. A., & Chawla, P. (2022). Students' Satisfaction Towards the Use of E-learning during the Global Pandemic. *Asia Pacific Journal of Management and Education (APJME)*, 5(1), 34–50. <https://doi.org/10.32535/apjme.v4i3.14>
- Dey, B. L., Al-Karaghoul, W., Minov, S., Babu, M. M., Ayios, A., Mahammad, S. S., & Binsardi, B. (2020). The Role of Speed on Customer Satisfaction and Switching Intention: A Study of the UK Mobile Telecom Market. *Information Systems Management*, 37(1), 2–15. <https://doi.org/10.1080/10580530.2020.1696526>
- Hair, F., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, Marko. (2017). A primer on partial least squares structural equation modeling (PLS-SEM).
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019). Rethinking some of the rethinking of partial least squares. *European Journal of Marketing*, 53(4), 566–584. <https://doi.org/10.1108/EJM-10-2018-0665>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, 20, 277–319. [https://doi.org/10.1108/S1474-7979\(2009\)0000020014](https://doi.org/10.1108/S1474-7979(2009)0000020014)
- Huang, F. (2003). Transnational higher education: A perspective from china. *International Journal of Phytoremediation*, 21(1), 193–203. <https://doi.org/10.1080/07294360304114>
- Hulland, J. (1999). Use of partial least squares (pls) in strategic management research: a review of four recent studies. *Strategic Management Journal Strat. Mgmt. J*, 20, 195–204.
- Junaid Nadvi, M. (2022). *Introduction to social sciences (3rd ed.)*. Junaid Sons Publication.
- Knight, J., & McNamara, J. (2014). Impacts of transnational education on host countries: academic, cultural, economic and skills impacts and implications of programme and provider mobility. <https://doi.org/10.13140/RG.2.2.18541.92646>
- Madleňák, R., D'Alessandro, S. P., Marengo, A., Pange, J., & Ivánneszmélyi, G. (2021). Building on strategic elearning initiatives of hybrid graduate education a case study approach: MHEI-ME Erasmus+ Project. *Sustainability (Switzerland)*, 13(14). <https://doi.org/10.3390/su13147675>
- Müller, A. M., Goh, C., Lim, L. Z., & Gao, X. (2021). Covid-19 emergency elearning and beyond: Experiences and perspectives of university educators. *Education Sciences*, 11(1), 1–15. <https://doi.org/10.3390/educsci11010019>
- Ni, A., Zhang, C., Hu, Y., Lu, W., & Li, H. (2020). Influence mechanism of the corporate image on passenger satisfaction with public transport in China. *Transport Policy*, 94(April), 54–65. <https://doi.org/10.1016/j.tranpol.2020.04.014>
- Nitzl, C. (2014). Partial Least Squares Structural Equation Modelling (PLS-SEM) in Management Accounting Research: Critical Analysis, Advances, and Future Directions. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2469802>
- Ntshwarang, P. N., Malinga, T., & Losike-Sedimo, N. (2021). eLearning Tools at the University of Botswana: Relevance and Use Under COVID-19 Crisis. *Higher Education for the Future*, 8(1), 142–154. <https://doi.org/10.1177/2347631120986281>
- Pedro, N. S., & Kumar, S. (2020). Institutional Support for Online Teaching in Quality Assurance Frameworks. *Online Learning*, 24(3), 50–66. <https://doi.org/10.24059/olj.v24i3.2309>
- Piaw, C. Y. (2023). A step-by-step guide: PLS - SEM data analysis using SmartPLS 4. In *Resear. Researchtree Education*.
- Rigdon, E. E. (2014). Rethinking Partial Least Squares Path Modeling: Breaking Chains and Forging Ahead. *Long Range Planning*, 47(3), 161–167. <https://doi.org/10.1016/j.lrp.2014.02.003>

- Ringle, Sarstedt, & Straub. (2012). Editor's Comments: A Critical Look at the Use of PLS-SEM in "MIS Quarterly." *MIS Quarterly*, 36(1), iii. <https://doi.org/10.2307/41410402>
- Roman, M., & Plopeanu, A.-P. (2021). The effectiveness of the emergency eLearning during COVID-19 pandemic. The case of higher education in economics in Romania. *International Review of Economics Education*, 37, 100218. <https://doi.org/10.1016/j.iree.2021.100218>
- Sarstedt, M., Ringle, C. M., Henseler, J., & Hair, J. F. (2014). On the Emancipation of PLS-SEM: A Commentary on Rigdon (2012). *Long Range Planning*, 47(3), 154–160. <https://doi.org/10.1016/j.lrp.2014.02.007>
- Tran Thi Tuyet. (2014). Internationalization of Higher Education in Vietnam: Opportunities and Challenges. *VNU Journal of Science: Foreign Studies*, 30(3), 61–69.
- UNESCO-CEPES. (1999). Code of Good Practice in the Provision of Transnational Education. Bucharest: UNESCO-CEPES.
- Valverde-Berrosco, J., del Carmen Garrido-Arroyo, M., Burgos-Videla, C., & Morales-Cevallos, M. B. (2020). Trends in educational research about e-Learning: A systematic literature review (2009-2018). In *Sustainability (Switzerland)* (Vol. 12, Issue 12). MDPI. <https://doi.org/10.3390/sui12125153>
- Vu Huu Duc. (2020). Investment in sustainable development of E-Learning in higher education - Policy lessons from successful countries for Vietnam. *Ho Chi Minh City Open University Journal of Science*, 15(1), 3–15. <https://doi.org/10.46223/HCMCOUJS>
- Waheed, M., Kaur, K., & Qazi, A. (2016). Students' perspective on knowledge quality in eLearning context: a qualitative assessment. *Internet Research*, 26(1), 120–145. <https://doi.org/10.1108/IntR-08-2014-0199>