

The Influence Of The 4cs Marketing On Private Universities Selection Among New Economics Students In Vietnam - Part 2_Research Result

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ABSTRACT

With study part 1 is to determine the importance level of the 4Cs marketing factors that influence on new economics students' decision to choose private universities in Vietnam Part 1: Literature review, this study presents part 2, which is building a model, testing, and proposing implications for private universities to attract new economics students in Vietnam. Convenience sample selection by offline and online survey technique was executed. Data was collected from 400 students of HUTECH University, Ho Chi Minh City Economics and Finance, Van Lang University, and Van Hien University. The partial least squares structural equation modeling (PLS-SEM) analysis using SMARTPLS4 found that the factors Commodity, Cost, Communication, Convenience and Personal characteristics affect private universities selection among new students majoring in economics through the Students' perceptions factor. The research results suggest management implications for private universities by using the Marketing mix 4Cs to attract new students in the economics major.

Keywords: Marketing 4Cs, university selection, new economics students, private universities, Vietnam

JEL: I23, I25, M31

1. INTRODUCTION

Higher education is very important because it is an environment to train a qualified workforce for society. Nowadays, Vietnamese people no longer distinguish between public and private universities as¹ before. That leads to fierce competition between public universities, private universities and universities associated with foreign countries. Universities are constantly implementing marketing strategies in education to attract new students. With the advantage of self-financing, private universities invest heavily in infrastructure, recruit top talent into management staff, lecturers, and promote brands on many media platforms. The question is whether 4Cs marketing activities that private universities are applying attract can new students? How does each factor in 4Cs marketing affect private universities selection among new economics students in Vietnam? Therefore, conducting research "The influence of the 4Cs marketing on private universities selection among new economics students in Vietnam" holds extremely scientific and practical significance for university managers to attract new students according to their desires and preferences.

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The objective of the study is to test the research model that affects new economics students' private universities selection in Vietnam through the following steps:

- Evaluate the resulting measurement model through testing the quality of observed variables, reliability, convergent and discriminant validity of the scales.
- Evaluate the resulting structural model to test the hypotheses of the research model, identifying the effects of new economics students' private universities selection in Vietnam through an intermediary variable, which is the students' perceptions factor. The higher the students' perceptions, the higher private universities selection among them.

2. LITERATURE REVIEW

2.1. Evaluation of the resulting measurement model

When evaluating the resulting measurement model on SMARTPLS, focus on the main issues: quality of observed variables, reliability, convergent and discriminant validity of the scales.

2.1.1. Quality of observed variables

The outer loading coefficient of the observed variables is an index showing the degree of association between the observed variable and the latent variable. In essence, outer loading in SMARTPLS is the square root of the absolute value of R^2 of the linear regression from the latent variable to the observed variable. For example, latent variable A is measured by three observed variables A1, A2, A3. The outer loading coefficient of the observed variable A1 = 0.782 means that the regression from A acts on A1 for the value $R^2 = (0.782)^2 = 0.612$, the latent variable A explains 61.2% of the variation of the observed variable A1.

Hair et al (2014) suggested that the outer loading should be greater than or equal to 0.708 for the observed variables to be quality. Because $0.708^2 = 0.5$, it means that the latent variable explained 50% of the variation of the observed variable. In the view of Hair et al., it can be seen that these researchers rate an observed variable as quality if the latent variable explains at least 50% of the variation of that observed variable. To make it easier to remember, the researchers rounded off the threshold of 0.7 instead of the odd number 0.708.

There are many different opinions when evaluating the quality of the observed variable through the outer loading index and the results in those studies gave different outer loading thresholds, however, the threshold of 0.7 was the most commonly used threshold in the vast majority of cases. An observed variable with an outer loading below 0.7 should be removed and the model should be reanalysed.

2.1.2. Scale reliability

We evaluate the reliability of the scale on SMARTPLS through two main indicators, Cronbach's Alpha, and Composite Reliability. Composite Reliability (CR) is preferred by many researchers over Cronbach's Alpha because Cronbach's Alpha underestimates reliability compared to CR. Chin (1998) suggested that in exploratory research, CR must be 0.6 or higher. With confirmatory studies, the threshold of 0.7 is the appropriate level of the CR index (Henseler & Sarstedt, 2013). Many other researchers also agree that 0.7 is the appropriate threshold for the majority of cases, such as Hair et al. (2010), Bagozzi & Yi (1988).

If a scale does not reach the confidence threshold, it is necessary to remove each observed variable with the lowest outer loading in turn to improve reliability. If we have eliminated all the ineligible variables but the scale still does not reach the reliability threshold, we will conclude the scale is not reliable and do not use that scale for the quantitative analysis later.

2.1.3. Convergent validity

To evaluate the convergence on SMARTPLS, we will rely on the average variance extracted AVE (Average Variance Extracted). Hock & Ringle (2010) suggest that a scale achieves convergent value if the AVE is 0.5 or higher. This level of 0.5 (50%) means that the average latent variable will explain at least 50% of the variation of each observed variable.

A drawback in the calculation of the AVE index is that the observed variables are equally evaluated, not considering the observed variables with low external load coefficients. In the evaluation of the measurement model, an observed variable has a low external load coefficient (for example, less than 0.4) but the external load coefficient of the remaining observed variables is very high, the AVE still reaches the threshold of 0.5. Therefore, before evaluating AVE, we need to evaluate the quality of the observed variables and check the reliability of the scale first to remove the observed variables that are not significant.

If a scale does not reach convergence, we also remove each observed variable with the lowest outer loading in turn to improve convergence. If after the process of eliminating variables, convergence is still not guaranteed, we conclude that the scale does not guarantee convergence and do not use the scale for the quantitative analysis later.

2.1.4. Discriminant validity

Discriminant value indicates the distinctiveness of a structure when compared to other structures in the model. The traditional approach to assess discriminant is to use the square root index AVE proposed by Fornell and Larcker (1981). This traditional method has shortcomings and requires a more precise evaluation method. Henseler et al. (2015) used simulation studies to demonstrate that discriminant validity is better assessed by the HTMT index they developed. SMARTPLS uses both of these discriminant measures, but still focuses more on HTMT.

Fornell and Larcker (1981) recommend that discriminability is guaranteed when the square root of the AVE for each latent variable is higher than all correlations between the latent variables. With the HTMT index, Garson (2016) suggests that the discriminant value between the two latent variables is guaranteed when the HTMT index is less than 1. Henseler et al. (2015) propose that if this value is below 0.9, the value is less than 1, discrimination will be guaranteed. Meanwhile, Clark & Watson (1995) and Kline (2015) use a more stringent threshold of 0.85. SMARTPLS prioritizes threshold selection of 0.85 in the evaluation.

When evaluating HTMT, we perform bootstrapping to see if this value is statistically different from 1. If we take the confidence of the bootstrap test to be 95%, we will see if the 2.5% to 97.5% percentile contains the value 1 or not. If the percentile contains the value 1, the discriminability is not guaranteed, otherwise, if the percentile does not contain the value 1, the discriminability is guaranteed. More rigorously, we will consider the value 0.9 or 0.85 instead of the value 1.

When evaluating discrimination, we will need to keep in mind the roles of independent and dependent variables. Because when the independent variable has a very strong impact on the dependent, the HTMT between the independent variable and the dependent may be higher than the threshold of 0.85. At this time, the solution is not to evaluate the relationship between the independent and the dependent, but only to evaluate the independent variables.

2.2. Evaluation of resulting structure model

2.2.1. Evaluation of multicollinearity

Inner VIF Values: Evaluate multicollinearity between latent variables. This is the most important item, because multicollinearity between the independent latent variables is a serious problem.

Outer VIF Values: Evaluate multicollinearity between observed variables. With structures built according to the reflective model, we do not need to care about this indicator. With structures built according to the formative model, this high index is as serious as Inner VIF Values, we need to deal with.

According to Hair et al. (2019), if the VIF is from 5 onwards, the model has a very high probability of showing multicollinearity. The threshold for evaluating VIF proposed by the authors is as follows:

- $VIF \geq 5$: The possibility of appearing multicollinearity is very high.
- $3 \leq VIF \leq 5$: Multicollinearity may be encountered.
- $VIF < 3$: There may be no multicollinearity.

2.2.2. Evaluation of impact relationships

To evaluate impact relationships, we will use the results of the Bootstrap analysis. We will be interested mainly in Original Sample and P Values.

- Original Sample: Normalized regression coefficient of the original data. SMARTPLS has no unnormalized regression coefficient.
- P Values: The significance level of the t-test. We will compare this significance level with comparison thresholds such as 0.05, 0.1 or 0.01 (usually 0.05).

2.2.3. Level of explanation of the independent variable for the dependent variable (R-squared)

To evaluate the R-squared coefficient, we will use the results of the Algorithm PLS analysis. In SMARTPLS, we have two results, R-squared, and R-squared adjusted. The meaning of this index is completely similar to the linear regression on SPSS. If the analysis results have both these indicators, we will prefer to use the adjusted R-squared index. R-squared value as well as adjusted R-squared range from 0 to 1, the closer to 1, the more independent variables explain the dependent variable.

2.2.4. Evaluation of the effect of each independent variable on the dependent variable (Effect size f^2)

To evaluate the coefficient f^2 (f-squared), we will use the results of the PLS Algorithm analysis. The coefficient f-squared indicates whether the influence of the independent variable on the dependent variable is strong or weak.

In terms of applicability, f-squared and Original Sample normalized regression coefficient mentioned in the previous section are quite similar when comparing the order of impact of the independent variable on the dependent. However, the normalized regression coefficient has not yet provided thresholds to determine the strength and weakness of the relationships, f squared can solve this problem.

Cohen (1988) proposed the f-squared indexes to evaluate the importance of independent variables as follows:

- $f\text{-squared} < 0.02$: the effect is extremely small or has no effect.
- $0.02 \leq f\text{-squared} < 0.15$: small impact.
- $0.15 \leq f\text{-squared} < 0.35$: medium impact.
- $f\text{-squared} \geq 0.35$: high impact.

3. RESEARCH MODEL

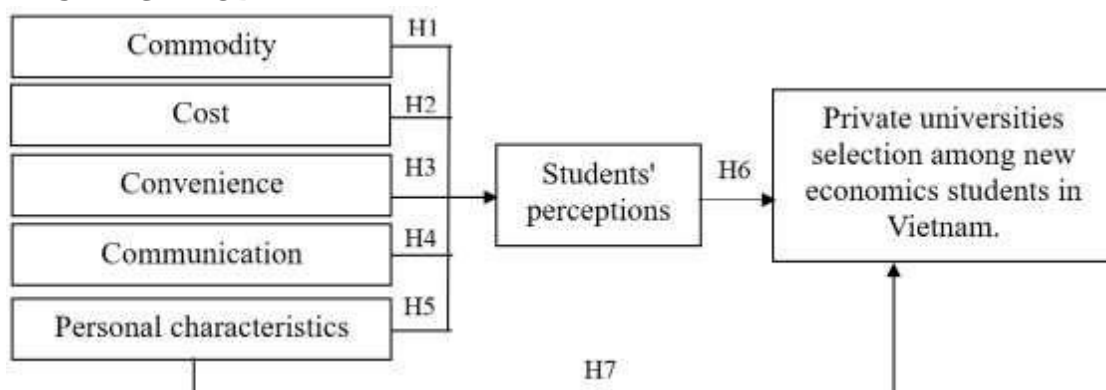


Figure 1: Proposed Conceptual Framework

In the content of the study part 1, the proposed conceptual framework is the study model in which the higher new economics students' perceptions of 4Cs Marketing of the university, the higher the university selected. The proposed model includes the following factors: commodity, cost, convenience, communication, personal characteristics, students' perceptions, and private university selection of new economics students in Vietnam. In this model there are 7 hypotheses and they have been proven, such as:

Hypothesis 1: Commodity has a positive impact on new economics students' perceptions of private universities in Vietnam.

Hypothesis 2: Cost has a positive impact on new economics students' perceptions of private universities in Vietnam.

Hypothesis 3: Convenience has a positive impact on new economics students' perceptions of private universities in Vietnam.

Hypothesis 4: Communication has a positive impact on new economics students' perceptions of private universities in Vietnam.

Hypothesis 5: Personal characteristics have a positive impact on new economics students' perceptions of private universities in Vietnam.

Hypothesis 6: The perceptions of new economics students have a positive impact on private universities selection among new economics students in Vietnam.

Hypothesis 7: Personal characteristics have a positive impact on private universities selection among new economics students in Vietnam.

4. RESEARCH METHODOLOGY

4.1. Operationalization

Qualitative and quantitative methods are used in the process from qualitative to quantitative research with the aim of building and testing models and hypotheses about the impact of university selection of new economics students in Vietnam through measuring their perceptions of the university's 4Cs Marketing activities.

4.2. Qualitative research

Firstly, qualitative research method is carried out through focus group discussion. Group discussion is very important to conduct a pilot interview to adjust the scale. Based on research papers of experts and survey research on the decision to choose a private university of new students majoring in economics in Vietnam, thereby completing the 4Cs Marketing activities of the private university influencing their decision to choose a private university in Vietnam. This study adjusts and adds observed variables used to measure concepts in the research model. Qualitative research results are scales that have been adjusted to match the official survey sample used for quantitative research. 400 new economics students at private universities were surveyed for primary data.

The questionnaire was designed according to a 5-point Likert scale to assess the decision to choose a private university of new students majoring in economics in Vietnam. The official questionnaire includes 38 observed variables corresponding to 7 scales of the research model: (1) Commodity, (2) Cost, (3) Convenience, (4) Communication, (5) Personal Characteristics, (6) Students' perceptions, (7) Private university selection of new economics students in Vietnam.

The concept of Commodity is denoted as STUCOM and is measured by six observed variables; The concept of Cost is represented by STUCOST and measured by six observed variables; Convenience is denoted as CONVEN and is measured by six observed variables; The concept of Communication is represented by COMMUN and measured by seven observed variables; The concept of Personal Characteristics is denoted as STUCHA and is

measured by five observed variables; The concept of Students' Perceptions is denoted as STUFEEL and is measured by 4 observed variables; and the concept of Private Universities Selection Of New Economics Students In Vietnam is denoted STUDEC and measured by 4 observed variables (see Table 1)

Table 1: Measurements

STUCOM1	The training program is widely recognized by reputable organizations.
STUCOM2	The training program is highly applicable and close to reality.
STUCOM3	The university has links with many businesses in training activities, visits, and internships.
STUCOM4	Experienced and dedicated lecturers.
STUCOM5	Modern facilities.
STUCOM6	Many extracurricular activities and clubs help students develop skills.
STUCOST1	Tuition is based on credits, convenient for students to pay tuition.
STUCOST2	Tuition payment deadlines are flexible.
STUCOST3	There is a scholarship policy and tuition support for new students.
STUCOST4	Tuition fees correspond to the quality of services provided at the school.
STUCOST5	Tuition fees are consistent with the general tuition fees of other private universities.
STUCOST6	Tuition fees are appropriate to the financial capacity of student's family and themselves.
CONVEN1	The university has many admission methods.
CONVEN2	The university has many channels (direct, online) for admission and application submission.
CONVEN3	The university has many training majors, giving learners many choices.
CONVEN4	The university's campuses are located within easy reach of public transportation.
CONVEN5	The university in the inner-city district is convenient for students to work overtime.
CONVEN6	The university has information technology - foreign language - skills training centers that are convenient for students to study after hours.
COMMUN1	Mass media activities help students easily find university information.
COMMUN2	The university's social media network creates its own unique impression and image.
COMMUN3	The university organizes university tours for high school students.
COMMUN4	The university's website provides complete and diverse information.
COMMUN5	The university actively organizes and participates in admission consulting days in Ho Chi Minh city and provinces.
COMMUN6	The university has close relationships with relevant parties (students, alumni, lecturers, employers) to improve training quality.
COMMUN7	The university has many channels providing clear and easy-to-find university admission information.
STUCHA1	The university has an entrance standard suitable for individual academic ability.
STUCHA2	The university has a major that matches individual interests.
STUCHA3	The university has a major that match individual future orientation.
STUCHA4	The university has a major that matches individual learning ability.
STUCHA5	Living and studying costs at university are consistent with personal financial capacity.
STUFEEL1	I am very proud to be a member of this university.
STUFEEL2	I am confident in my abilities while studying at this university.
STUFEEL3	Studying at this university gives me better career opportunities.
STUFEEL4	Studying at this university helps me become a well-rounded person.

STUDEC1	Compared to my expectations, I am satisfied with my decision to study at this university.
STUDEC2	Compared to my ideal university, I am satisfied with my decision to choose this one.
STUDEC3	Choosing this university is the right decision for me.
STUDEC4	I have confidence in my decision to choose this university.

4.3. Quantitative Research

4.3.1. Sampling Method

Research sample information was collected by convenience sample selection and both offline and online survey technique. The form of the survey is a questionnaire distributed to students at universities: HUTECH University, University of Economics and Finance, Van Lang University, Van Hien University. The survey period is from Jun to August 2023. A total of 400 questionnaires were collected and analysed.

4.3.2. Research Process

The research process began with the elaboration of research objectives and the proposition of theoretical framework. The draft scale was then finalized by a focus group interview (n=30). The formal scale was finally formed, and the quantitative research method was executed to measure the effect of 4Cs Marketing activities of private universities on decision to choose university of new economics students in Vietnam. Primary data was processed by software SMARTPLS 4.0 as follows Measurement Model Assessment (Quality of observed variables, Scale reliability, Convergent and Discriminant validity of the scales), Structural Model Assessment (Evaluation of multicollinearity, Evaluation of impact relationships, Level of explanation of the independent variable for the dependent variable (R-squared), Evaluation of the effect of each independent variable on the dependent variable (Effect size f^2)), and Measurement invariance.

5. RESEARCH RESULT

5.1. Measurement Model Assessment

5.1.1. Quality of observed variables

According to Hair et al (2014), the outer loading should be greater than or equal to 0.7 for the observed variables to be quality. However, in the first round, both the variables STUFEEL4 and CONVEN5 have outer loadings smaller than 0.7 (0.644 and 0.648 respectively), in which the variable STUFEEL4 has a smaller outer loading, so the variable STUFEEL4 should be eliminated first. In the second round, the CONVEN5 variable has an outer loading equal 0.66 which is still less than 0.7, so we continue to remove the CONVEN5 variable.

In the final round, all observed variables have outer loading coefficients larger than 0.7, showing that the level of association between observed variables and latent variables is high.

Table 2. Outer loadings

	COMMUN	CONVEN	STUCHA	STUCOM	STUCOST	STUDEC	STUFEEL
COMMUN1	0.843						
COMMUN2	0.853						
COMMUN3	0.798						
COMMUN4	0.816						
COMMUN5	0.848						
COMMUN6	0.848						
COMMUN7	0.878						
CONVEN1		0.783					
CONVEN2		0.85					
CONVEN3		0.911					
CONVEN4		0.881					
CONVEN6		0.862					
STUCHA1			0.851				
STUCHA2			0.88				
STUCHA3			0.899				
STUCHA4			0.896				
STUCHA5			0.836				
STUCOM1				0.766			
STUCOM2				0.742			
STUCOM3				0.773			
STUCOM4				0.718			
STUCOM5				0.789			
STUCOM6				0.787			
STUCOST1					0.868		
STUCOST2					0.753		
STUCOST3					0.701		
STUCOST4					0.704		
STUCOST5					0.778		
STUCOST6					0.735		
STUDEC1						0.792	
STUDEC2						0.932	
STUDEC3						0.838	
STUDEC4						0.868	
STUFEEL1							0.907
STUFEEL2							0.894
STUFEEL3							0.824

5.1.2. Scale reliability and Convergent validity

In Table 3, seven Cronbach's alpha coefficients range from 0.847 to 0.931 as well as seven Composite Reliability coefficients range from 0.89 to 0.944. They demonstrate high reliability measurement scales.

Besides, Hock & Ringle (2010) suggest that a scale achieves convergent value if the AVE is 0.5 or higher. As results showed in table 3, AVE indicators of seven factors are higher than 0.7, therefore all scales reach convergent validity.

Table 3. Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
COMMUN	0.931	0.932	0.944	0.707
CONVEN	0.91	0.917	0.933	0.737
STUCHA	0.922	0.928	0.941	0.762
STUCOM	0.856	0.86	0.893	0.582
STUCOST	0.853	0.862	0.89	0.575
STUDEC	0.88	0.894	0.918	0.737
STUFEEL	0.847	0.852	0.908	0.767

5.1.3. Discriminant validity

Table 4 indicates that the AVE square root of each variable is larger than the correlation coefficient of pairs of variables, so according to Fornell and Larcker (1981), the discrimination of the scales is guaranteed.

Table 4. The AVE square root index

	COMMUN	CONVEN	STUCHA	STUCOM	STUCOST	STUDEC	STUFEEL
COMMUN	0.841						
CONVEN	0.494	0.858					
STUCHA	0.202	0.164	0.873				
STUCOM	0.457	0.51	0.101	0.763			
STUCOST	0.482	0.335	0.241	0.461	0.758		
STUDEC	0.697	0.746	0.347	0.644	0.557	0.859	
STUFEEL	0.616	0.506	0.312	0.547	0.518	0.769	0.876

When evaluating HTMT, according to Henseler et al (2015), Clark & Watson (1995), and Kline (2015), to ensure the discrimination, the HTMT index must be less than 0.85. An index between 0.85 and 0.9 is acceptable, while an index greater than 0.9 indicates indistinguishable/similar scales. Table 5 illustrates that the discrimination between factors is well guaranteed (<0.85), the HTMT index of the pair of variables STUDEC and STUFEEL (0.881) is less than 0.9, so the discriminant value is still guaranteed.

Table 5. HTMT index

	COMMUN	CONVEN	STUCHA	STUCOM	STUCOST	STUDEC	STUFEEL
COMMUN							
CONVEN	0.536						
STUCHA	0.215	0.174					
STUCOM	0.508	0.575	0.111				
STUCOST	0.531	0.363	0.264	0.511			
STUDEC	0.763	0.842	0.373	0.734	0.62		
STUFEEL	0.69	0.57	0.362	0.636	0.584	0.881	

5.2. Structural Model Assessment**5.2.1. Evaluation of multicollinearity**

All the VIF values are less than 3 (Table 6), according to Hair et al. (2019), the model does not encounter collinearity.

Table 6. VIF

	VIF
COMMUN -> STUFEEL	1.606
CONVEN -> STUFEEL	1.539
STUCHA -> STUDEC	1.108
STUCHA -> STUFEEL	1.081
STUCOM -> STUFEEL	1.597
STUCOST -> STUFEEL	1.483
STUFEEL -> STUDEC	1.108

5.2.2. Evaluation of impact relationships

There are 5 variables that affect STUFEEL: COMMUN, CONVEN, STUCHA, STUCOM, STUCOST. The standardized impact coefficients of these 5 variables are: 0.326, 0.145, 0.159, 0.231, 0.168, respectively (Table 7). Among them, the strongest is COMMUN, the second is STUCOST.

There are two variables that affect STUDEC: STUFEEL and STUCHA. The standardized impact coefficients of these two variables are: 0.732 and 0.118, respectively (Table 7).

The P values are all less than 0.05 (Table 7), so it can be concluded that the effects are statistically significant.

Table 7. Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
COMMUN -> STUFEEL	0.326	0.325	0.044	7.402	0
CONVEN -> STUFEEL	0.145	0.144	0.05	2.896	0.004
STUCHA -> STUDEC	0.118	0.118	0.033	3.599	0
STUCHA -> STUFEEL	0.159	0.159	0.032	5.009	0
STUCOM -> STUFEEL	0.231	0.233	0.039	5.894	0
STUCOST -> STUFEEL	0.168	0.17	0.038	4.397	0
STUFEEL -> STUDEC	0.732	0.733	0.024	30.87	0

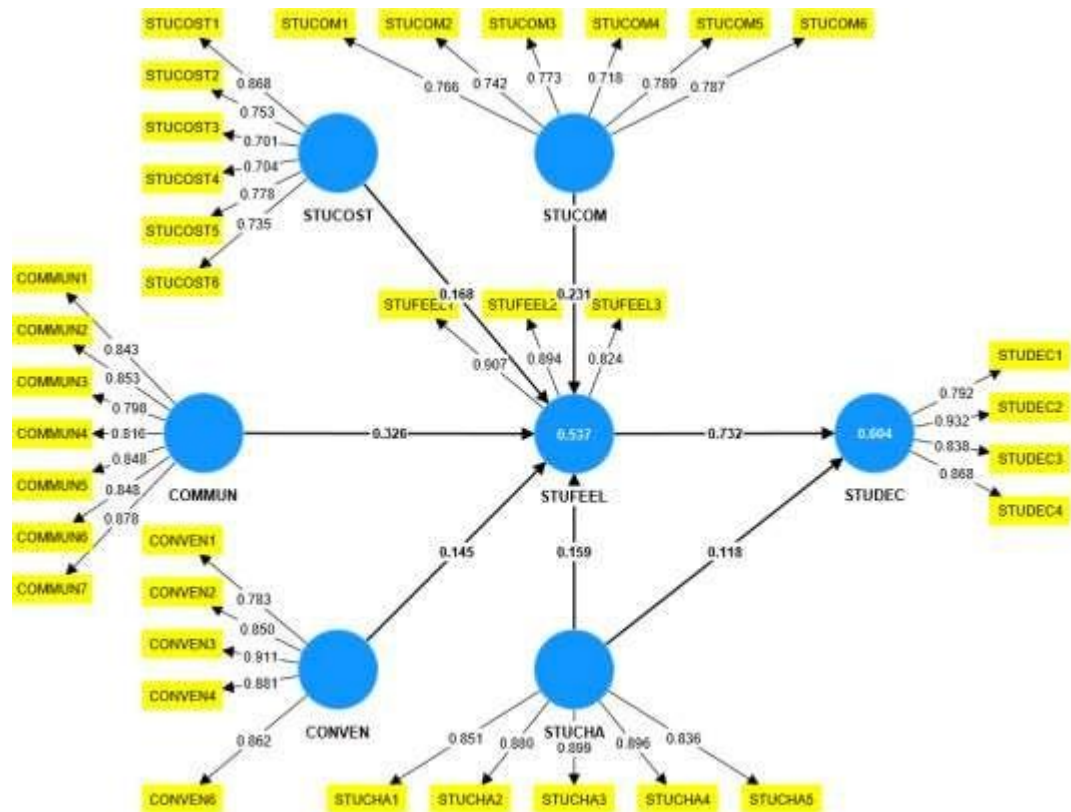


Figure 2. Structural model PLS results

5.2.3. Level of explanation of the independent variable for the dependent variable (R-squared)

R-square adjusted of STUFEEL is 0.532 (Table 8), which means that the five independent variables including STUCOM, STUCOST, CONVEN, COMMUN, STUCHA can explain 53.2% of the STUFEEL variable.

R-square adjusted of STUDEC is 0.602 (Table 8), which means that STUFEEL, STUCHA can explain 60.2% of the variation in the STUDEC variable.

Table 8. R-squared

	R-square	R-square adjusted
STUDEC	0.604	0.602
STUFEEL	0.537	0.532

5.2.4. Evaluation of the effect of each independent variable on the dependent variable (Effect size f^2)

Based on the indicators in table 9, it can be concluded that:

- COMMUN has a small impact on STUFEEL.
- CONVEN has a small impact on STUFEEL.
- STUCHA has a small impact on STUFEEL, and a small impact on STUDEC.
- STUCOM has a small impact on STUFEEL.
- STUCOST has a small impact on STUFEEL.
- STUFEEL has a large impact on STUDEC.

Table 9. f-squared

	COMMUN	CONVEN	STUCHA	STUCOM	STUCOS	STUDEC	STUFEEL
COMMUN							0.142
CONVEN							0.029
STUCHA						0.032	0.05
STUCOM							0.072
STUCOST							0.041
STUDEC							
STUFEEL						1.222	

5.3. Measurement invariance

5.4.

Table 10. Path coefficients with control variables

	Original sample (O)	Sample mean (M)	Standard deviation	T statistics (O/STDEV)	P values
COMMUN -> STUFEEL	0.326	0.325	0.044	7.402	0
CONVEN -> STUFEEL	0.145	0.144	0.05	2.896	0.004
GENDER -> STUDEC	0.006	0.006	0.03	0.21	0.833
MAJORS -> STUDEC	-0.007	-0.008	0.033	0.202	0.84
SCHOOL -> STUDEC	-0.019	-0.018	0.032	0.587	0.557
STUCHA -> STUDEC	0.124	0.124	0.036	3.492	0
STUCHA -> STUFEEL	0.159	0.159	0.032	5.009	0
STUCOM -> STUFEEL	0.231	0.233	0.039	5.894	0
STUCOST -> STUFEEL	0.168	0.17	0.038	4.397	0
STUFEEL -> STUDEC	0.731	0.732	0.024	30.19	0

To measure the invariance of the model, different genders, majors, and schools were included. The composition invariance results passed the test ($p > 0.05$, two-tailed), the mean values are equal, and the variance confidence interval results show no significant differences. Therefore, it is believed that this model exhibits sufficient invariance in grouping by gender, major, and school.

6. DISCUSSION, IMPLICATION AND CONCLUSTION

COMMUN factor has 7 observable variables (COMMUN1, COMMUN2, COMMUN3, COMMUN4, COMMUN5, COMMUN6, COMMUN7) and remained unchanged through Measurement Model Assessment (Table 2, 3). In this research, COMMUN factor has the strongest influence (Original Sample = 0.326 and Sig. value less than 0.05) on STUFEEL, so the hypothesis H4 is accepted. This demonstrates that communication is the top concern of new economics students to decide to choose a private university. Therefore, private universities need to strengthen communication activities to help children find information. Social media activities, including Facebook, TikTok, and Instagram, need to create an impression and a unique image of the university. University websites and print media including banners and posters need to be concise and provide complete and diverse information. The school needs to actively organize and participate in Admissions Consulting Days at the school and all provinces in Vietnam. In addition, the school needs to establish close relationships with relevant parties such as alumni through organizing Alumni Meetings; with employers through recruitment fairs and strengthening cooperation with Vietnamese and foreign businesses; with students through traditional student festivals and youth union, and associations with lecturers through professional seminars, cultural, arts and sports competitions.

STUCOM factor has 6 observable variables (STUCOM1, STUCOM2, STUCOM3, STUCOM4, STUCOM5, STUCOM6) and remained unchanged through Measurement Model Assessment (Table 2, 3). The result shows that it has the second large influence on STUFEEL (Original Sample = 0.231 and Sig. value less than 0.05), so the hypothesis H1 is accepted. The results confirm the importance of strengthening research and academia to

build an excellent learning environment and gain accreditation from reputable institutions. To achieve this, it is first necessary to invest in physical facilities, and fund money to develop research capacity, including modern laboratories and workspaces so that lecturers and students can research. Creating opportunities for students to participate in research projects at school level, city level, and with businesses will speed up the process of finding creative solutions, meeting, exchanging research, creating a professional academic environment. At the same time, easy access to necessary research resources and software is also an important factor to promote effective research activities. In addition, it is necessary to train soft skills and personal ethics to develop student capacity. Purchasing copyrights, updating digital documents, and international cooperation should also be considered.

STUCOST factor has 6 observable variables (STUCOST1, STUCOST2, STUCOST3, STUCOST4, STUCOST5, STUCOST6) and remained unchanged through Measurement Model Assessment (Table 2, 3). The result indicates that it has the third large influence on STUFEEL (Original Sample = 0.168 and Sig. value less than 0.05), so the hypothesis H2 is accepted. The school should make it easy for students to pay tuition fees such as flexible payment time or extend the tuition fee payment period including the beginning and middle of each semester. Besides, private universities should apply diverse payment methods such as bank transfer, cash, or credit cards. In addition, the school should have scholarships or a policy to support tuition loans with 0% interest for students with difficult circumstances or a guaranteed loan for candidates enrolled at the school.

STUCHA factor has 5 observable variables (STUCHA1, STUCHA2, STUCHA3, STUCHA4, STUCHA5) and remained unchanged through Measurement Model Assessment (Table 2, 3). The result indicates that it has the fourth large influence on STUFEEL (Original Sample = 0.159 and Sig. value less than 0.05), so the hypothesis H5 is accepted. STUCHA also has an effect on STUDEC (Original Sample = 0.159 and Sig. value less than 0.05), so the hypothesis H7 is also accepted. Choosing the school that best meets students' wishes and abilities will help them develop their full potential and qualities during the learning process, helping to improve productivity and efficiency in the future. Therefore, carefully researching information related to majors and training facilities (enrolment points, study locations, learning conditions, travel and accommodation, tuition fees, study time) is students' responsibility. Universities need to coordinate with high schools to organize for students to visit the university so that they can evaluate the school's facilities and training quality. In addition, the school needs to have a team of highly qualified lecturers, diverse training programs, practical teaching methods that reflect the school's own characteristics, as well as dynamic and attractive activities such as arts, sports, and events to meet students' expectations of acquiring knowledge and skills when studying at university, thereby helping to better attract new students.

CONVEN factor has 6 observable variables (CONVEN1, CONVEN2, CONVEN3, CONVEN4, CONVEN5, CONVEN6) with CONVEN5 was eliminated to increase the quality of observed variables (Table 2). This factor has influence on STUFEEL (Original Sample = 0.145 and Sig. value less than 0.05), so the hypothesis H3 is accepted. The school needs to provide information about admission activities including facilities, training majors, conditions, methods and forms of application, tuition, scholarships, and other school services across media platforms (online and offline). Schools should regularly deploy a series of University Tour activities for high school seniors. In this event, the University should cooperate with the high schools in organizing the shuttle bus, inviting students and parents to visit the school. Parents and students will be guided by school officials to visit and explain at learning facilities, support departments, classrooms, and sports fields. It is necessary to design the route of the University Tour to ensure that parents and students are aware of the diversity of the school's fields of study. In addition, in order to increase the attention and attract students, the standees on ways to apply for university admission should be designed in large, clear, eye-catching colours on the sightseeing path of parents and students.

STUFEEL is an intermediate factor in the model to STUDEC. STUFEEL factor is composed of 4 observable variables (STUFEEL1, STUFEEL2, STUFEEL3, STUFEEL4) with STUFEEL4 variable was eliminated to increase the quality of observed variables (Table 2). STUFEEL factor has proven its strongest influence (Original Sample = 0.731 and Sig. value less than 0.05) on STUDEC, so the hypothesis H6 is accepted. For that reason, private universities need to build up 4C Marketing activities to raise students' perceptions of the school, thereby leading to new students' university selection.

In short, in the age when all information is easy to find, compare and verify, new economics students and their parents have more and more choices before applying for university. Therefore, universities, especially private schools, should focus more on marketing 4Cs activities, including understanding and satisfying the needs and desires corresponding to the characteristics of new economics students. Besides, private universities should offer reasonable tuition fees together with attractive scholarship policies, as well as create favourable conditions for students from registration to the learning process. At the same time, integrated multimedia communication should also be used to promote the school.

REFERENCE

- Bagozzi, R. and Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Sciences*, 16, 74-94
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.). *Modern Methods for Business Research* (pp. 295–336): Erlbaum, Mahwah, NJ.
- Clark, L. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7, 309-319
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.).
- Fornell, C., Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18 (1), 39-50.
- Garson, G.D. (2016). *Partial Least Squares: Regression and Structural Equation Models*. Statistical Associates Publishers, Asheboro.
- Hair, J. F., Black, W. C., Babin, B. J. et al. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLSSEM)*. Thousand Oaks, CA: Sage.
- 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*. <https://doi.org/10.1108/EBR-11-2018-0203>
- Henseler, J. and Sarstedt, M. (2013). Goodness-of-Fit Indices for Partial Least Squares Path Modeling. *Computational Statistics*, 28, 565-580.
- 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>
- Hock, M., & Ringle, C. M. (2010). Local strategic networks in the software industry: an empirical analysis of the value continuum. *International Journal of Knowledge Management Studies*, 4(2), 132-151.
- Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling*. Guildford Press.