

PalArch's Journal of Archaeology of Egypt / Egyptology

CHOICE OF HIGHER EDUCATION INSTITUTION AMONG VIETNAMESE STUDENTS: AN EXPLORATORY FACTOR ANALYSIS

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Huu Dung Hoang, Huu Tien Hoang, Quang Trung Bui, Lan Phuong Nguyen. Choice Of Higher Education Institution Among Vietnamese Students: An Exploratory Factor Analysis-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(4), 222-233. ISSN 1567-214x

ABSTRACT

The new Tertiary Education Law, being effective in 2013, has exerted a great pressure on Vietnamese public and private universities to recruit high school students. This study aims to identify factors, both personal and institution-based, influencing university selection of students via exploratory factor analysis. The developed conceptual model consisted of six determinants that directly moderate university choice including (1) characteristics of students, (2) influential individuals, (3) features of the University, (4) communicating attempt with the students of the university, (5) learning opportunities in the future and (6) career opportunities. After conducting group discussion, a dataset consisting of 382 responses from first year students from four higher education institutions located in Ho Chi Minh city, Vietnam was collected. Final results indicated that institutional characteristics are strongly involved with the selection of the university. In addition, offering of post-graduate opportunities and marketing attempts moderately contribute to university choice. Based on these results, some managerial implications were also suggested.

INTRODUCTION

According to statistics of Ministry of Education and Training (MOET) of Vietnam, in 2013, there was 1.4 million students attending entrance exam into 214 universities and 207 colleges. This figure went up to 1.5 million in 2014. Meanwhile, the permissible admission of universities and colleges for the academic year of 2013 - 2014 was just more than 600,000 students. This implied a great pressure put on students to carefully consider and attend the institutions that are best-suited for their ability.

As an effort to recruit students, colleges and universities have attempted to disseminate information and publicize themselves in various forms such as broadcasting, consulting, and participating in fairs jointly-hosted by multiple

educational institutions. However, due to different reasons, the above measure are accessible to only urban students. Limited information dissemination has made selecting a higher education institution to attend a difficult task. Over the past few years, a majority of students have chosen training institutions based on the high demand of that job in the market or the possibility of earning high income while neglecting their actual knowledge and ability. This resulted in the phenomena in which many well-performing students select universities solely based on a common trend or reputation of universities without any proper probing. All of those may lead to discouragement in later study, and in turn, quitting, unemployed graduates and dispassionate employment. (Chinh et al., 2016).

In 2013, the national Tertiary Education Law came into force, leading to the development of legislation governing university classification. This also means universities and colleges need to continuously promote education quality along with intense marketing activities to help students be fully aware of their own institutions and future study and career. Coupling with high preference of high school students to enter universities, severe competition in attracting students is expected to occur among higher education institutions in Vietnam. Therefore, what these institutions will perform to attract students and what factors affecting choices of high school students can be the utmost important matter that requires investigations from both researchers and marketers of higher education in Vietnam.

With that insight, the objective of this study is to find out key elements in marketing strategy that play an important role in university selection of high school graduates. This work is expected to benefit several aspects. Firstly, the results benefit students and their parents, student's consultant and education administrators in providing more in-depth view into choosing the right university (Rowe, 2002). High school students in general and grade 12 in particular can find useful information in choosing the right school thanks to learning factors affecting high school students to decide to study at a school. Second, the results of these studies can help parents consider and understand more about university environment when choosing. Knowing the results of these studies may help them feel confident in their ability to support their children on deciding the right school to attend. Third, universities and colleges can also benefit from findings included in this report. Knowledge about the process of choosing schools of high school students offers a deeper insight into the decision making of students and factors that significantly affect the process. This in turn assists administrators in devising effective strategies to increase enrolment as well as general scheme.

Hypothesis development

The choice of higher education institution is a long-established topic in the literature. While the topic is variedly approached, most studies agree that there are six factors that determine university choice of a student which are (1) Personal characteristics of students, (2) Influential individuals, (3) University characteristics, (4) Attempts to communicate with the students of the institution, (5) Learning/Studying opportunities in the future, and (6) Career/Job

opportunities.

Social economic status (SES)

The first and probably the most important aspect in formation of university selection is individual characteristics. As stated by Chapman (1981), ability and hobby are two decisive elements affecting university choice since high performing students are more probable to approach opportunities and to meet requirements presented by universities (Galotti & Mark, 1994). In addition, university selection has inextricably linked with the major which students are pursuing in the future. Hence, students have a tendency to choose the major which is suitable to their characteristics, hobbies and aspirations. On the other hands, social economic status (SES), an element of individual characteristics, was demonstrated to be linked with the university decision through complicated mechanisms. To be specific, students coming from different family backgrounds may make decision differently, especially when it relates to tuition and self-performance, and students having higher SES show a tendency to attending 4-year universities than other students. This is because income interacts with the operating cost and financial support to limit the unrealistic decision of students. Indeed, Davis and Vandusen (1975) has reported that high income students have a tendency to choose private university, average income students tend to choose public university and low income students usually choose public university or college. McDonough (1997) states that family income, as a part of SES, contributes to educational knowledge which strongly affects the process of making decision of students. Students who have higher income, socioeconomic status and educational knowledge usually concern more about the value which they have expected at a university than other ones. However, some researchers have found that family income is not the persuasive evidence to predict the student educational program (Hossler et al, 1989; Hossler & Stage, 1992; Paulsen, 1990) but agree that parental educational level strongly influences their children's educational plan (Manski et al., 1983).

Another component of SES, ability, is the decisive factors which directly influence the outcomes and productivity of ability test relating to the university entrance examination. Because both are widely used in university to define student's competitiveness, it was seen as a primary criteria to select students. In addition, Students pursue colleges that enroll students with similar academic abilities. Nolfi (1979) indicates that students do not want to be with others whose aptitude is very different than their own. The ability could be measured by high school academic performance, which is one of the important criteria used in higher education screening. Colleges usually enroll their expected students based on their GPA or rank in class. Each student can use this information to determine whether the universities have paid attention on him, for example, competitive rate which students expect to face, student's ability and opportunity of passing. Paulsen (1990), after analyzing the previous research, has concluded that a person is more likely to go to the university when his academic ability is better and his academic achievement is better. This is generally agreed by Hossler and Gallagher (1987) and Cabrera & Nasa (2000). The model of Kallio (1994) shows that gender has also affected the selection of students. The effects of direct factors can be considerably influenced by gender factors of students. In addition it was believed that different gender has an

indirect effect on university selection of students.

Influential individuals

Students' decisions are affected by comments and advices of friends and families on the way of selecting a university to study. Those impacts are active in numerous ways: (1) their opinions building up students' expectations about how a university is like in particular, (2) they can provide direct consultancy like the place students should pursue higher education, and (3) the place that students' relatives or friends study may affect those students' decision. It is reported in several researches conducted by private organizations that opinions and choices of freshmen's friends are most important to their decisions. (Johnson & Chapman, 1979) However, some researches on high school students' choice of universities shows that their parents actually play a more crucial role than their friends. (Tillery, 1973)

Hossler, Braxton and Coopersmith (1989) indicated that the role of parents is undeniable (Bers & Galowich, 2002). Likewise, Hossler and Foley (1995) noticed some evidence that prove high school students dependence on the inside source of information (parents and relatives) while starting the process of determining which university they study (freshmen and sophomores), but after that they create the outside source of information based on their acknowledgement and experienced people (colleagues, teachers and consultants). Paulsen (1990) concluded that a person has a strong desire to pursue higher education if their parents' education background is high, if their fathers' occupation posts are higher and if there has been parents' encouragement on them. The encouragement and support of parents is the factor that has an influence on the stage of searching and choosing of the process. This is further supported by the study of Bers and Galowich (2002) who provided information that four-year students' parents frequently played a key role in the whole process of choosing universities, constructing expectations for their children and applying a more active method in discussing a higher education plan and saving tuition cost. Similarly, Maguire and Lay (1981) emphasized that parents' education background has a great impact on the selecting process. Moreover, Litten (1983) proved that parents' education background influenced considerably on the university-selecting process in comparison with the other factors like gender and race. This mechanism is further elaborated by Johnston (2010) who proposed that parents build an important private source of prerequisite information determining the university for their children. This is also supported by Sukhawattanakun et al. (2010), who did a research on the factors affecting the choice of universities of Thailand high school students and discovered that they might also take their parents' opinions as reference for their decisions.

Other people like siblings, friends, relatives, teachers and universities' representatives (professors, staff, coaches) also influence students' university decision (Pimpa, 2005; Wagner and Fard, 2009). Friends belong to the vital source of information in the process of searching and selecting university. McDonough (1997) identified that colleagues and friends' perspective was one of the factors that "consecutively impacts" in the process of searching and choosing university of students. Lewis and Morrison (1975) included "friends"

in the list of students' trustworthy information source (Paulsen, 1990, p. 53). Rowe (2002) found that students' friends and colleagues affect that person's process of choosing university.

Choy, Horn, Nuñezand & Chen (2000) believed that "parents, colleagues, and school staff" all contribute to increasing the higher education admission rate of those who have a high potential of dropping high school. Their research showed the effect of uniform is specifically remarkable. Besides, Paulsen (1990) had a conclusion that one may have a strong desire to pursue higher education when the school consultant encouraged them to do so.

The schools' consultants provide an important source of reference for students in the process of searching and choosing school, similar to the six-market research of Litten and Brodigan (1982), high school counselor is one of the six favorite information source of students and parents in searching and applying the process. Braxton (1990) included the counselors provide the most frequent students' source of information. McDonough (1997) identified that the counselors have a proper impact on the students' process of searching and choosing universities.

The characteristics of a university

Characteristics of the university play an obviously important role in formation of student choice. Chapman (1982), Burn (2006) and Litten (1982). This category could be further classified into various indicators including quality of studying and training, lecturers, reputation, facilities, location, tuition fee, students' support policy etc.

The school quality of studying

The quality of studying of a college or a university is proved to be a crucial element in the process of determining which school appropriate to a student. Paulsen (1990) review previous researches which provide information about the quality of study that played a key role in the process of determining which school is appropriate to a student. Likewise, Cabrera et al. (2000), after reviewing other researches, concluded that the quality of an organization was considered first along the admission progress. Canale et al. (1996) discovered that "the characteristics of lecturers, fields of study provided, tuition fees and the reputation of an academy were ranked the highest position in the list of the vital universities' characteristics". They conducted a 543-junior and senior high school student –survey to identify the relative level of importance of several certain universities' characteristics that affected their decision on a potential school which met their demand. In the six-market-research of Litten and Brodigan (1982), three indicators about the quality of studying (school reputation, quality of teaching, school standards) are included in eight attributes of universities that students and parents evaluate as most important factors.

Diversification and the attraction of the majors

The attraction and diversification of the majors will become the factors that impact on the students' choice of school. The students are likely to apply to those schools that have a wide variety of majors that are more appealing and

interesting than those of other schools (Bruns, 2006). Besides, majors that meet the reality demand of society and numerous associated programs will earn more interest of the students. That is measured by the quantity and quality of school programs, which also build the prestige of the school in the public eye.

The facilities of a university

Price et al. (2003) emphasized that the facilities of each school shall impact on the students' decision on which school to pursue their higher education. The study specifically noticed that the appearance and foundation of an education organization delimitate the way they convey their messages and vision. That helps build long- term effects to students and their family along their way of choosing schools. This seems to match the research of Lopez del Puerto (2009), who demonstrated that the results of students' research were affected considerably by their perspective on higher education environment. Although this study illustrates the insignificant impact of education environment and facilities on students' satisfaction, physical environment is also counted as a factor affecting the satisfaction of post- graduate programs. This hypothesis is supported by Lau (2005) who confirmed the impact of school facilities on the Hong Kong students' choice of university. Among the factors related to the facilities, students in general would appreciate the quality of libraries' facilities rather than others while considering a school to study. Sukhawattanakun, et al. (2010) also agrees with the idea as it was pointed out that, Thailand students tend to prefer a university with a well- equipped library.

Prestige/ Reputation

The popularity of a college and the prestige of its lecturers are among elements that affect the students' school preference. Students may feel proud of being a part of a famous school or being taught by a prestigious professor. Besides, the teaching quality that is recognized and highly appreciated in public is considered to be an advantage of school to attract more admission profiles (Soutar and Turner, 2002). A reputable school may receive the positive public appraisal and have a strong impact on individuals' perception in the society. This is the factor that has direct and indirect effects to the advisory process for students while choosing the most appropriate school. Canale, et al. (1996) found that the academic fame of universities is a factor that affects the African American students' decision on applying to the school; since they believe it would help them acquire knowledge and skills of a particular field to pursue their desirable career. Students acknowledge that the reputation of their school may lead them to promising job opportunities (Freeman, 1999). Similar result was reported in several previous studies; Baird (1967) was one of the researchers who figured that a team of well- educated and prestigious professors of an academy and qualified education programs would be the main considering factors of students.

Hazelkorn (2007) reported on the linkage through which universities' ranking affected students' selection of schools. To be specific, the high reputation of alumni's achievements was the reason of freshmen applying to the school. Brewer & Zhao (2010) discovered in their research that the quality of teaching

played a key role in enhancing the prestige of universities as well as their brands. Fehlen (2011) cited a number of UCLA reports based on their 200,000-freshmen-survey of some colleges. 62% of the attendees responded that the high reputation of a school would be the core factor which affected their choice. This could be explained by potential benefits of studying in a reputable school. Besides, recruiters frequently consider outstanding applicants from high-quality schools.

Kitsawad (2013) confirmed that almost all of the students in public and private high schools consider their choice based on every aspects of any famous school. A similar discovery was reported by Bowers & Pugh (1972), who identified that both students and parents appreciated the prestige of a college and its majors were their main considering factors. Besides, Raley (1972) found that the prestige and reputation were pivotal among four factors that impact on students' decision.

Professors/ Lecturers

In education, the quality of teachers is thought to be a vital element in advancing the education quality and in promoting the skilled human resource in the country. The study of Biggs (1999) also emphasized the role of professors in helping students achieving the target and expectation of the course. The quality of a school is reflected by the teaching competence and the prestige level of its lecturer. According to Tho & Trang (2007), the proficiency of a higher education teacher includes three components. The first one is a teacher's skills which encompass specialty knowledge, communication capacity, and the extent of his contribution to the course. The second major factor is how well the teacher is able to organize a course. The final factor is the level of motivating the participation among the students and between students and teachers. The relative importance of different dimensions in the process of selecting a college is explored in the study of Canale et al. (1996) in which 76% of high school juniors and seniors evaluated "excellent teachers" as an important reason to their decision.

Financial support

The living expenses and tuition fees are considered to be concerning factors for students in choosing a college. It can be seen that students who attain high GPA expect about scholarships more than those who have lower scores. Similarly, students from low-income households are expected to achieve scholarships more than the others. Public high school graduates and students whose major is education are more likely to be granted scholarships. According to Schoenherr (2009), financial aid affects markedly students' school choice. He elaborated that although the prestige and fees of a school are crucial, they seem to be inferior in comparison to advantages gained from the financial aid granted for outstanding students. Steiner & Wrohlich (2012) conducted a research on the efficiency of the state's student financial support program (BAfoeG) provided by German government. The results showed that the increasing aid would have a considerable impact on the admission rate to German colleges. Future students will also receive instruction to register in advance if the number of aids is high.

Vossensteyn (2005) asserted that the concern of having to repay debts after graduation refrains students from loaning. Long (2008) clarified that financial aid might help increase college enrolment. Nevertheless, if the aid is inadequate, students would have to take out a loan or find a job to afford the study fees. That may leave a negative impact on their study reports and reduce their opportunities after graduation.

Location

The location of colleges is an important factor that affects students' choice of school (Litten and Brodigan, 1982; Ihlandfeldt, 1980; Gilmour et al, 1978; Lewis và Morrison, 1975). The importance of location of a university may be comparable to that of the quality of the institution (Kitsawad, 2013). Hossler and Gallagher (1987) observed that students, whose accommodation is the neighborhood of a college, tend to register to study higher education (it may not be the school they live nearby). It is reported that urban and outskirt high school graduates have more opportunities to pursue higher education than rural ones. Armstrong (1997) showed that a propitious location was one of the three key factors that influenced on students' applying decision to Northern Texas College. Clagnett (1999) discovered that location was one of the main reasons determining students' decision. Sukhawattanakun et al. (2010) realized that Thailand students may apply to the school located in an undisturbed area. Hourigan (2011) discovered from his research that the role of location was obviously of students' top concerns while considering a place to study. However, importance of location to their decision may vary for students from different gender, race, and financial status.

To sum, it can be obviously seen that those influential individuals are a collection of indicators including the facility conditions, reputation of the institution and professors, the quality of teaching, supporting policies (scholarship, tuition fee remission, dormitory, and credits), appropriate geographical location, programs that aid in development of communication skills and other soft skills, and finally, tuition fee.

Attempts to communicate with students from different colleges

Communication and promulgation has been established as the common tool for colleges to disseminate information to their potential students. (Hossler & Foley, 1995). Such efforts to communicate with students have become exceptionally important due to the increasing competition between education organizations. Researches provide information about several means of media in marketing higher education such as placing ads on newspaper, magazine, radio programs, websites, etc.), public relation activities, promotion activities, direct sales and marketing activities, and other particular activities in education (admission brochure, school enrollment and job orientation exhibition, school conference, etc.) .These means are not only information channels for potential candidates, but also methods of positioning and branding in the public eye. Among communication means, websites has been emphasized by Hossler (1999) in extending educational services to potential students in a quick and timely manner.

Another important channel of communication, according to Johnston (2010) is information obtained from interpersonal relationships. Among them, information from parents is a key source determining the choice. According to Litten and Brodigan (1982), the consultancy in high school is one of the six most important information sources of students and parents (Paulsen, 1990). Paulsen (1990), after examining several previous studies, reaffirmed that information privately obtained from staff, alumni, current students, instructors, and parents are crucial in selection of higher education institutions of student. Both channels have been empirically supported by Telli Yamamoto (2006) who examined the criteria determining students' choice of school in Turkey. It was found that beside the external effects, such as means of media utilized by the college representatives or the examining, screening and arranging student systems, families also have a strong effect on students' choice of college.

Future study opportunities

The trend of undergraduate students continuing studying post-graduate programs is a practical demand and an important indicator in building high quality work force. Besides, students, who advance their field knowledge and enhance their living conditions, bring tremendous merits to the society. It is widely recognized that a graduate qualification (Master or PhD) is an advantage in the Vietnamese job market. As the knowledge economy develops, employers require increasing competence in workers. This generates demand for students to pursue higher education after graduation. Indeed, according to Ministry of Education and Training of Vietnam (2019), the ratio of enrolment in Master study over graduation in the undergraduate level was approximately 17% in the academic year of 2016-2017 and remained steady at this level in the following academic year. In addition, the opportunities and possibilities offered for undergraduates to continue studying in foreign institutions are also an important factor. Recent global education trends have shown that there have been more study opportunities with a wide variety of training types for all learners for different learners' competence and potentials. A number of foreign colleges have cooperated with Vietnamese education partners to extend the students' chance to study abroad. Studying abroad offers students an opportunity to experience a completely new education system and may transform students into active learners with strong self-acknowledgement and language skills. Such benefits of study graduate programs have suggested potentiality of further study an important criteria in selecting a higher education institutions.

Career opportunities

In general, students choose higher education in an effort to have a high income job after graduation. Career opportunities, in a broader sense, also serve the same purpose of securing high income and benefits. Therefore, this factor should be considered as a potential indicator for university choice (Maringe, 2009). Paulsen (1990) constituted the influences of job opportunities their relationship with students' school choice and emphasized that job opportunity is the main factor forecasting the register decision. It can be seen that a person shall have a desire to pursue higher education "when the economic benefits of

that is highly recognized”.

Students are usually appealed to post-graduate programs owing to a great career thereafter. They are also interested in what they inherit from what the graduates have built and their colleges have participated in and contributed to the society. Researchers discovered that among those subgroups of Asian Americans, “students may consider a well-paid job or high- quality post-graduate programs are equally important when choosing a school to study” (Teranishi et al., 2004).

Most of the students concentrate on the job market so as to identify the need of human resource in any particular field. That leads to concerns on those study programs which offer a high chance of work for graduates. This explains why arranging jobs is a highly- evaluated school offer among those important criteria of students’ traditional way (Hossler & Gallagher, 1987). Paulsen (1990) listed “available jobs” in top ten most frequent properties determining students’ choice of school. He summarized research related to college features that distinguish “qualified” and “not qualified” students in the stage of selecting schools. “The high chance of graduates’ working opportunity” becomes a prerequisite with an average score of 3, 5202 (Keling, 2006). This was proved to have a correlation between job opportunities and the choice of college.

In the six-market research of Litten and Brodigan (1982), career is included in the list of eight attributes that are most concerned by both students and parents (Paulsen, 1990). Likewise, previous researches (Moore and Elmer, 1992; Sanders, 1990; Swensen, 1998; Winston, 1999), showed that students report a great concern on the job opportunity guarantee after they finish a bachelor program.

Based on these reviews, the following conceptual model is proposed.

METHODS

The objective of this study was to determine and evaluate the elements of the marketing strategy of the chosen universities affecting the choice of the students. For example, the independent factors include (1) characteristics of students (2) influential individuals, (3) features of the University (4) communicating attempt with the students of the university (5) learning opportunities in the future, (6) career opportunities; and dependent factor: the decision to select university. The procedure consisted of two phases. The first Phase (Preliminary study) was conducted through qualitative methods to explore, adjust and supplement the observed variables and measure the concept of the study. The study was done through techniques discussed bilaterally (interviews and discussions). The second phase (Formal study) was done by the quantitative research methods, with interview techniques through survey questionnaires (the scales have been adjusted after the implementation of Phase 1). The purpose of this phase is to test the raw data, reliability, the value of convergence and discrimination of the concept of the study; simultaneously testing the suitability of the models and hypotheses.

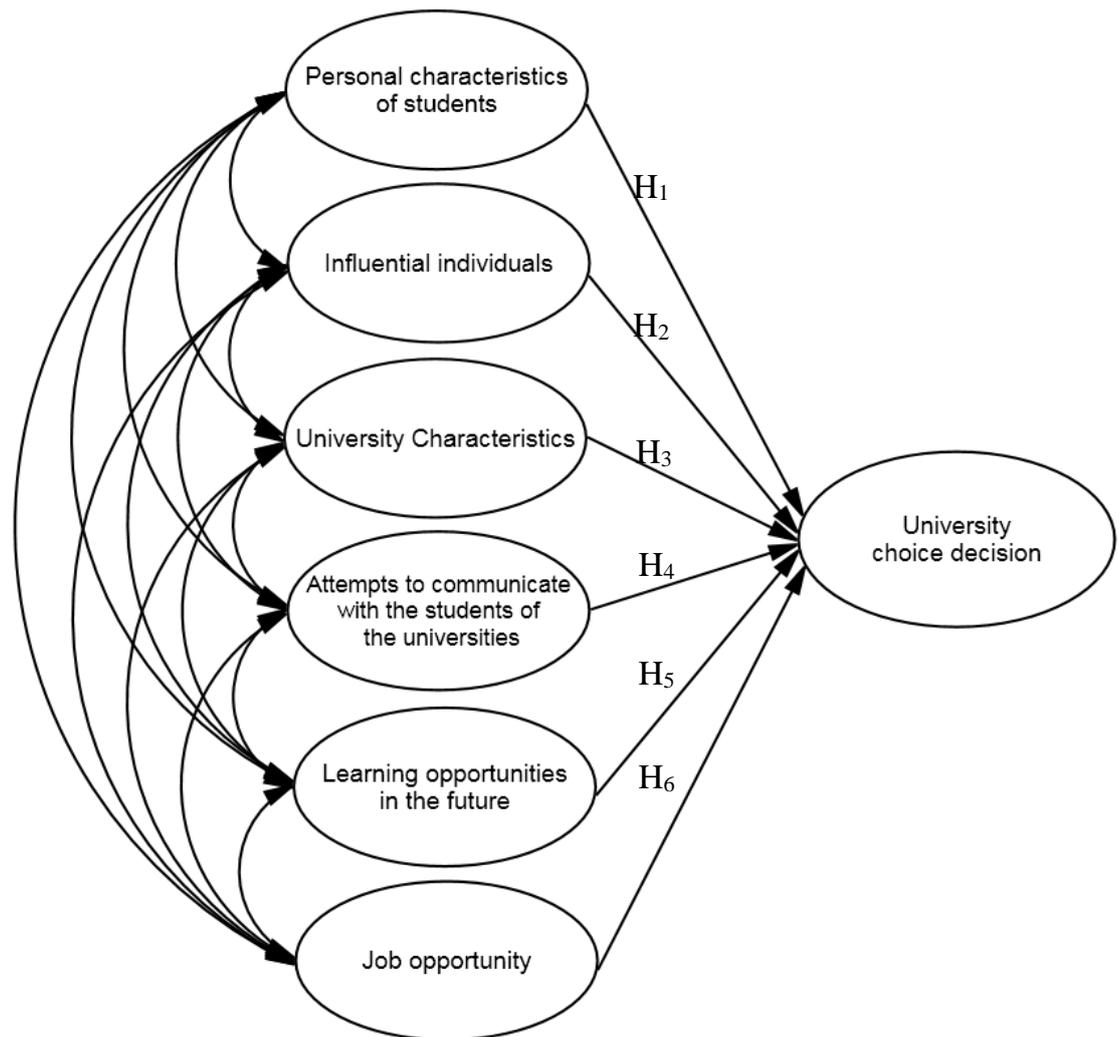


Figure 1. Research model

Qualitative research is one of the ideal methods to explore feelings, emotions, and desires of the people or their behavior. In this study, group discussion was performed to review several theories including theory selection, behavioral theory and a comprehensive review of literature to construct the concepts (factors) that affect school choices. Involved participants in the discussion consisted of experts and experienced professionals in the field of higher education in general and selected university in specific (Morgan et al., 1998). This approach is the basis for the formal study was conducted through quantitative research method. The procedure of the focus group discussion is as follows. Fifteen involved participants were informed about the purpose of the study and received guidance on the college entrance requirements in 2015. The discussions are recorded and carefully conducted. During the discussion, the researchers encouraged the participants to share their thinking, feeling or consideration to select the universities. They were asked to reorder the features, characteristics based on the level of most important to least. In addition, the researcher also called on the participants list what will affect them the most in making this choice. The results of the focus group discussions will form a list of factors that affect students when choosing the university and will be used to

develop a questionnaire to collect quantitative data.

The questionnaire consisted of 4 parts. The first part aims to investigate current situation and preference of the national university admission. The part includes 4 questions regarding how students assess the examination, and their current higher education organization. The second part has the purpose of determining strategic elements of the universities marketing that affect the selection of students to choose universities in Vietnam. This section contains a total of 38 questions spanning across 6 dimensions. 5-point Likert scale was applied in the questionnaire ranging from 1 indicating 'very unimportant' to 5 representing 'very important'. The third part involves determining decision on university choice. This part comprises three questions. All questions are asked in a certain time period for those asked to indicate their opinions. Scale questions around 5 point Likert was applied in the previous question. The last part involve collecting personal Information.

Quantitative research is useful when it comes to studying factors that influence a particular result or the impact of intervention on a certain issue through economic policies. The quantitative approach is the most appropriate method for confirming the hypotheses. In this study, quantitative research methodology was implemented by means of direct interviews freshmen who enrolled in non-public universities through detailed questionnaires to measure impact magnitude of elements drawn from qualitative research. The data was then analyzed through Reliability analysis via Cronbach's Alpha and exploratory factor analysis to find out the determinants of university choice.

Exploratory factor analysis is used to figure out the new variables or to reduce redundant variables, as well as to find the component elements measuring this variable. The aim of EFA is to assess the value of convergence and value of measuring discrimination. The method allows determination of a set of shortened observed variables and shift the items measuring a variable into groups. In EFA, extraction method Principal Components Analysis (PCA) accompanying with Varimax rotation is the most commonly used process. Varimax orthogonal rotation is to discover that the results are more than one factor. After using this rotation, the perpendicular factors should be uncorrelated with each other helps to run the regression model in steps avoiding multicollinearity.

According to Hair et al (1998), factor loading of larger than 0.3 is considered the minimum level accepted to ensure the practical implications of EFA and factor of >0.3 . In addition, to assess the appropriateness of EFA, three other conditions should be fulfilled. First, the KMO (Kaiser-Meyer-Olkin) should be larger than 0.5. Second, Bartlett's test of sphericity should be statistically significant, which is indicative of no general correlation variations. Third, the cumulative sums of squared loadings should be larger than 50%.

Population and Sample of the Study

Data is collected through surveys of students using questionnaires distributed directly at Nguyen Tat Thanh University, Hong Bang International University,

Hoa Sen University and HCMC University of Technology. All three institutions are located in Ho Chi Minh City, Vietnam. After obtaining permission of the four Rectors of the above non-public universities, the elements of the marketing strategy that affect the university choices was determined.

This study used non-probability - convenience sampling method, because it suits the purpose, budget and time frame of the study. The advantage of this approach is that researchers can easily access the research subject and that it allows for coping with limited budget and time. In terms of sample size, according to Hair et al. (1998), the adequacy of number of objects is crucial to determine accurate and sufficient interpretations. Conversely, if the object exceeds the number of samples required, it would waste resources and time for research.

According to Tabachnick and Fidell (1996), to analyze regression with best results, the sample size should satisfy: $n \geq 8k + 50$ (where n is the sample size, and k is the number of independent variables). Following this formula, the acceptably minimum sample size is calculated to be 352 participants. To account for invalid responses and non-responses, 400 questionnaires were sent to students of selected universities as sample sites within 4 weeks, where each site received 100 forms. After removing the unsatisfactory answers, 382 replies was used for data entry and analysis, achieving the response rate of 95.5%.

ANALYSIS RESULTS

The data, after finalized, was subject to analysis. The procedure is described as follows.

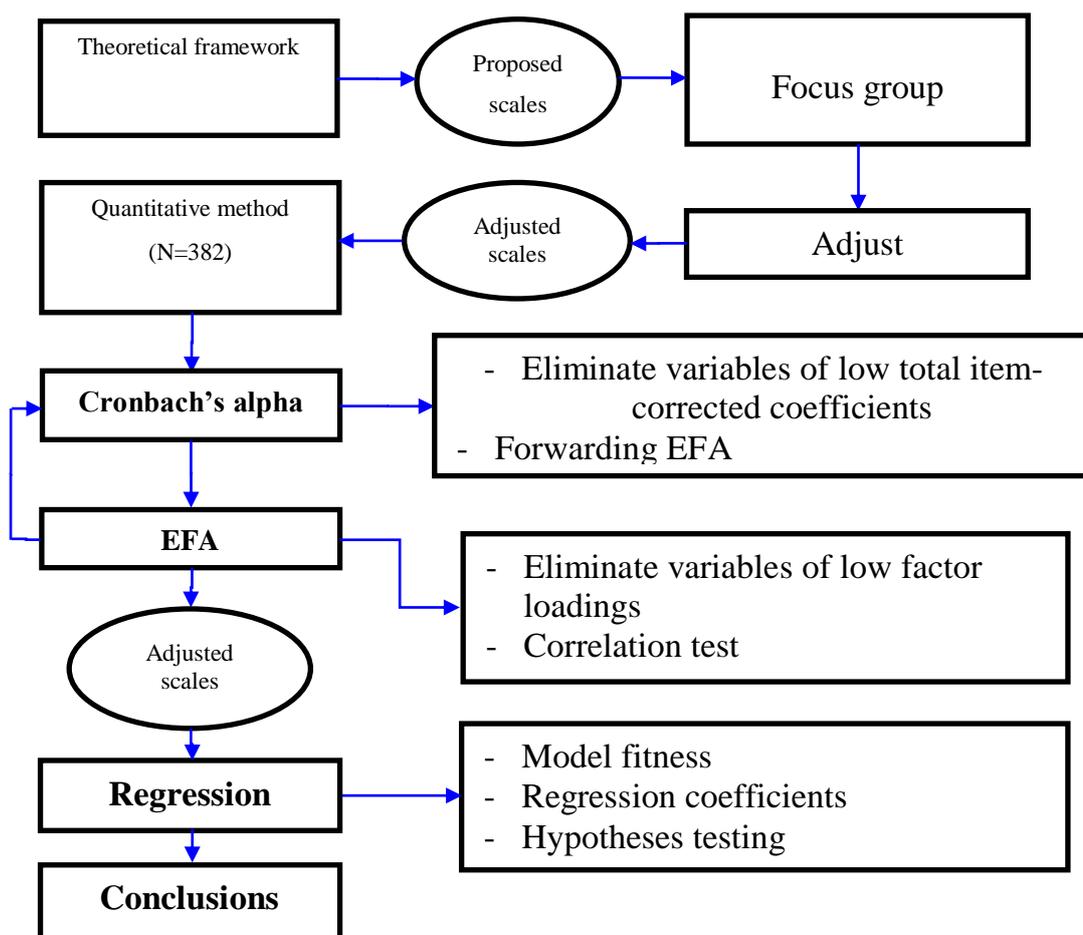


Figure 2. Research procedure

The scales were tested reliability through Cronbach's alpha coefficients using statistical software SPSS version 20.0. The results were presented as follows.

Table 1. Cronbach's alpha coefficients of scales

Variables	Cronbach's Alpha	No. of observed variables	Coded
Personal characteristics	0.869	5	PER
Influential individuals	0.878	6	INF
University characteristics	0.937	10	UNI
Communication attempts	0.917	7	COM
Higher studying opportunities	0.902	4	SO
Career opportunities	0.843	6	CO
University choice	0.737	3	CHOICE
All scales	0.869	41	

Besides, regarding Corrected Item-Total Correlations, the results indicated that the author should not remove any observed variables (all variables are greater than 0.4, in terms of corrected item-total correlations). Thus, we can conclude that the measurement scale used to collect the data of research mode is of very high standard.

Table 2. Corrected Item-Total Correlation

	Corrected Item-Total Correlation
PER1. Your academic results are appropriate with your chosen university and major.	.817
PER2. Your personality and talents are appropriate with your chosen university and major.	.844
PER3. The university/major meets your preference and expectations.	.695
PER4. The university/major is suitable for your age and gender.	.692
PER5. The university/major is affordable for our family's financial ability.	.459
INF1. Your parents desire to see you studying in this university.	.792
INF2. Your peers/friends suggest you to study in this university.	.838
INF3. Your high school teachers advise you to study in this university.	.621
INF4. Your siblings introduce this university to you.	.732
INF5. Career consultants advice you to study in this university.	.659
INF6. Senior students of the university introduce the school to you.	.471
UNI1. Facilities, infrastructures and modern teaching equipment offer best conditions for studying (campus facility, lecture hall, library, assisting equipment...)	.699
UNI2. The university is well-known for its academic reputation.	.718
UNI3. The lecturers working at the university are outstanding.	.655
UNI4. Education and training quality of the university is socially recognized.	.775
UNI5. Supporting policies of the university: scholarships, tuition remission, dormitory support, credit terms...	.841
UNI6. Convenient location	.777
UNI7. Studying environment and surroundings (safety level, teachers-students connections, relationships between classmates and schoolmates)	.760
UNI8. Various majors that meet social requirements.	.778
UNI9. There are syllabus for developing communication skills in English and various courses of soft skills training	.810
UNI10. Reasonable tuition and other school's fees	.640
COM1. The university is introduced to students through mass media activities	.784

COM2.The university's website provides adequate information for students.	.828
COM3.“Annual guideline for admission” gives details information about the university's recruitment.	.757
COM4.Students are provided with the university's information through printed advertisement, television commercials...	.610
COM5.Information given in catalogs, leaflets, banners is approachable to students	.599
COM6.Students participating in sports/music events or social works can be provided with the university's information.	.839
COM7.Students get information directly on school visit.	.804
SO1.Opportunity for studying and researching at the university after graduated.	.761
SO2.Network with the most prestigious universities nationally and internationally after graduated.	.728
SO3.Opportunity to study and research abroad.	.849
SO4.Opportunity to participate in cooperation programs between the university and foreign partners.	.794
CO1.Commitment on jobs/research selection after graduated	.752
CO2.Availability of job offers after graduated	.759
CO3.High income jobs after graduated	.808
CO4.High social class after graduated	.380
CO5.Desired career path	.633
CO6.Inter-relations between the university and enterprises	.446
CHOICE1.Students have been admitted to the university they desired to study in.	.734
CHOICE2.Students will introduce the university to more and more people.	.468
CHOICE3.Students are willing to offer advice and sharing for friends and relatives to choose the university in the future.	.510

After inspecting coefficient Cronbach's alpha and corrected item-total correlations, the next step is to conduct factor analysis aiming at checking whether the observed variables in the scales above split into groups of new elements or not. This is to assist the subsequent removal of the observed variables that are unsatisfactory for the purpose of ensuring that the scale is homogeneous.

EFA for independent variables

Initially, the factorability of all 38 items was examined. Several well-recognized criteria for the factorability of a correlation were used. Firstly, the KMO measure of sampling adequacy was 0.771, higher than the recommended value of 0.6, and Bartlett's test of sphericity was significant $p=.000 < 0.05$.

Table 3. KMO and Bartlett's Test for Independent Variables

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.771
Bartlett's Test of Sphericity	Approx. Chi-Square	12841.336
	df	703
	Sig.	0.000

However, there were five items were separated from their major group and gained inappropriate loadings (see table below). Therefore, the author decided to exclude the above two factors from the component matrix, in order to attain a better matrix for components rotation and conclude the best factors.

After modifying, the results of final EFA included 33 items remaining in rotated components matrix and drawing a rather well-organized and reasonable arrangement of factors. Cumulative % = 72.449 means that the first 6 variables can explain 72.449% data inversion. KMO = 0.779 (> 0.5, greater than the initial KMO 0.771 before variables exclusion). Therefore, the components were suitable for rotating and finding out their factor loadings. Besides, results of exploring factors of research model illustrated in table below. Accordingly, factor loadings of each component scale are all greater than 0.5, and the components focused on explaining the meaning of the scales. This suggests that all components are acceptably representative variables of the scales.

Table 4. Rotated Component Matrix

	Component								
	1	2	3	4	5	6	7	8	9
UNI5.Supporting policies of the university: scholarships, tuition remission, dormitory support, credit terms...	.874								
UNI9.There are syllabus for developing communication skills in English and various courses of soft skills training	.858								
UNI6.Convenient location	.833								
UNI4.Education and training quality of the university is socially recognized.	.820								
UNI8.Various majors that meet social requirements.	.813								
UNI7.Studying environment and surroundings (safety level, teachers-students connections, relationships between classmates and schoolmates)	.782								
UNI2.The university is well-known for its academic reputation.	.774								
UNI1.Facilities, infrastructures and modern teaching equipment offer best conditions for studying (campus facility, lecture hall, library, assisting equipment...)	.758								
UNI3.The lecturers working at the university are outstanding.	.705								
UNI10.Reasonable tuition and other school's fees	.664								.553
COM2.The university's website provides adequate information for students.		.882							
COM6.Students participating in sports/music events or social works can be provided with the university's information.		.875							
COM7.Students get information directly on school visit.		.869							
COM1.The university is introduced to students through mass media activities		.849							

COM3.“Annual guideline for admission” gives details information about the university’s recruitment.		.803							
COM4.Students are provided with the university’s information through printed advertisement, television commercials...		.710							
COM5.Information given in catalogs, leaflets, banners is approachable to students		.695							
PER2.Your personality and talents are appropriate with your chosen university and major.			.899						
PER3.The university/major meets your preference and expectations.			.898						
PER1.Your academic results are appropriate with your chosen university and major.			.897						
INF3.Your high school teachers advise you to study in this university.			.628						
PER4.The university/major is suitable for your age and gender.			.613						
CO3.High income jobs after graduated				.922					
CO2.Availability of job offers after graduated				.922					
CO5.Desired career path				.827					
CO1.Commitment on jobs/research selection after graduated				.711					
SO3.Opportunity to study and research abroad.					.884				
SO4.Opportunity to participate in cooperation programs between the university and foreign partners.					.869				
SO1.Opportunity for studying and researching at the university after graduated.					.851				
SO2.Network with the most prestigious universities nationally and internationally after graduated.					.821				
INF6.Senior students of the university introduce the school to you.						.754			
INF4.Your siblings introduce this university to you.						.725			

INF5.Career consultants advice you to study in this university.						.705			
INF2.Your peers/friends suggest you to study in this university.						.675			
INF1.Your parents desire to see you studying in this university.						.670			
PER5.The university/major is affordable for our family's financial ability.							.858		
CO4.High social class after graduated								.823	
CO6.Inter-relations between the university and enterprises								.615	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.									
a. Rotation converged in 6 iterations.									

Table 5. Adjusted KMO and Bartlett's Test for Independent Variables

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.779
Bartlett's Test of Sphericity	Approx. Chi-Square		11296.859
	df		528
	Sig.		0.000

Table 6. Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.812	20.642	20.642	6.153	18.644	18.644
2	5.210	15.788	36.430	4.764	14.437	33.082
3	5.007	15.173	51.603	3.826	11.595	44.677
4	3.170	9.606	61.209	3.184	9.648	54.325
5	2.252	6.824	68.034	3.129	9.482	63.808
6	1.457	4.415	72.449	2.852	8.641	72.449
7	.958	2.904	75.353			
...						
33	.037	.111	100.000			

Table 7. Adjusted Rotated Component Matrix

	Component					
	1	2	3	4	5	6
UNI5.Supporting policies of the university: scholarships, tuition remission, dormitory support, credit terms...	.871					
UNI9.There are syllabus for developing communication skills in English and various courses of soft skills training	.855					
UNI6.Convenient location	.836					
UNI4.Education and training quality of the university is socially recognized.	.830					
UNI8.Various majors that meet social requirements.	.802					
UNI2.The university is well-known for its academic reputation.	.792					
UNI7.Studying environment and surroundings (safety level,	.782					

teachers-students connections, relationships between classmates and schoolmates)						
UNI1.Facilities, infrastructures and modern teaching equipment offer best conditions for studying (campus facility, lecture hall, library, assisting equipment...)	.767					
UNI3.The lecturers working at the university are outstanding.	.702					
COM2.The university's website provides adequate information for students.		.882				
COM6.Students participating in sports/music events or social works can be provided with the university's information.		.881				
COM7.Students get information directly on school visit.		.871				
COM1.The university is introduced to students through mass media activities		.857				
COM3.“Annual guideline for admission” gives details information about the university's recruitment.		.806				
COM5.Information given in catalogs, leaflets, banners is approachable to students		.695				
COM4.Students are provided with the university's information through printed advertisement, television commercials...		.691				
PER1.Your academic results are appropriate with your chosen university and major.			.918			
PER2.Your personality and talents are appropriate with your chosen university and major.			.911			
PER3.The university/major meets your preference and expectations.			.861			
PER4.The university/major is suitable for your age and gender.			.724			

CO3.High income jobs after graduated				.937		
CO2.Availability of job offers after graduated				.920		
CO5.Desired career path				.810		
CO1.Commitment on jobs/research selection after graduated				.804		
SO3.Opportunity to study and research abroad.					.883	
SO4.Opportunity to participate in cooperation programs between the university and foreign partners.					.867	
SO1.Opportunity for studying and researching at the university after graduated.					.847	
SO2.Network with the most prestigious universities nationally and internationally after graduated.					.818	
INF5.Career consultants advice you to study in this university.						.772
INF4.Your siblings introduce this university to you.						.768
INF6.Senior students of the university introduce the school to you.						.745
INF2.Your peers/friends suggest you to study in this university.						.689
INF1.Your parents desire to see you studying in this university.						.683
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 6 iterations.						

Therefore, based on finalized rotated component matrix above, the factors influencing university choice of students can be divided into 6 factors groups as follows:

Table 8. Factors grouping after EFA

Factors	Observed variables	No. of variables	Coded
University characteristics	UNI.5, UNI.9, UNI.6, UNI.4, UNI.8, UNI.2, UNI.7, UNI.1, UNI.3	9	X1

Communication attempts	COM.2, COM.6, COM.7, COM.1, COM.3, COM.5, COM.4	7	X2
Personal Characteristics	PER.1, PER.2, PER.3, PER.4	4	X3
Career Opportunities	CO.3, CO.2, CO.5, CO.1	4	X4
Higher studying Opportunities	SO.3, SO.4, SO.1, SO.2	4	X5
Influential individuals	INF.5, INF.4, INF.6, INF.2, INF.1	5	X6

The results were to be used for regression function building to examine the correlation and impact of factors explored to the dependent variable.

1.1. EFA for dependent variable

EFA for dependent variable was accordingly performed in order to make sure its capability to perform its role in the regression model. Several well-recognized criteria for the factorability of a correlation were used. Firstly, the KMO measure of sampling adequacy was 0.570, above the recommended value of 0.6, and Bartlett's test of sphericity was significant $p = .000 < 0.05$

Table 9. KMO and Bartlett's Test for Dependent Variable

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.570
Bartlett's Test of Sphericity	Approx. Chi-Square	327.661
	df	3
	Sig.	0.000

Regression analysis

Six factor groups of the scale are used to examine the factors affecting the level of student satisfaction. The final research model after factors adjusted and regression function built, as well as the results of hypotheses testing. Based on statistical requirements and necessary steps to conclude the construct model of this research, the factors which gained the p-value greater than 0.1 (e.g. the significance level for the hypothesis to be approved is of 90%) were all said to have no effect on the quality assurance practices and therefore should not be included in the final research model. All hypotheses and their factors will be further highlighted the level of impact and discussed for implications in the following sections. The table below summarized the hypotheses testing results.

Table 10. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.768 ^a	.590	.583	.64550983	1.213
a. Predictors: (Constant), X6.Influential Individuals, X5.Higher Studying Opportunities, X4.Career Opportunities, X3.Personal Characteristics, X2.Communication Attempts, X1.University Qualifications					
b. Dependent Variable: Y.University Choice					

Table 11. ANOVA test for regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	224.744	6	37.457	89.894	.000^b
	Residual	156.256	375	.417		
	Total	381.000	381			
a. Dependent Variable: Y.University Choice						
b. Predictors: (Constant), X6.Influential Individuals, X5.Higher Studying Opportunities, X4.Career Opportunities, X3.Personal Characteristics, X2.Communication Attempts, X1.University Qualifications						

From the 2 tables above, the adjusted R² value reached 0.583, which indicated that model can explain 58.3% of the change of the “university choice” variable. In the ANOVA table, the F value has Sig. = 0.000, so the multiple linear regression model is built in accordance with data at 99% confidence level.

Table 12. Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.210E-017	.033		.000	1.000
	X1.University Qualifications	.714	.033	.714	21.596	.000
	X2.Communication Attempts	.131	.033	.131	3.948	.000
	X3.Personal Characteristics	.056	.033	.056	1.687	.093
	X4.Career Opportunities	.081	.033	.081	2.456	.014
	X5.Higher Studying Opportunities	.212	.033	.212	6.409	.000
	X6.Influential Individuals	.090	.033	.090	2.726	.007

After conducted the regression step, it is evident that only four independent factors can be approved to have impact on the dependent variable F. All factors were proved to affect F at significant level of 90% (all t-values are lower than 0.1). Therefore, we concluded that there are six significant variables in the final model.

The final research model after factors adjusted and regression function built, as well as the results of hypotheses testing. Based on statistical requirements and

necessary steps to conclude the construct model of this research, the factors which gained the p-value greater than 0.1 (e.g. the significance level for the hypothesis to be approved is of 90%) were all said to have no effect on the quality assurance practices and therefore should not be included in the final research model. All hypotheses and their factors will be further highlighted the level of impact and discussed for implications in the following sections. The table below summarized the hypotheses testing results

Table 13. Hypotheses testing results

Hypotheses	Factors	B	p-value	Result
H1	X1.University Qualifications	0.714	0.000	Approved
H3	X2.Communication Attempts	0.131	0.000	Approved
H2	X3.Personal Characteristics	0.056	0.093	Approved
H6	X4.Career Opportunities	0.081	0.014	Approved
H5	X5.Higher Studying Opportunities	0.212	0.000	Approved
H2	X6.Influential Individuals	0.090	0.007	Approved

CONCLUSION

Based on developed theoretical models, several scale factors affecting university choice of students in HCM City have been identified. The analytical results quoted EFA into 6 groups containing a total of 33 elements. This study has also successfully built a regression model. The hypothesis testing results showed that the theoretical models achieved is compatibility with data. There are 6 groups of factors that affect the decision of students from most influential to least, as follows: (1) University characteristics, (2) Higher Studying Opportunities, (3) Communication Attempts, (4) Influential Individuals, (5) Career Opportunities, and (6) Personal Characteristics. Based on these results, several recommendations could be proposed.

First, the research results showed that element is the most influential factor of the selection of university of students, and in turn, enrolment. Therefore, strict management of the specific elements that build up the university's characteristics is critical. Among them, the management of teaching and learning is the approachable aspect that could be improved through various ways such as Improving the sense of responsibility of teaching staff, adopting new teaching methods appropriate for specific majors and subjects, developing training programs catering to the needs of the labor market and investing in infrastructure, machinery and equipment for teaching.

Second, educational institutions should promote branding and marketing activities to raise effectiveness of communication attempts with students. Brand development has been the concern of many universities and colleges today and the coordination of various aspects. However, due to the particularity of education services in the field of marketing, it is difficult to maintain regular

promotional activities. To be specific, the attention of students can only be promoted when their educational needs arise in a particular period of time in the year owing to the nature of the Vietnamese education system. Thus, it is important to use mass media in the correct “peak season”. Means of implementing marketing strategies may include newspaper marketing, media and public relation activities.

Third, it is advisable to expand training programs and cooperation to introduce post-graduate education for students. Universities, colleges should actively develop flexible types of training and exchange programs. The schools should actively create extensive relationships with prestigious universities around the world to facilitate university student or graduates to get the opportunity to study abroad through scholarships or through own capital. Development of collaborative and flexible training program such as $x + y$ programs (where the student studies domestically for x years, gets transferred and continues studying abroad for another y year) is also a preferred direction.

Fourth, offering various career and job opportunities is also a way to promote the image of the education institution. Employment opportunities play an influential role that affect the trend of school choice of students. The question of “what to do, where to work” after graduated is one of the major concerns of students. Therefore, universities and colleges should actively cooperate with businesses and enterprises to find out their needs and coordinate labor organizing practice and support students find suitable employment. Cooperation activities will help human resource training quality match the needs of the enterprise, to create jobs for students and the development new principles to meet the needs of social development. Universities and colleges could also send students to work at the company as an intern, connecting to a wide network of businesses to find opportunities offering for students until they successfully seek a stable job.

Fifth, establishment of counseling centers and job placement for students in universities and colleges campus is also suggested. These centers act as a bridge between students and employers, which provides recruitment information, training, knowledge and skills to help students in the job search process. Besides, the center needs to seek multiple sources of employment opportunities for part-time students can work while studying to gain practical experience and open up employment opportunities.

Sixth, promotion and marketing strategies should also target influential individuals. The results of this study’s analysis showed that many students consult with individuals with influence in critical decisions. To be specific, often times, the parents, relatives, and teachers can have the most profound impact on university selection. To this end, the universities and colleges should actively promote the image, their brand and announced the benefits of the school to parents, students, and teachers through meetings and orientation seminars or through media such as radio, newspapers, and magazines.

Lastly, to improve enrolment, it is also possible to alter the thinking process for each student because the student is not only influenced by many external factors,

but also by their own perceptions. Identifying possibilities and personal interests of the students is also important to the universities. Therefore, universities and colleges should arrange admissions counseling, enhance marketing communications activities for career guidance, career opportunities to help students with a comprehensive view of profession which they will do in the future; at the same time, strengthen branding and ensure brand awareness in the university strategic marketing.

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