

## Factors Affecting Hanoi Students ' Decisions to Choose University to Study Information Technology Major

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### ABSTRACT

This study explores the factors influencing Hanoi high school students' decisions to choose a university for studying Information Technology (IT) amidst the rapidly growing IT industry, especially following the 4.0 industrial revolution. The study employs quantitative methods, analyzing a sample of 241 students currently enrolled in IT programs across Hanoi. Key findings reveal that factors such as tuition fees, family recommendations, alumni influence, and university reputation significantly impact students' intentions and decisions. Interestingly, while university reputation positively influences students' intentions, it does not necessarily lead to their final decision to enroll. In contrast, financial considerations and advice from trusted sources play a more pivotal role. Additionally, the study finds that gender and admission scores do not significantly affect the decisionmaking process for these students. The results offer practical insights for universities to refine their recruitment and marketing strategies, ensuring they align with the real-world factors that influence student choice. By understanding these dynamics, universities can better attract and retain students in IT programs, thereby meeting the growing demands of the IT sector

## **INTRODUCTION**

According to the report of Ms. Nguyen Thi Thu Giang - Vice President and General Secretary of the Vietnam Software and IT Services Association (VINASA), Vietnam will have more than 67,000 enterprises operating in the IT industry by 2022. The salary of IT human resources is about 7,000 USD - 12,000 USD annually and Vietnam has reached 1,167,769 IT human resources by 2021. Vietnam ranked 29th in the world in the Developer Skills ranking according to the 2019 Skills Value Report and ranked 2nd in the world ranking of the best freelancer survey (after the United States). In 2020, Vietnam ranked 2nd in AsiaPacific and 22nd worldwide according to the Global Skills Index and also ranked 2nd in software outsourcing destinations in Southeast Asia (SEA) by 2022 according to the Accordance Global Software Outsourcing Trends and Prices Guide (T. T. Nguyen, 2023).

Based on statistics from the Ministry of Education and Training of Vietnam, in the 2019-2020 academic year, Vietnam had more than 242 universities (excluding universities related to the field of national security and defense) and 145/242 universities with majors related to IT (Oanh, June 2023). In addition, Vietnam has 442 vocational training schools offering IT courses/training programs with 55,000 students enrolled annually (T. T. Nguyen, 2023). In 2023, Vietnam had 1,024,063 students registered to take the national high school graduation exam (Oanh, June 2023). Of these, 102,095 are high school students in Hanoi, accounting for more than 10% of the total candidates nationwide.

In the past 10 years, as a result of the 4th industrial revolution and the COVID-19 pandemic, the number of students oriented to study IT has increased rapidly every year and the demand for recruiting IT staff has also redoubled sharply. However, the attraction of new “trend” bachelor programs along with competition in university admissions has made it difficult to recruit enough target students, especially IT students. This requires universities to research to find suitable strategies to change the approach to high school students, especially in Hanoi - the capital of Vietnam - where there are numerous potential candidates, but the competition rate is high.

In the past decades, there have been several research works related to student attraction solutions, which focused on the importance of advertising, PR, or upgrading university facilities while some other works focused on the quality of teaching and the reputation of the university or simplifying the admission process. However, the differences in culture of each country and regional culture make the above factors not unified in the research subjects and the information becomes outdated due to many changes in the context and research time. Most of the previous studies only focused on factors affecting the intention to choose a university, but they are not enough to apply to the intention to choose and the decision to choose a university to study IT, especially in Hanoi. This study aims to identify the factors affecting the decision to choose a university majoring in IT for Hanoi students. Besides, this study also aims to find out the factors affecting the intention to choose a university majoring in IT for Hanoi students and the relationship between the intention to

choose a university majoring in IT for Hanoi students and the decision to choose a university majoring in IT for Hanoi students.

## LITERATURE REVIEW

### Theory of Planned Behavior (TPB)

Ajzen discussed how people's conduct varies based on their perceived behavior control, which affects how people alter their behavior. More complicated actions (such as controlling students' troublesome conduct) can be effectively assessed thanks to the perceived behavior control, which was not well predicted by the TRA. The PBC is a subjective measure of an individual's perceived ease or difficulty doing a specific task. In TPB, the degree of perceived control over carrying out a certain activity is measured to evaluate the people's subjective views. Also, when perceived and real behavior control does not differ much, there is an indirect relationship between perceived and actual behavior control. Indirect links, however, will only be displayed when there are notable differences between two perceived and real behavioral controls (Ajzen & Processes, 1991).

### TPB in University Admission

According to TRA, the subjective norms could be the references of parents, or others, to students while they intentionally choose the university they want to study IT. It shows students' willingness to apply to some universities. Their intention develops into behavior, which means the decision to choose. In TPB, perceived behavior control may be the ability of students to match their decision or the temptation of school counselor consulting, so there might be some universities they intend to apply to, but some troubles may be caused because of their ability (lack of ability to get a high mark or lack of health to study IT, ...) or it might have some difficulties to their first intention because of the temptation of the advice from school counselors.

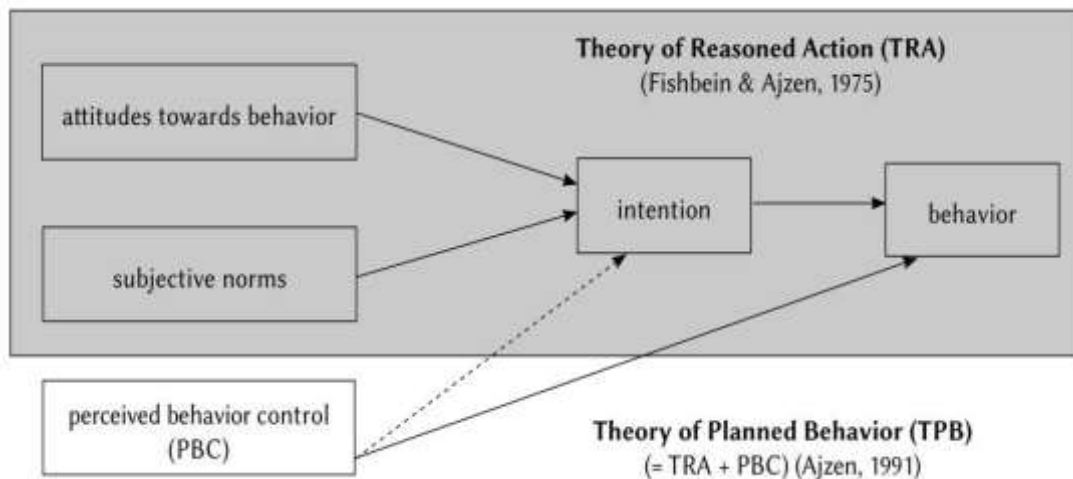


Figure 1. Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) (Lee & Witruk, 2016)

### Previous Studies on Research

A model of the factors influencing prospective students' college selection is presented by D.W. Chapman in 1981 (Chapman, 1981). The model aims to: (1) help college administrators who are in charge of creating recruitment policies

recognize the factors and forces that they must take into account when creating institutional recruiting policies; and (2) support ongoing research on student college choice. Table 1 has summarized some of the research on the importance of restaurant quality recently.

Table 1. Previous Studies Relating to Research

<b>Authors</b>	<b>Study Focuses</b>	<b>Results</b>
(McInerney, DiDonato, Giagnacova, O'Donnell, & Journal, 2006)	The study's findings indicate that favorable high school experiences, a passion for computers, a propensity for math and physics, the perception of a high-status job, the expectation of a good salary, support from family members, and the influence of a significant figure—such as a teacher or work supervisor—were among the factors that influenced the students' decision to major in and pursue careers in information technology	The study project's goal was to find out why undergraduates select an IT-related major, why they hope to work in the field, what advantages and difficulties they see in the field, and whether or not work-related experiences while attending college have an impact on students' major and career decisions.
(Sathapornvajana & Watanapa, 2012)	The Theory of Reasoned Action (TRA) serves as the theoretical foundation for the investigation. The two categories of elements that could influence students' behavioral intention to select an IT program are their attitudes toward doing so and the subjective norm.	The statistical analysis's conclusion demonstrates how well TRA explains behavioral intention.
(T. Nguyen & Nguyen, 2019)	Their goal is to identify these factors and develop management strategies that will enhance the effectiveness of Ba Ria Vung Tau University's admissions process.	This paper contributes the referral factors that affect the decision to choose to study at universities including Training programs, Personal orientation, and Personal.
(TOÀN, 2021)	The author used a checking measuring scale and a survey on high school students in grades 12 by the author	Investigate the various elements that affect distinct student groups.

(Pham, Nguyen, Tran, Nguyen, & Nguyen, 2021)	This study pointed out the factors influencing high school students' decisions to attend universities in Vietnam during the COVID-19 pandemic	Six factors positively influenced the decisionmaking process. The study also offered some useful recommendations for how universities should use the marketing mix and student segmentation strategies to attract the best candidates. Universities should prioritize referrals and funding, according to the report.
(Zhang, 2007)	This paper concluded the TRA framework, which is displayed below, in another study he conducted on the subject of "Why IS: Understanding Undergraduate Students' Intentions to Choose an Information System Major."	The author discovered that students' decisions about their IS majors were influenced by social pressure, their attitudes toward major selection, and their emotions as well as worries about the difficulty of the IS curriculum and employment availability.
(Susilo & Sardjono, 2018)	The Influence of Perceived Desirability, Perceived Feasibility, and Perceived Accessibility to Decision Making Through the Intention to Choose Polytechnics in East Java	The authors deduced that generally speaking, students' purpose in choosing a polytechnic in East Java influences their decision to do so.

This comprehensive literature review highlights the factors influencing students' behavior in choosing a major for their university education. It emphasizes the theories of action and cognitive abilities to choose the research subjects. Recent studies have addressed the factors influencing students' major and career decisions and the theoretical foundation for empirical surveys and surveys on their intentions. However, there are still significant gaps in the analysis and assessment of the factors influencing high school student's choice of major in information technology. Therefore, this study will address these gaps by identifying the internal and external factors that influence the worldview of the research subject, thereby adjusting previous studies on the impact of these determinants on the research subject and pointing out which factors do not influence as well as practical advice for universities with information technology majors to adjust their approach to potential candidates.

### **University Characteristics (UA)**

University characteristics are things that attract students to apply, therefore, University characteristics can be understood as factors that are the same as university attractiveness.

The influence of attitude, subjective norm, and perceived behavioral control on students' intention to enroll in Sharia economics study programs led them to the conclusion that program attractiveness has a positive relationship with student's intention to enroll (Imari, Wardana, Mintarti, & Haryono, 2020).

In the three-phase model for analyzing the college choice process of students, including the consideration stage, the information search stage, and the final decision-making stage (D Hossler & Gallagher, 1987), the authors pointed out the factors that influence students' college choice decisions, including the academic reputation.

Academic reputation is measured through many methods and criteria, mainly including University Ranking (Dill & Soo, 2005), International collaboration (Kehm, 2013), Research and Development achievements, Academic evaluation, Citation Metrics (Usher & Savino, 2006), etc.

University reputation plays an important role in students' intentions and decisions to choose a university because it is directly related to many potential benefits that students expect when studying at a university with a good reputation. As these results, the author of this study also hopes to test the following hypothesis:

H1a: University characteristics (Reputation) will significantly and positively affect to Intention to choose a university to study IT in Hanoi students. H2a: University characteristics (Reputation) will significantly and positively affect to Decision to choose the university to study IT Hanoi students.

According to the study on the influence of college cost and social class factors on students' choice and retention of education (Paulsen & John, 2002), the authors pointed out that economic factors, including tuition costs and financial aid, play an important role in students' decision to choose a college.

In addition, according to a study conducted by Ming and Science (2010), students' decision to attend a college or university is influenced by several characteristics of that institution. This includes many important features, such as location, academic services, location, amenities, etc.

Tuition costs and scholarships have a great influence on students' decision to choose a college. These financial factors play an important role in the choice process of students and their families, especially in the context of increasing tuition fees and the limited ability of families to pay. Therefore, this study also hypothesizes that:

H1b: University characteristics (Service fee) will significantly and positively affect to Intention to choose the university to study IT Hanoi students. H2b: University characteristics (Service fee) will significantly and positively affect to Decision to choose the university to study IT in Hanoi students.

### **References (RF)**

Don Hossler and Vesper (1999) found that the level of influence of family and friends may vary based on specific cultural and social factors. Every time a student decides to attend college, they can consult a variety of sources for

advice, including friends from the University (Alumni). Students are impacted by friends, family, teachers, seniors, role models, and social networks when it comes to their intention to participate in an IT program (Sathapornvajana & Watanapa, 2012). That research was done in Thailand which is the neighbor of Vietnam and where the culture is similar to Vietnam also.

Families influence through expectations, finances, and personal values, while other people include alumni influence through reputation building, career networking support, and scholarship provision, hence, the author hypothesizes the same hypothesis as previous research:

H3a: References (Family and alumni group) of Hanoi students will significantly and positively affect to Intention to choose the university to study IT.

H4a: References (Family and alumni group) of Hanoi students will significantly and positively affect to Decision to choose the university to study IT.

Perkins & Ashworth show that admissions counselor's advisors are the most influential factors in students' decisions (Ashworth, 2020). Both friends and admissions counselors have a significant influence on students' college choices. Some studies focus on the university choices made by students in particular provinces, however, Le Thi My Linh conducted a study in 2020 that examined high school student choices across the country. Le and Business (2020) concluded in that study that the decision to pick is positively impacted by the reference factor.

Friends often influence through social pressure and personal motivation, while admissions counselors provide formal information and personalized support to help students make informed decisions. Based on this research, the author wants to put a hypothesis that:

H3b: References (Friends and counselors) of Hanoi students will significantly and positively affect to Intention to choose the university to study IT.

H4b: References (Friends and counselors) of Hanoi students will significantly and positively affect to Decision to choose the university to study IT.

#### **Relationship Between Intention to Choose (IC) to Decision to Choose (DC)**

The Theory of Planned Behavior (TPB) is developed by Ajzen and Processes (1991) which is widely used to explain the relationship between intention and behavior. According to TPB, intention is the strongest predictor of actual behavior, in which the intention to choose a university is determined by students' attitudes toward that choice, social pressure, and perceived behavioral control. This study shows that IC tends to strongly lead to DC when students have positive attitudes, receive social support from society (family, friends), and feel capable of carrying out that decision.

As noted by Ajzen and supported by Susilo and Sardjono (2018), intentions have a crucial role in predicting a behavior's likelihood before it manifests itself as a purchasing decision. The choice to purchase something is preceded by its goal. The buyer's intention affects their decision-making process; the more strongly they intend to buy, the more confident they are in their choice. Therefore, this research hypothesizes that:

The relationship between IC and DC is generally strong and positively correlated, but it is also complex and influenced by multiple factors.

Understanding these dynamics can help educators, policymakers, and university administrators better tailor their recruitment strategies and support systems to guide students from intention to actual enrollment.

H5: Intention to choose the university to study IT of Hanoi students will significantly and positively affect to Decision to choose the university to study IT

Based on these hypotheses, the author proposes a framework model as below:

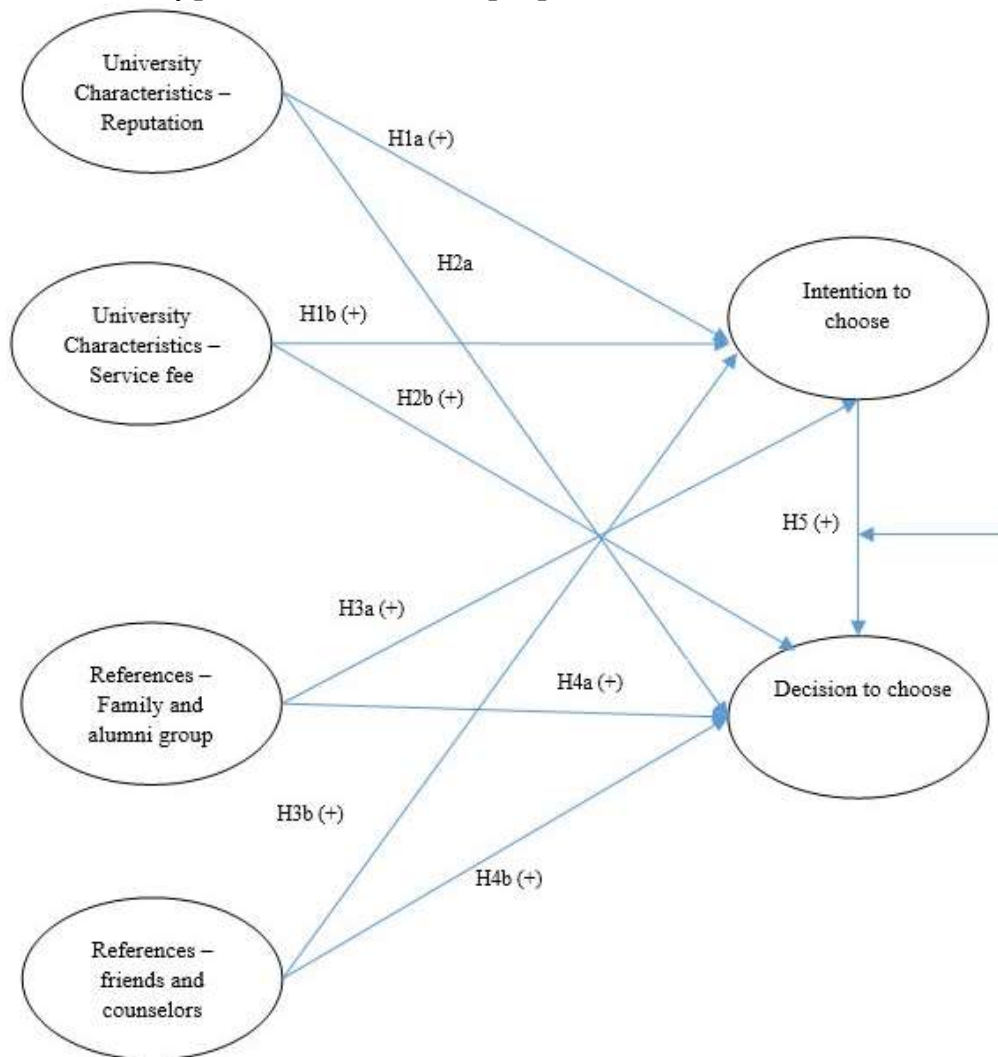


Figure 2. Theoretical Study Model

## METHODOLOGY

### Quantitative Method

When testing theories and hypotheses using normal and continuous data, large sample sizes, straightforward models with few variables and indicators, reflective evaluation, and assessing model fit and validity, CB-SEM is a suitable tool. But when it comes to analyzing and making predictions with non-normal, categorical, or ordinal data, small sample sizes, intricate models with lots of variables and indicators, formative assessment, higher-order constructs, and handling mediation and moderation effects, PLS-SEM is superior (Dash, Paul, & Change, 2021).

Because the proposal framework has many variables and items with the complex model which has a small sample size (241 data) therefore the PLS-SEM method is more suitable to analyze.

The survey had been divided into 3 sections which aimed to collect data to analyze factors that affect Hanoi students' decision to choose universities to study IT majors.

**Section 1:** This part is focused on filtering suitable targets for a survey.

**Section 2:** This part contains a series of Likert Scale (Scale 4) questions to collect student's answers about their choices.

**Section 3:** This part is focused on personal questions but also has one final filtering question

### **Sampling Method**

This research project uses a snowball sampling method to collect the data. Specifically, the author uses an exponential non-discriminative snowball sampling method and the author starts with Hanoi students only.

The primary data were collected to investigate factors affecting Hanoi students' decision to choose the university to study IT majors, in which data were collected in the following ways:

- Starting with Hanoi students who have studied IT majors in universities, they will suggest their classmates or friends who study IT majors and who are from Hanoi and were born between 2002 and 2005 at the same time.
- The students had studied at high schools which are in every Hanoi district.

### **Sample Size**

This research project has 6 variables and 21 items, therefore, according to the formula of sampling size calculated ( $N \times 5 - N$  is the number of items), the minimum sampling size is 105.

In reality, the author collected **241** data from Hanoi students who had studied high schools in Hanoi and are currently studying IT majors in universities.

### **Measurement Scale**

Based on previous research projects of other authors about factors that affect to decision to choose universities, the author builds a measurement scale that has 4 variables and 24 items to measure factors that impact to decision to choose the university to study IT majors of Hanoi students and have another variable called "Intention to choose" to figure that whether not intention to choose affects to decision to choose and if those factors affect to intention to choose too.

The measurement scale is shown as below table:

Table 2. Measurement Scale

Variables		Coding	Question	Source
University characteristics	University Characteristics - Reputation (UA - R)	UA1	The University has a good academic reputation among universities	(Wagner & Fard, 2009)
		UA2	The University is near my home	(Joseph & Joseph, 2000),
		UA3	The university has good infrastructure and the necessary resources to meet the learning needs of its students.	(Wagner & Fard, 2009)
		UA4	The university cooperates with many companies/organizations and introduces job opportunities for students	
	University Characteristics - Service fee (UA - SF)	UA5	The university has a team of highquality teachers.	(Joseph & Joseph, 2000), (Wagner & Fard, 2009)
		UA6	The university has reasonable tuition fees	(Ming & Science, 2010)
		UA7	The university has many financial support policies (scholarships, grants, etc.)	
References	References - Family (RF - FA)	RF1	Parents	(Sathapornvajan a & Watanapa, 2012)
		RF2	Students and Alumni of universities	
		RF3	Groups and Fan Pages of Universities' Social Networks	
		RF4	Self-decision	
	References - Friends and counselors (RF - FC)	RF5	Relative(s)	(Chapman, 1981)
		RF6	Close friend(s)	
		RF7	Career counselor/adviser	
Intention to choose	Intention to choose (IC)	IC1	I have very serious thoughts about learning IT	(Ayeh, BondziSimpson, Baah, & Education, 2023)
		IC2	I put IT as my top priority when registering major	
		IC3	I predict that I will be working in IT businesses	

Decision to choose	Decision to choose (DC)	DC1	Compared to the ideal university, I am pleased with the decision to choose this IT major for my university	(Nguyễn, Phòng, & Thái, 2021), (Le & Business, 2020)
		DC2	I will introduce my IT major at university to others	
		DC3	Compared to expectation, I am satisfied with my decision to choose to study IT major in this University	(Le & Business, 2020)
		DC4	In general, choosing this University's Information Technology major is the right decision for me	

## RESULTS

### Descriptive Statistics

241 respondents provided valid responses in total; 144 (59.8%) of the respondents were male and 97 (40.2%) of the respondents were female. Based on data, all participants were born between 2002 - 2005 therefore they are all in the age range of 18 - 23. Among participants, half of them (51%) had admission scores from 20.01 - 26.00 out of 30 and this is a little bit higher than the average admission score in Vietnam. Also, the author has 80 participants (33.2%) who had admission scores between 26.01 - 30.00, this group is excellent students while the rest of the respondents had admission scores under the average admission score of Vietnam. This ratio makes this research more valuable and suitable because the ratio of admission score and gender is quite balanced.

Table 3. Statistics of the Respondents

		FREQUENCY	PERCENT
Gender	Male	144	59.8%
	Female	97	40.2%
<b>Total</b>		<b>241</b>	<b>100%</b>
Admission score (out of 30)	26.01 - 30.00	80	33.2%
	20.01 - 26.00	123	51%
	15.00 - 20.00	38	15.8
<b>Total</b>		<b>241</b>	<b>100%</b>

**Measurement Model**

According to Table 4's results, every item had an outer loading that was greater than the acceptable 0.70 (0.765 to 0.912) (Hair, Risher, Sarstedt, & Ringle, 2019). All variables have Cronbach's alpha values between 0.777 and 0.860, over the 0.70 threshold value. Furthermore, all variables' composite reliability (CR) values ranged from 0.857 to 0.915, exceeding the 0.70 cutoff value (Hair et al., 2019). The average variance extracted (AVE) values also varied, ranging from 0.599 to 0.783. These values show strong convergent validity because they are above the cutoff value of 0.50 (Hair et al., 2019). Thus, the measures' internal consistent reliability is satisfactory.

Table 4. Standardized Factor Loadings and CR, AVE of Model

Construct	Item	Standardized Factor loading	Cronbach's Alpha	Composite Reliability (CR)	Average variance Extracted (AVE)
University Characteristics - Reputation (UA - R)	UA1	0.784	0.777	0.857	0.599
	UA2	0.765			
	UA3	0.769			
	UA4	0.778			
University Characteristics - Service fee (UA - SF)	UA5	0.829	0.781	0.873	0.697
	UA6	0.811			
	UA7	0.863			
References - Family (RF - FA)	RF1	0.776	0.860	0.908	0.714
	RF5	0.797			
	RF6	0.905			
	RF7	0.893			
References - Friends and counselors (RF - FC)	RF2	0.908	0.860	0.915	0.783
	RF3	0.832			
	RF4	0.912			
Intention to choose (IC)	IC1	0.825	0.782	0.873	0.696
	IC2	0.831			
	IC3	0.847			
Decision to choose (DC)	DC1	0.787	0.810	0.876	0.638
	DC2	0.793			
	DC3	0.789			
	DC4	0.825			

Hair and Partners gave out the value of the variance inflation factor that is valid in PLS-SEM as below (Hair et al., 2019):

- VIF  $\geq$  5: There might be a higher chance that multicollinearity can occur, and the model is damaged seriously
- $3 \leq$  VIF  $\leq$  5: The model might be had multicollinearity
- VIF  $<$  3: There is no multicollinearity in the model.

Table 5. Collinearity Statistics (VIF)

VARIABLE	ITEMS	VIF
UA - R	UC1	1.525
	UC2	1.500
	UC3	1.589
	UC4	1.514
UA - SF	UC5	1.644
	UC6	1.531
	UC7	1.764
RF - FA	RF1	1.693
	RF5	1.886
	RF6	3.141
	RF7	3.022
RF - FC	RF2	2.383
	RF3	1.951
	RF4	2.466
IC	IC1	1.599
	IC2	1.605
	IC3	1.676
DC	DC1	1.609
	DC2	1.708
	DC3	1.651
	DC4	1.770

Most of the observation items have VIF  $<$  3, there are only two items that have VIF slightly  $>$  3, therefore, the author still accepts all times in terms of validity.

All diagonal elements in Table 6 should be higher than those of off-diagonal elements to ensure discriminant validity (Fornell & Larcker, 1981). The square root of AVE is on the diagonal.

Table 6. Correlation Matrix - Discriminant Validity

VARIABLE	DC	IC	RF - FA	RF - FC	UA - R	UA - SF
DC	<b>0.798</b>					
IC	0.150	<b>0.835</b>				
RF - FA	0.638	0.193	<b>0.845</b>			
RF - FC	0.505	-0.015	0.481	<b>0.885</b>		
UA - R	-0.065	0.549	0.021	-0.069	<b>0.774</b>	
UA - SF	0.098	0.402	0.143	0.094	0.293	<b>0.835</b>

The variable reliability and validity tests confirmed that the survey items were sufficiently valid and reliable for further analysis.

**Structural Equation Model**

To evaluate the structural model and to calculate indicates of path coefficients: p-value, t-value, and original sample, the author uses bootstrapping two-tailed with a significance level is 0.05 to test the model:

Table 7. Results for Structural Equation Model

PATH	ORIGINAL SAMPLE	T-VALUE	P-VALUE	HYPOTHESIS	HYPOTHESIS SUPPORT
IC -> DC	0.135	2.098	0.036	H5	Supported
RF-FA -> DC	0.489	8.183	0.000	H4a	Supported
RF-FA-> IC	0.197	3.376	0.001	H3a	Supported
RF-FC -> DC	0.265	4.842	0.000	H4b	Supported
RF-FC -> IC	<b>-0.101</b>	<b>1.723</b>	<b>0.085</b>	<b>H3b</b>	<b>Rejected</b>
UA-R -> DC	<b>-0.127</b>	<b>2.245</b>	<b>0.025</b>	<b>H2a</b>	<b>Rejected</b>
UA-R -> IC	0.466	8.155	0.000	H1a	Supported
UA-SF -> DC	<b>-0.014</b>	<b>0.233</b>	<b>0.815</b>	<b>H2b</b>	<b>Rejected</b>
UA-SF -> IC	0.247	3.820	0.000	H1b	Supported

As shown in Table 7, the intention to choose towards IT major was positively influenced by university characteristics - Reputation ( $\beta = 0.466$ ,  $p < 0.001$ ), university characteristics - Service fee ( $\beta = 0.247$ ,  $p < 0.001$ ), and references - Family ( $\beta = 0.197$ ,  $p < 0.001$ ). Thus, H1a, H1b and H3a are supported. University characteristics-reputation was the strongest predictor of intention to choose, followed by university characteristics - Service fee and references - Family.

Besides, the decision to choose towards IT major was positively influenced by references - Family ( $\beta = 0.489, p < 0.001$ ), References - Friends and counselors ( $\beta = 0.265, p < 0.001$ ) and intention to choose ( $\beta = 0.135, p < 0.05$ ), supporting H4a, H4b and H5. Out of all predictors, the reference family had the strongest impact on the decision to choose, followed by references friends and counselors, and intention to choose.

In contrast, other hypotheses such as H2a, H2b, and H3b are not supported. University Characteristics - Reputation and University Characteristics - Service fees haven't influenced to decision to choose and references - Friends and counselors haven't impacted the intention to choose.

The table below shows the results of the R Square value and Adjusted R Square value and the result of the relationship between variables with p-value.

Table 8. R Square and Adjusted R Square of the Model

VARIABLES	R SQUARE	R SQUARE ADJUSTED
DC (Decision to choose)	0.473	0.461
IC (Intention to choose)	0.395	0.385

As shown in Table 8, the predictive accuracy was assessed based on the coefficient of determination ( $R^2$ ), representing each endogenous latent variable's amount of explained variance (Hair et al., 2019). Accordingly, university characteristics - reputation, university characteristics - service fee, References - Family, references - friends and counselors explained intention to choose, accounting for 39.5% of the total variance. These  $R^2$  values indicate a moderate predictive accuracy (Henseler & Sarstedt, 2013). All constructs collectively explained approximately 47.3% of the variance of the decision to choose, demonstrating a moderate level of predictive accuracy.

## DISCUSSION

Compared with previous research, there are some differences and similarities.

In most previous research, universities' characteristics of reputation or brand image are accepted, for example, in the research of Rahmat Hidayat and partner, which topic is factors that affect students' decision to choose private universities in Medan City Indonesia, the authors concluded that brand image and cost of education have a positive and significant effect on student decisions (Hidayat & Sinuhaji, 2018). Another research, that belongs to Nguyen Thi Phuong Anh and partners, said that university academic reputation is positively related to high school student's decision to choose a university also when they researched Factors affecting university choice of high school students in Vietnam during the Covid-19 pandemic (Pham et al., 2021).

One additional difference between this research and previous research is that is accepted that parents' advice positively affects to intention to choose and the decision to choose of Hanoi students but in research by Iqbal Imari and partners, about The effect of attitude, subjective norm, and perceived behavioral control on students' intention to choose sharia economics study programs, they

rejected the hypothesis of relationship between parental support and intention to choose of students (Imari et al., 2020). The same results were with Iqbal Imari and partners, Nguyen Phuong Toan also rejected the effect of parents' advice on the decision to choose the University of Tien Giang grade 12 high school students, but he accepted that the reputation of the university has a positive impact on Tien Giang students' decision to choose university (TOÀN, 2021).

On the other hand, many previous research papers have results similar to this research. For example, in the same research by Nguyen Thi Phuong Anh and partners, they concluded that the University's financial support was positively related to high school students' decision to choose a university and this conclusion is the same as the author's test results of the model in this research. In the research on factors affecting to decision to choose Ho Chi Minh University of Technology and the education of students, Dinh Duong Chau Thao and partners concluded same as the author that university characteristics affect the intention to choose a University of students also (Thao, 2022).

Mentioned to another research, the research of Le Quang Hung about factors associated with the university choice of high school students in Vietnam, proved that references from family, friends, counselors, and tuition fees have a positively significant effect on students' university choices (Le & Business, 2020). The result is the same as this research.

## **CONCLUSIONS AND RECOMMENDATIONS**

The study has successfully identified several factors that significantly impact the decision-making process of Hanoi students when choosing a university to study IT majors. Key determinants include university characteristics, family and peer references, and students' intentions. The research highlighted that while university reputation influences students' intentions, it does not necessarily translate into the final decision to enroll. Instead, financial considerations, such as service fees and available scholarships, along with advice from trusted sources, play a more pivotal role. These findings provide a nuanced understanding of the dynamics influencing student choices in Hanoi, offering valuable insights for universities aiming to enhance their recruitment strategies.

### **Theoretical Implication**

This research contributes to the academic discourse by reinforcing and expanding on existing theories related to student decision-making in higher education. It confirms the significant role of university characteristics and reference groups in shaping students' intentions and decisions, aligning with previous studies. However, it introduces new insights, particularly the limited impact of university reputation on the final decision, which contrasts with earlier research. This study also underscores the complex relationship between intention and decision-making, specifically within the context of IT majors, thereby filling a gap in the literature and providing a foundation for future research on student behavior in similar contexts.

### **Practical Implication**

Along with previous research of Vietnam authors and other countries' authors, this research brings updated practical implications for universities to plan strategies to recruit several quality Hanoi students to their IT majors.

Firstly, consider the fact that university characteristics of reputation have a big impact on Hanoi students' intention to choose a University to study IT majors which includes: academic brand image, location, facilities, and cooperation numbers. Universities should focus on building and communicating a strong academic brand that highlights their unique strengths, such as cutting-edge facilities, industry partnerships, and successful alumni. Messaging should be tailored to resonate with the specific concerns and aspirations of Hanoi students, such as the proximity of the university to their homes and the potential for practical, hands-on experience.

Secondly, the study indicates that financial considerations are crucial in the decision-making process. Universities should develop comprehensive scholarship programs and financial aid packages that are communicated to prospective students. Highlighting these opportunities in marketing materials and during recruitment events can make IT programs more accessible to a broader range of students. Universities should ensure that their tuition fees and associated costs are presented transparently, with clear explanations of the return on investment, such as potential starting salaries for IT graduates. Offering financial planning resources or workshops for students and parents can further demystify the costs associated with higher education.

Thirdly, the findings highlight the importance of references from family and social networks in students' decision-making processes. Universities can use this information to design targeted communication strategies that engage not only prospective students but also their families and peers, thereby increasing the likelihood of enrollment.

Therefore, to win students' decisions, universities especially IT faculties need to prepare a team of counselors who have a professional image but friendly enough to meet students' needs. It can directly persuade them to apply to IT majors at their universities. Using the mindset that students want to study with their friends and tend to listen to successful relatives, IT majors at university should maintain a good brand image and positive reputation to affect their friends and relatives.

### **FURTHER STUDY**

Even though the research shows new findings and differences and shows the suitability to the current education market in Hanoi, there are several limitations laid on the report.

First, the study primarily focuses on the behaviors of students within Hanoi, the capital of Vietnam. While this provides valuable insights into the decision-making process of Hanoi students, the findings may not be fully applicable to students from other regions of Vietnam. The cultural, economic, and educational contexts in different provinces could lead to varying factors influencing university choice, limiting the generalizability of the results.

Second, the study did not consider the impact of international certifications, such as A-levels, IELTS, TOEIC, and TOEFL, which have become increasingly influential in university admissions. These certifications often play a significant role in students' decision-making processes, especially for those considering studying IT abroad or in international programs. The omission of these factors limits the comprehensiveness of the study

Forth, the findings show that Hanoi students' decision to choose a University to study IT majors has been illustrated at 46.1% by this model while Hanoi students' intention to choose a University to study IT majors has been illustrated at 38.5%. Therefore, there are hidden latent variables that the author still misses. It needs to dig deeper and research more respondents.

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