Research on Factors Affecting the Career Choice Decision of High School Students in Thai Nguyen Province

Bui Ngoc Tuan[1]*✉
[1]University of Information and Communication Technology, VietNam
Corresponding Author: bntuan.ictu@gmail.com

Article Information	ABSTRACT
	This study evaluates factors influencing career choice decisions among high school students in Thai Nguyen province through statistical analysis. Results indicate that crucial factors affecting these decisions include labor market needs, career counseling, family influence, university factors, and personal preferences. Exploratory factor analysis identifies 5 significant factors, explaining 73.68% of data variance. Strong positive correlations are observed between career decisions and factors such as labor market needs, career counseling, family, university factors, and personal preferences. Additionally, a linear regression model predicts that labor market demand, career counseling, and university factors positively and significantly influence career choices, while personal and family influences show weaker correlations. Practical implications of this research include assisting educational institutions, families, and students in comprehending career decisions and formulating effective support strategies.

1. INTRODUCTION

In today's modern life, choosing a career is one of the most important decisions that each person has to make in life. Especially for high school students, this decision will greatly affect their future development. However, choosing a career is not simply a personal decision but also depends on many different social and personal factors. Therefore,

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researching factors that influence high school students' career choice decisions is a very important topic and needs special attention.

In this article, the author will present research results on factors affecting career choice decisions of high school students in Thai Nguyen province. Using survey methods and statistical analysis, we have focused on analyzing the relationship between factors such as family, interests and abilities, labor market, environment and culture, university, Career counseling and other factors that influence students' career choice decisions.

Thái Nguyên is a province in the Northeast region of Vietnam. It is a mountainous, midland province with a natural land area of 3,526.64 square kilometres (1,361.64 sq mi) and a population of 1,286,751 as of 2019. Its multi-ethnic society is composed of eight ethnic groups. With its rich mineral resources and salubrious climate, the province offers significant opportunities for industrial development for both domestic and foreign investors.Thái Nguyên is also known as an educational centre and ranks 3rd nationwide, having 21 universities and colleges. The province is also the centre of tea industry in the country with an area of 16,000 ha. (second only to Lâm Đồng) with a production of 100,000 tonnes (98,000 long tons; 110,000 short tons) per year. Its dried tea production is 25,000 tonnes (25,000 long tons; 28,000 short tons) per year. The tea produced here is considered to have the finest quality throughout Vietnam. Thái Nguyên borders six provinces:Bắc Kạn, Vĩnh Phúc, Tuyên Quang, Lạng Sơn, Bắc Giang, Hanoi. Thái Nguyên is the gateway for socio-economic exchange with the Red River delta. It is 50 km from Noi Bai international airport, 200 km from the Chinese border, 75 km from the center of Hanoi and 200 km from Hai Phong.

The main goal of this study is to find factors that influence the career choice decisions of high school students in Thai Nguyen province. This research will help identify important factors that students regularly consider when choosing a career, thereby helping schools and career counselors provide useful information and recommendations. Support solutions for students in the process of finding a suitable career path. In addition, this research also aims to provide useful information for educational managers and teachers to develop educational programs suitable to the actual needs of students and society.

1.1. Theoretical Foundation

Introduction. The career choices made by high school students are pivotal moments that shape their future trajectories. Understanding the factors influencing these decisions is essential for educators, policymakers, and parents alike. In Thai Nguyen Province, like many regions globally, students face a myriad of influences when making career decisions. This research aims to delve into these factors, shedding light on the intricacies of career choice determinants among high school students in the region.

Theoretical Foundation. Drawing upon established theories of career development and decision-making, this research builds its theoretical foundation. Concepts such as social

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cognitive career theory and Holland's (1) theory of vocational choice provide frameworks through which to understand how individual characteristics, social influences, and environmental factors interact to shape career decisions. These theories offer valuable insights into the complexities of decision-making processes and guide the development of the research model.

1.2. Theoretical Foundation

Choosing a career is the process of searching, exploring, and making decisions about the career field or field of study a person will pursue in the future. The process of choosing a career includes identifying an individual's interests, skills, abilities, and career goals. Choosing a career is often considered an important process and has a great impact on a person's future career and life. Choosing a career that suits one's interests and abilities can help that person develop a successful and happy career.

There have been studies on students' career choices such as:

Chapman (2) focused on identifying factors that influence students' decisions when choosing a university. The results of this study show that the most important factors in students' choice of university include: Training program, job opportunities, geographical location, learning environment, cost study. This study has provided important information about the factors that influence students' decisions when choosing a university. The results of this study can be used to improve the quality of training and educational services of universities.

Research model of M.J. Burn (3) revolves around identifying factors that influence students' decisions to choose a university. Specifically, this model focuses on 5 main groups of factors: Personal factors, social factors, environmental factors, information factors, and university factors. This model also posits that these factors interact with each other to influence students' college decisions. This study provides a multidimensional approach to better understand the factors that influence students' college choice decisions.

Ruth E. Kallio's (4) research model This model focuses on 4 main groups of factors: School characteristics, Student interests and abilities, Future job opportunities, Sex.

Research by Joseph Sia Kee Ming (5) aims to understand the factors that influence students' decisions to choose a university in Singapore. The results show that factors influencing students' decisions to choose a university include: Location and amenities of the university, quality of teaching and learning environment, ability to recruit and deploy careers after graduation, prices and financial aid, university reputation and prestige. Research also shows that the majority of students choose a university based on a variety of factors and that the final decision is often a combination of these factors.

Research by Russayani Ismail (6), conducted in Malaysia, aimed to evaluate factors affecting students' decisions to choose a university. The results of the study show that the most important factors in choosing a university include: Quality of teaching and learning

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environment, employability and career development after graduation, location and university facilities.

Litten's (7) model identified a set of variables that influence the college selection process including students' family circumstances, personal attributes, environment, and public policies. , university activities, university characteristics, technology/media used for teaching.

Research by Dinh HTV (8), in Vietnam aimed to evaluate factors affecting students' decisions to choose a university. Research also shows that factors such as personal interests, the influence of family and friends, as well as the ability to meet future job requirements can also influence the decision to choose a university. student learning. Additionally, research also shows that cultural factors, such as compatibility with family and societal values and perspectives, can also influence students' college decisions.

Research by Luu Ngoc Liem (9) in Vietnam aimed to evaluate factors affecting students' decisions to choose a university. Research also shows that personal factors such as preferences, personality and personal interests can also influence students' decisions to choose a university. In addition, research also shows that social factors such as the influence of family, friends and society can also influence students' decisions to choose a university.

Research by L.T.N. D, N.B. H.(10), focuses on identifying factors that affect students' choice of university. This study identified important factors in the process of students choosing a university, and its results can be used to improve the quality of training and educational services of universities. learn.

Research by Nguyen Phuong Toan (11) , also focuses on identifying factors that affect students' choice of university. This study has also identified important factors from strong to weak as follows: Factors of diversity and attractiveness of the training industry; Factors about university characteristics; Factors about the ability to meet expectations after graduation; The university's communication efforts factor and the university's reputation factor.

2. RESEARCH METHOD

2.1. Study Method

The main research method in this study is a combination of sociological survey and the use of SPSS 20 software. According to Hair et al (12) the minimum sample size to use EFA is 50, preferably 100 or more. The ratio of observations to an analyzed variable is 5:1, meaning that to ensure data analysis (EFA) is reliable, at least 5 observations are needed for 1 measured variable and should not be less than 100 observations. Due to the questionnaire evaluating factors includes a total of 21 observed variables, the minimum sample is determined to be 105. However, in order to increase the reliability of the research results, the number of samples being selected to be participated in analysis should be 1605.
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The research has been carried out in two steps: firstly, we do the preliminary research using qualitative methods. Then, we do the official research using quantitative methods. The scale and reliability of observed variables are evaluated using Cronbach's Alpha coefficient. The requirement for the scale to be accepted is to remove variables with total variable correlation less than 0.3 and Cronbach's Alpha coefficient less than 0.6. Secondly, we examine and evaluate the model using multivariate regression with a significance level of 5-10%. Analyzes were performed with the support of SPSS software.

The data using for this study includes both secondary data and primary data. Secondary data is collected from data from 12th grade students in Thai Nguyen province, Vietnam. For primary data, the questionnaires has been sent directly to interviewees at 24 high schools in diverse areas across the province, including rural, urban, mountainous and midland areas. The direct response rate is 89.17%, corresponding to 1605 valid responses out of 1800 sent ballots.

2.2. The Proposed Model

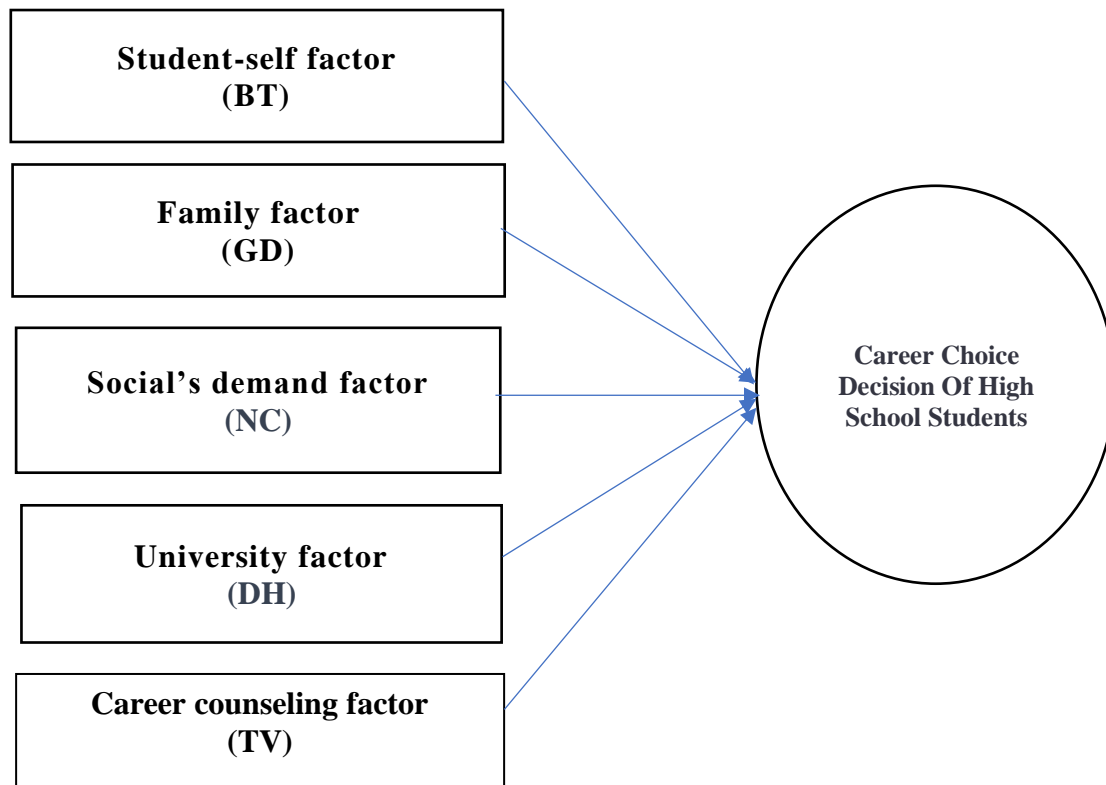Based on related research and theoretical basis, the author proposes a research model as below:

Figure 1. The proposed model

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The author proposes a research model consisting of 5 groups of independent factors: student-selft factors (BT includes 4 variables BT1, BT2, BT3, BT4); Family factors (GD includes 5 variables from GD1 to GD5); social demand factor (NC includes 4 variables NC1, NC2, NC3, NC4); university factor (DH includes 4 variables DH1, DH2, DH3, DH4); career counseling factor (TV includes 4 variables TV1, TV2, TV3, TV4); There is a dependent factor which is the student's career choice decision (QD includes 4 variables QD1, QD2, QD3, QD4).

2.3. Research Hypotheses

Hypothesis H1: Students' career choice decisions are significantly influenced by the students themselves.

Students' career decisions are significantly influenced by their interests and abilities. Two important factors in the student's career orientation process.

Hobbies are one of the most important factors in choosing a career. If students love their work, they will have the motivation and passion to learn and grow in their profession. They will also feel happy and satisfied at work, and will reduce pressure and stress at work.

Competence is also an important factor in the career selection process. If students have the right competencies and abilities for a certain profession, it will be easier for them to learn and develop in that profession. They will feel confident and comfortable when working and achieving in their work.

However, interests and abilities are not the only factors that determine the career choice process. Students also need to evaluate other factors such as growth potential, job opportunities, income level and career stability. This helps students have a more comprehensive view of the career they are interested in and can make the right decisions that are appropriate to their abilities and interests.

Hypothesis H2: Students' career choices are significantly influenced by their families. The family guides the choice of career through the occupation of the Father and Mother, family economy, place of residence, and local culture.

Hypothesis H3: Students' career choices are strongly influenced by labor market needs.

The labor market can greatly influence students' career choice decisions, because they want a stable career future and high income. Below are some influences of the labor market on students' career choices: Job opportunities, salary and income, social orientation.

Hypothesis H4: Students' career choices are influenced by university factors.

A student's career choice can be influenced by many different factors, of which university factors are one of the important factors. University factors can influence students' career choices in the following ways: Quality of education, teaching staff, facilities, teaching-learning equipment, programs Training programs, teaching and learning methods, tuition fees...

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Hypothesis H5: Career counseling has a significant influence on students' career choice decisions.

Career counseling is an important activity to help students make career decisions that suit their abilities and interests. There are many reasons that show that career counseling has a significant influence on students' career choice decisions, including: family counseling variables, classmates, other classmates, homeroom teachers, brothers, and sisters. previous studies, professional consultants from universities, consultants from employers, consultants through social networks, consultants from the youth union.

To test the research model, the following analytical methods are used: Testing the reliability of the scale using Cronbach's Alpha coefficient, exploratory factor analysis (EFA), confirmatory factor analysis (CFA). In this study, the scales to evaluate observed variables are all in the form of a 5-level Likert scale, with the convention of level 1 = not important and gradually increasing to level 5 = very important. Data analysis was performed with the support of SPSS 20.0 software.

Survey subjects include high school students in Thai Nguyen province with a scale of 2,279, surveyed in person and online during the period from April 2022 to June 2022. The survey results returned 2,279 high school students in Thai Nguyen province. According to Hair et al (1998), for EFA exploratory factor analysis, the minimum sample size is 5 times the total number of indicators in the scales. This study's questionnaire includes 25 indicators used in the analysis. factor. Therefore, the minimum sample size needed is: 25 * 5 = 125 observations < 2,279. Thus, the sample size ensures conditions for statistical analysis. Characteristics of survey subjects are shown in Table 2.

Table 1. Some characteristics of the survey samples
(Source: The author summary from research results)

Object group		Number of observation	Rate (%)
Place of the family live	City	540	23.70
	Town	361	15.80
	rural area	1082	47.50
	High land	75	3.30
	Particularly difficult area	221	9.70
Condition of family's economic	Poor	344	15.09
	Near-Poor	252	11.06
	Medium	1266	55.55
	Wealthier	275	12.07
	Rich	142	6.23

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There are 1,605 (70.43%) subjects have been surveyed online (link on google form) and 674 (29.57%) subjects have been surveyed by direct questionnaire. The majority of students surveyed live in rural areas 1082 (47.50%) and their family economic conditions are average 1541 (67.60%). There are 101 students choosing to go to vocational training, reaching at 4.40%, and 125 students choosing to go to work immediately, reaching at 5.50%, and the remaining students choosing to attend university.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Test the Reliability of Variables Using Cronbach's Alpha

Cronbach's Alpha results of the scales include: Student personal factors (BT has 4 variables BT1, BT2, BT3, BT4) with Cronbach's Alpha coefficient of 0.881; Family factors (GD has 5 variables from GD1 to GD5) have Cronbach's Alpha coefficient of 0.932; Social needs factor (NC has 4 variables NC1, NC2, NC3, NC4) has Cronbach's Alpha coefficient of 0.904; The university factor (DH has 4 variables DH1, DH2, DH3, DH4) has Cronbach's Alpha coefficient of 0.833; The career counseling factor (TV has 9 variables from TV1 to TV9) has Cronbach's Alpha coefficient of 0.944. All scales met testing requirements with Cronbach's Alpha coefficient > 0.6.

3.1.2. Factor Analysis

With 5 groups of independent factors and 01 dependent factor, 25 variables after testing the scale will continue to be included in factor analysis to evaluate the level of convergence of the scales in each factor group, from Then, we can draw out the characteristics of each factor that affects the career choice decision of high school students in Thai Nguyen province.

KMO coefficient=0.928 shows that the data is suitable for conducting EFA analysis. The results show that the P value of the Bartlett test is 0, indicating that the variables are correlated with each other in the overall scope. The results of EFA exploratory factor analysis in table 2 show that 3 groups of factors were extracted with 25 observed variables. The extracted variance of the 5 groups is 73.68%, showing that the factor extracted 73.68%, the variation of the data.

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Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11,074	44,297	44,297	11,074	44,297	44,297	6,154	24,616	24,616
2	3,065	12,259	56,556	3,065	12,259	56,556	3,384	13,538	38,154
3	1,813	7,253	63,809	1,813	7,253	63,809	3,122	12,490	50,644
4	1,328	5,314	69,122	1,328	5,314	69,122	3,019	12,078	62,722
5	1,140	4,561	73,684	1,140	4,561	73,684	2,741	10,962	73,684
6	,781	3,122	76,806						

Figure 2. The EFA analysis result

The EFA analysis has extracted 5 factors as in Table 3.

Table 2. Result of Rotated Component Matrix

	Component				
	1	2	3	4	5
GD3	,856				
GD2	,837				
GD4	,828				
TV4	,820				
GD1	,789				
TV3	,711				
TV2	,695				
GD5	,657				
TV1	,604				
QD3		,833			
QD4		,786			
QD1		,771			
QD2		,756			
BT2			,873		
BT1			,869		
BT4			,817		
BT3			,755		
NC4				,806	
NC3				,798	
NC2				,761	
NC1				,679	
DH3					,837
DH4					,724
DH1					,710

DH2					,652

3.1.3. Correlation Analysis

The Pearson correlation of independent variables NC1, NC2, TV1, GD1, NC4, TV2, NC3 r values are respectively (0.646, 0.581, 0.543, 0.542, 0.530, 0.521, 0.504) with strong correlation to the dependent variable QD because it has R>0.5 and has Pearson correlation Sig =0 <0.05. The variables GD2, TV3, GD3, GD5, GD4, TV4, DH2, DH4, DH1, DH3 have average correlation with the dependent variable QD because they have Sig Pearson correlation R <0.5, Sig Pearson correlation =0 <0.05. The remaining variables have a weak correlation with the dependent variable QD because R<0.3.

The variable with the strongest correlation with the dependent variable QD is the NC1 variable (occupation with high income, coefficient R= 0.646), followed by the NC2 margin (occupation with high recruitment demand R= 0.581); The third is variable TV1 (university professional consulting with R= 0.543); The fourth is the variable GD1 (Occupation of Father and Mother with R = 0.542). Next are NC4 variables (professions with a tendency to develop in the future); TV2 (consultation from homeroom teacher); NC3 (professions tending to international integration).

3.1.4. Multivariate Regression

With the initial model containing 6 groups of factors to evaluate the level that affects high school students' career choice decisions, after EFA analysis, we can extract 5 factors that can be named as follows: The second factor especially Family and counseling (GD_TV has 9 observed variables), the second factor is self (BT has 4 observed variables), the third factor is social needs (NC has 4 observed variables), the factor The fourth is university (DH has 4 observed variables); The fifth factor is the student's decision to choose a career (QD has 4 observed variables). After combining the variables into the independent variables TV, BT, GD, DH, NC and the dependent variable QD using the regression results on the total variables, we have the following results: ANOVA table with F-test sig value equal to 0.000 < 0.05, therefore, the regression model is appropriate. From the Coefficients table gives us the t-test results to evaluate the hypothesis of the significance of the regression coefficient, we have the NC variable with a positive regression coefficient (0.474) and a very low p value (p < 0.001), showing that the positive and statistically significant relationship with the dependent variable QD, followed by the variable TV with a positive regression coefficient (0.235) and very low p value (p < 0.001); Finally, the variable DH has a positive regression coefficient (0.186) and a very low p value (p < 0.001). The variables GD and BT have p values > 0.05 so there is no correlation with the dependent variable QD. The linear regression equation can be built from the Coefficients table using the regression coefficient (B) values for each independent variable. The linear regression equation can be written as follows:

$Y = 0.314 + 0.474NC + 0.186DH - 0.045BT + 0.235TV + 0.056*GD + \varepsilon$

3.1.5. Multivariate Regression

Perform the CFA analysis, we have the following model:

Figure 3. Overall EFA analysis results
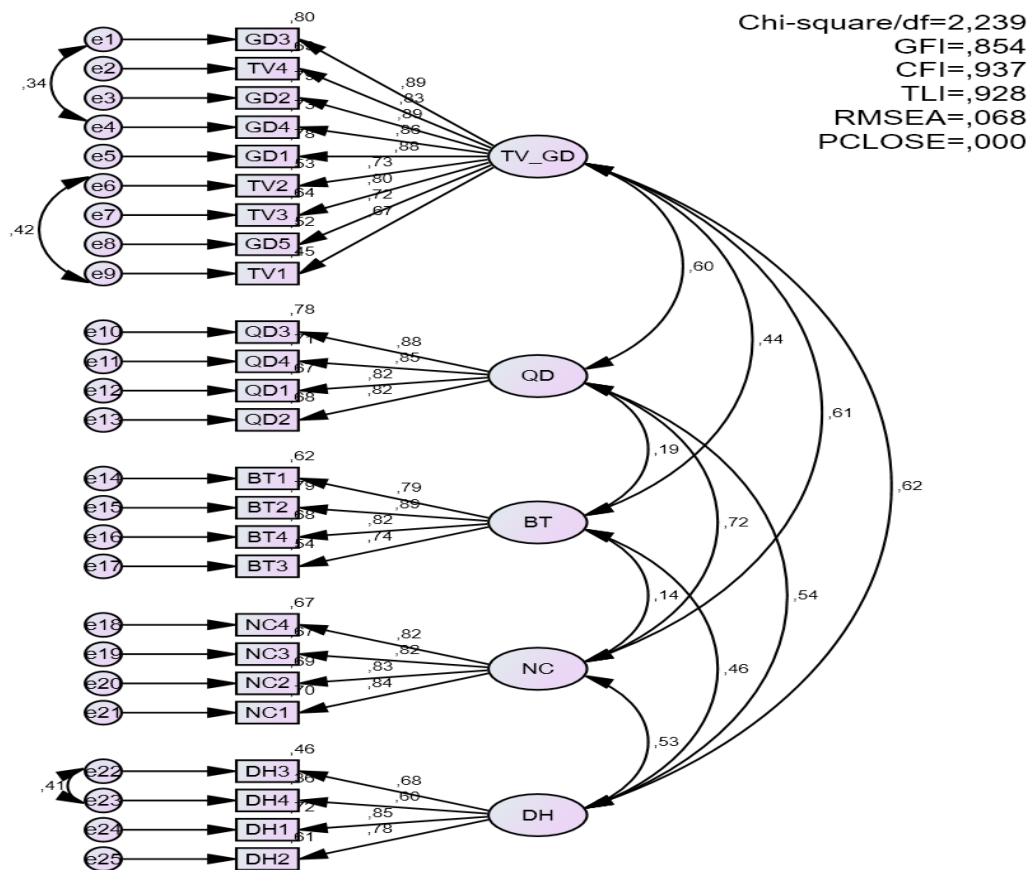
From the results of CFA analysis we have the following results: Chi-square/df (χ^2/df) has a value of 2.230<3, showing that the model has a good fit to the data; CFI value of 0.937 >0.9 for CFI also shows that the model fits better than the reference model; TLI value of 0.928 >0.9 for TLI also shows that the model fits well; RMSEA is 0.068 < 0.08 indicating that the model has a relatively good fit to the data. PCLOSE is the value related to model fit. A value of 0 indicates a perfect model fit to the data.
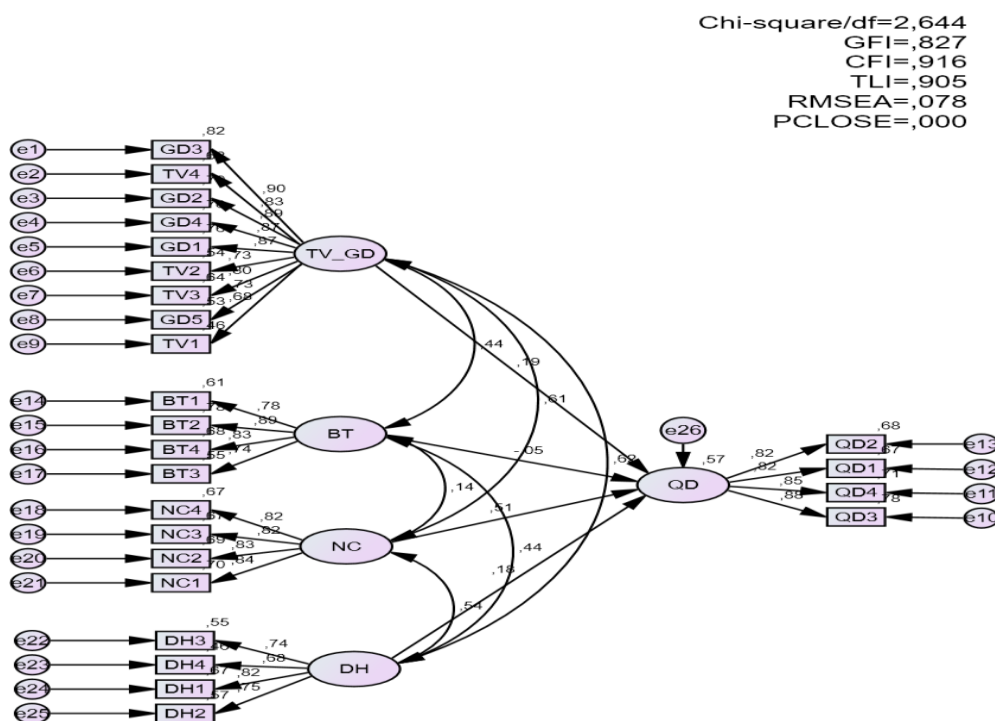
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Figure 4. Results of EFA analysis of independent variable on dependent variable.

Based on the results of the Standardized Regression Weights table, we can draw the following results: The QD variable has a positive relationship with NC (Estimate = 0.513), with TV_GD (Estimate = 0.189), and DH (Estimate = 0.180), This means that increasing the value of these variables also increases the value of QD.

However, QD has a negative relationship with BT (Estimate = -0.046), meaning that increasing BT will decrease QD.

3.1. Discussion

After combining the independent variables into NC, DH, BT, TV, GD and the dependent variable QD, running the Correlation results of the above variables, we have the result between QD and the independent variable NC (r = 0.652, p < 0.001) . This concludes that there is a strong positive relationship between QD and the independent variable NC. From there, we confirm hypothesis H3: Students' career choices are strongly influenced by the needs of the labor market.

Second, the QD variable and the independent variable TV (r = 0.580, p < 0.001), draw the conclusion that there is a strong positive and statistically significant correlation between these two variables. From there, we confirm hypothesis H5 that career counseling has a significant influence on students' career choice decisions. Third, the variable QD and the

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independent variable GD (r = 0.540, p < 0.001) also have a positive correlation, confirming hypothesis H2 that students' career choices are significantly influenced by their families. Fourth, the variable QD and the independent variable DH (r = 0.495, p < 0.001), have a positive correlation, confirming hypothesis H4 that students' career choices are influenced by university factors. Finally, the variable QD and the independent variable BT (r = 0.164, p = 0.007) also have a positive but weakest correlation, which still confirms hypothesis H1 that students' career choice decisions are significantly influenced by pupil's themselves.

4. CONCLUSION

According to the above research results, we can draw the following conclusions:

Firstly: The results from the KMO coefficient (0.928) and the Bartlett test (P-value = 0) show that the data are suitable to perform exploratory factor analysis (EFA). EFA extracted 5 factors from 25 observed variables, and the extracted variance of these 5 factors accounted for 73.68% of the total data variation.

Secondly: Pearson correlation between variables was evaluated. The variables NC1, NC2, TV1, GD1, NC4, TV2, and NC3 are strongly correlated with the dependent variable QD because they have R > 0.5 and Sig (p-value) of Pearson correlation = 0 < 0.05. This implies that these variables have a positive impact on students' career choice decisions. The variables GD2, TV3, GD3, GD5, GD4, TV4, DH2, DH4, DH1, DH3 have average correlation with the QD variable. Other variables have a weak correlation with the QD variable because R < 0.3. Among them, it is worth noting the research variables (job 1 has high income, job 2 has great recruitment demand, job 4 has a tendency to develop in the future, job 3 has a tendency to integrate internationally).

Thirdly: A linear regression model is built to predict career choice decisions (QD) based on independent variables. Regression analysis shows that the variables NC, TV, and DH are positively and statistically significantly correlated with the dependent variable QD, while BT and GD are less correlated with QD.

Fourthly: A specific linear regression equation can be used to predict the value of QD based on the variables NC, DH, BT, TV and GD. This equation is:

$$QD = 0.314 + 0.474NC + 0.186DH - 0.045BT + 0.235TV + 0.056*GD + \varepsilon$$

Fifthly: A student's career choice decision is strongly influenced by the needs of the labor market, career counseling, family, university factors, and even the high school students' himself/herself impact. These are important factors in high school students' career decisions.

From the above research, the author makes recommendations for universities, colleges, high schools, families and high school students themselves in general and in Thai Nguyen province in particular:

Developing an Integrated Career Program: Based on the results of exploratory factor analysis (EFA), it is possible to develop an integrated career program based on important

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factors to help students better understand the factors Deciding on career choice and developing career-oriented skills.

Strengthening Career Counseling: Given the importance of career counseling, it is necessary to create professional counseling programs to support students in the career selection process, especially focusing on important variables such as research, TV, and DH.

Suggested Potential Careers: Based on the results of strong correlations between career variables (NC1, NC2, TV1, GD1, NC4, TV2, and NC3) and career choice decisions, a list can be provided. high-potential careers for students, helping them better understand their options.

Family and Parent Support: Families play an important role in a student's career decision, so information and support can be provided to parents on how they can support their children during their career. career selection process.

Developing Diverse Training Programs: Based on the results of the linear regression model, it is possible to develop courses and training programs related to important variables such as research, TV, and teaching to help Students develop skills and knowledge necessary for career choices.

The author continues to research to better understand how factors such as the labor market, family, and university impact students' career decisions, helping to develop more effective support strategies.

REFERENCES

[1] career theory and Holland's - Available at: https://www.google.com/search?.

[2] Chapman, D. W. (1981). A model of student college choice. The Journal of Higher Education, 52(5), 490-505. - Yahoo Search Results [Internet].

[3] Marvin J. Burns. Factors influencing the college choice of african-american students admitted to the college of agriculture, food and natural resources. A Thesis presented to the Faculty of the Graduate School. University of Missouri-Columbia (2006).

[4] Ruth E. Kallio's research model - Tìm trên Google [Internet]..

[5] Joseph Sia Kee Ming, "Institutional Factors Influencing Students' College Choice Decision in Malaysia: A Conceptual Framework", International Journal of Business and Social Science, Vol. 1 No. 3; December 2010.

[6] Russayani ISMAIL, "Factors affecting choice for eduation destination: A case study of international students at Universiti Ltara Malaysia, Department of Economics", College of Arts and Sciences Universiti Utara Malaysia, 2010

[7] Litten LH. Different Strokes in the Applicant Pool: Some Refinements in a Model of Student College Choice. The Journal of Higher Education [Internet].

[8] Dinh HVT. Factors Influencing the Students' Perceptions of the Quality of Education Services at Hue University in Vietnam. IJES [Internet].

[9] L.N. Liem (2010). Identifying the factors influencing the university selection decisions of Lac Hong University undergraduate students (in Vietnamese). A scientific research endeavor - Yahoo Search Results [Internet]. [cited 20 Tháng Hai 2024].

.

.

[10] L.T.N. D, N.B. H. Factors influencing group work of students in learning English as a foreign language (EFL): A case study at a Vietnamese university. CTU Journal [Internet]. 2017 [cited 20 Tháng Hai 2024];06:9. Available at: https://ctujs.ctu.edu.vn/index.php/ctujs/article/view/161.

[11] nguyễn phương toàn (2011) nghiên cứu các n to anh huong den ket qua hoc tap - Yahoo Search Results [Internet]. [cited 11 Tháng Ba 2024].

[12] Hair et al, 2014 - Tìm trên Google [Internet]. [cited 9 Tháng Ba 2024].

[13] D. Novaliendy, Y. Hendriyani, C.-H. Yang and H. Hamimi, "The optimized K-means clustering algorithms to analyze the budget revenue expenditure in Pa-dang," Proceeding of the Electrical Engineering Computer Science and Infor-matics, vol. 2, no. 1, pp. 61–66, 2015.

[14] M. Adri, H. Hanesman, T. Sriwahyuni, and A. Almasri, "Digital Marketing Sebagai Metoda Alternatif Wirausaha Bagi Mahasiswa Di Universitas Negeri Padang", JTIP, vol. 12, no. 2, pp. 68-76, Dec. 2019..

[15] D. Novaliendry et al., "Development of an Expert System Application to Detect Vitamin Deficiencies in the Human Body," International Journal of Early Childhood Special Education (INT-JECSE), vol. 29, no. 5, p. 956, 2020, doi: https://doi.org/10.24205/03276716.2020.1092.

[16] L. N. Kusumo, M. C. Wijanto, R. Tan, and Y. Royandi, "Implementasi Realtime Cloud Service dalam Pengelolaan Nilai Tugas Akhir Mahasiswa," *J. Tek. Inform. dan Sist. Inf.*, vol. 9, no. 2, pp. 1–10, 2023, doi: 10.28932/jutisi.v9i2.6566.

[17] D. Novaliendry, R. Darmi, Y. Hendriyani, M. Nor and A. Azman, "Smart Learn-ing Media Based on Android Technology," International Journal of Innovation, Creativity and Change., vol. 12, no. 11, pp. 715–735, 2020.

[18] L. Hidayati, F. Rizal, and S. Syahril, "Development of Android-Based Career Guidance Media", JTIP, vol. 14, no. 2, pp. 99-105, Sep. 2021.

[19] R. Sahu, S. R. . Dash, and S. Das, "Career selection of students using hybridized distance measure based on picture fuzzy set and rough set theory", Decis. Mak. Appl. Manag. Eng., vol. 4, no. 1, pp. 104–126, Mar. 2021.

[20] R. Darni and L. Mursyida, "Career Exploration System (C-EXSYS) in Era Society 5.0 Based on Expert System", JTIP, vol. 14, no. 2, pp. 131-143, Oct. 2021.

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