

Factors Affecting Entrepreneurial Motivation and Intention of University Students in Hanoi, Vietnam

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Abstract: Entrepreneurship is the key driver of economic progress in many countries; thus, many countries have introduced policies to promote a more entrepreneurial environment. This study assesses the impact of factors affecting entrepreneurial intention of university students. The data was collected through a survey of 341 students at 09 leading universities in Hanoi, Vietnam and analyzed using structural equation modeling (SEM) with SPSS and Amos software. The research results show that entrepreneurial skills, entrepreneurial environment and subjective norms either directly or indirectly affect business motivation and entrepreneurial intention of university students. Thus, it is suggested that university and other educational institutions should provide more activities and taught courses that help students acquire the knowledge and skills necessary for entrepreneurship.

Index Terms: Entrepreneurial intention; business motivation; structural equation modeling

1. Introduction

Entrepreneurship is considered as one of the key drivers of economic progress in many countries, especially in developing ones [1]. Research pointed out that start-ups contribute to socio-economic change, sustainable economic development, knowledge economy, job creation and increased labor productivity [2-5]. They also play a key role in the diffusion of innovations across society [6-7].

Recognizing the importance of start-up activities, many countries have introduced policies and measures to encourage individuals to start new ventures. There are various factors affecting business motivation and entrepreneurial intention of businesses and individuals, such as personal attitudes [8-10], subjective norms [11-12]; perceived behavioral control [10], entrepreneurship education [13], entrepreneurial skills [12,14], entrepreneurial readiness [9]. However, there are only a few studies examining the impact of factors affecting entrepreneurial motivation on students' intention to start a business, especially in Vietnam. In fact, while most studies in Vietnam about this topic use scale of factors adopted from various sources, their common limitation is not using the structural equation modeling in analyzing the dataset. On the other hand, due to the distinct contexts regarding economic development, history and culture of each country, the factors that influence business motivation and entrepreneurial intention of individuals could exert profound effect differently. Finding out what factors affecting students' motivation to start a business will help universities and policy makers make appropriate adjustments to facilitate entrepreneurial activities.

Adopting the scale of factors influencing business motivation and entrepreneurial intention from reliable sources, the research team has conducted a survey to gather data from college students in Hanoi (Vietnam), a place where many startup projects were founded, and applied SEM to analyze the data. SEM allows this study to explore the reciprocal effects between variables of interest, which is an improvement since existing studies mainly explore the one-way effect that the independent variables have on the dependent one. With the scale of factors in this study focus mainly on the education aspect, this study evaluates factors affecting entrepreneurial motivation and intention of university students in Hanoi to provide suggestions to the policy makers and universities' boards of directors. Section 2 presents an overview of studies on factors affecting students' entrepreneurial intention. Research model and methodology will be presented in Section 3. Section 4 discusses the analysis results of factors affecting entrepreneurial intention of students in public universities in Hanoi, Vietnam. The final part will provide some conclusions and remarks.

2. Literature Review

There are a large number of studies about entrepreneurial intention. The following section examines literature concerning factors affecting student's entrepreneurial intention and reports the development of the hypotheses.

a. Entrepreneurial environment

Higher education provides students with the knowledge and competencies necessary for career development [12]. It can also foster entrepreneurship spirit as well as dampen students' motivation to venture into a new business, depending on how universities organize their entrepreneurship-related environment [15]. In other words, entrepreneurship education substantially promotes entrepreneurial intention [16]. The more the educational environment supports entrepreneurship, the stronger the student's motivation to start a business, especially among business students [15].

Many studies have confirmed the vital role of entrepreneurship education in fostering entrepreneurship [17-20]. For example, Mamun et al. [13], by using a cross-sectional design and quantitative approach for collected data (stratified random sampling technique was applied and the sample size was calculated by the power of 0.95 through G-Power), pointed out that among factors affecting entrepreneurial intention of university students in Malaysia, university environment plays a vital role in the start-up wave in this country by providing high-quality business training courses and programs as a source of entrepreneurial knowledge and information, which can affect perceived behavioral control and acts as one of its significant dimensions. Shah et al. [21], studied factors affecting the entrepreneurial intention of students in the higher education institutes of the Sultanate of Oman, showed that although attitude towards entrepreneurship, subjective norms, and self-efficacy are important predictors of business intention, entrepreneurship education could have a significant moderating role (i.e. reinforcing the right attitudes towards entrepreneurship and self-reliance and weakening subjective norms). However, different contexts require entrepreneurship education activities to be designed accordingly [16]. Training is most effective when Total Entrepreneurial Activity Index and percentage of trained individuals are low [22]. Research conducted by Hongmei [23], by surveying the thoughts of university students about entrepreneurship education, confirmed the role and proposed a number of policies to promote the development of entrepreneurship education at Chinese universities in a healthy way. On the other hand, considering the role of curriculum and incubators in the generation of new businesses operating in the information technology sector in Indonesia, the study of Wiradinata & Antonio [24] found that the role of curriculum is to create a formal knowledge about ideation and process of start-up.

From these discussions, the authors introduce the following hypotheses:

H1a: Educational environment has positive effects on entrepreneurial intention of university students

H1b: Educational environment has positive effects on entrepreneurial skills of university students

H1c: The educational environment has positive effects on the subjective norm of university students

b. Entrepreneurial skills

A number of studies have discussed the influence of entrepreneurial skills on business intention. The skills a person needs to start a firm are numerous, such as identifying new business opportunities, creating products and services, managing innovation, building a professional network and developing a management system [25]. Individuals who perceive themselves as having a certain skill level will be more confident in creating new business [14,26]. Gieure et al. [12] asserted that entrepreneurial skill is a crucial factor since it could affect business intentions both directly and indirectly through personal attitudes - one of the key factors affecting entrepreneurial intention which has been discussed in many different studies in the same field. Other studies also confirmed a positive relationship between skills and entrepreneurial motivation [27, 28].

However, Yousaf et al. [11] argued that students' existing skills and competencies are not decisive factors in developing their intention to start new businesses. Students can become successful entrepreneurs as long as they have the entrepreneurial attitude and necessary support. The reason is that skill acquisition is life-long, thus current skill level would not create obstacles when fostering students' intentions. These discussions lead to the following hypotheses:

H2: Entrepreneurial skills have positive effects on entrepreneurial intention of university students

c. Subjective Norms

Subjective norms are personal acknowledgement of their important self-values in business and start-up decision-making process [12]. Li ñán et al. [14] showed that subjective norms are a factor influencing the behavioral intention. Yousaf et al. [11] pointed out that business attitude of the college students, the ability to demand for being acknowledged, and the subjective norms motivate the college students to become an entrepreneur. On the other hands, other researchers claim that subjective norms have either a weakly direct effect or no effect on the behavioral intention of the sample subjects [29-31].

Therefore, the hypothesis H3 is stated below:

H3a: Subjective norms have a positive effect on business motivation of college students.

H3b: Subjective norms have a positive effect on entrepreneurial intention of college students.

d. Business motivation and entrepreneurial intention

Table 1. Scale of factors influencing the business motivation and the entrepreneurial intention of college students

No.	Factors	Items	References
1	Educational environment	The main courses in the college fully prepare me to start a business	[12,16,18-22]
		My college has enough resources to support me in developing my business idea	
		My college often hosts activities and contests related to startup	
		My college helps students develop necessary skills to become an entrepreneur	
		My college has expert lecturers giving advices to develop business idea	
		My college often invites successful entrepreneurs as guest speakers to inspire students to build up business ideas	
		My college collaborates with many organizations and businesses to support entrepreneurial ideas of students	
2	Subjective norms	My family will support my decision to start a business	[9,11,12,14, 30,31,37]
		My friend will support my decision to start a business	
		It is a tradition to start a business in my family	
		The person who I look up to influences my decision to start a business	
		My family members influence my decision to start a business	
3	Entrepreneurial skills	If I struggle in starting my business, my family and friends will always support me	[9,11,12,14,25]
		I can sense business opportunities.	
		I am creative enough to become an entrepreneur	
		I have my own skill set to deal with problems	
		I have leadership and communication skills	
		I know how to develop new products and services	
		I know how to build new professional connections	
4	Business motivation	I can take the risk of running a business	[9,35,38,39]
		I run my business to enjoy the excitement	
		I run my business because I like challenges	
		I run my business to develop myself	
		I run my business to get recognized by the public	
		I run my business to achieve high income	
		I become an entrepreneur to improve my social status	
		I start my business to accumulate my wealth	
		I want to achieve higher social rank	
		I want to be independent	
		I become an entrepreneur to take over my family business	

5	Entrepreneurial intention	I am determined to build up a business in the future	[12,14,40]
		My career goal is to become an entrepreneur	
		I have seriously thought about setting up a business	
		I will do my best to start my own business	
		I plan to set up a business in five years after my graduation	

There are a few researches which point out the relationship between the business motivation and the entrepreneurial intention. Murray [32] have confirmed of a close relationship between achievement motivation and business. Murray [32] also claims that the need for achievement also associate with the business intention and other needs such as the need for self-excellence, the need for competition and outperforming others, and the need to improve self-esteem throughout training personal abilities. Shane et al. [33] stated that most, if not all, motives influence the transition of business phases. Carsrud and Brännback [34] indicated that the business motivation is an important factor explaining different business behaviors.

Keat & Ahmad [35] indicated that college students in Malaysia have incentives to start a business because of internal benefits, external rewards, and the ability to be independent of becoming an entrepreneur. The authors also stated that men are more likely to have business intention, business motivation, and the ability to deal with challenges in starting a venture than women. Marques et al. [36] pointed out that business motivation and the entrepreneur personality traits are the best explanatory factors influencing the business intention of healthcare workers in their own working organization.

Therefore, we propose hypothesis H4 as below:

H4: The business motivation has a positive impact on the entrepreneurial intention of college students.

3. Research model and methodology

3.1. Research model

Figure 1 represents the research model based on the literature review, which consists of five factors: educational environment, entrepreneurial skills, business motivation, subjective norms, and entrepreneurial intention. The scale is presented in table 1.

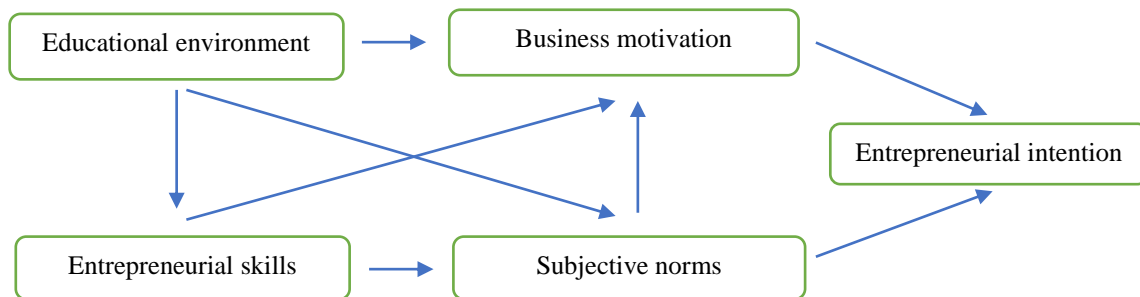


Fig.1. Factors affecting business motivation and the entrepreneurial intention

3.2. Data collection

The data used in this research is gathered through random sampling method. The surveyed sample are juniors and seniors from 09 popular universities of three groups in Hanoi city – one of two cities with the highest concentration of universities in the country. They include: Economics (VNU University of Economics and Business, National Economics University, Thuongmai University), Pharmacy and Health Sciences (Hanoi Medical University, Hanoi University of Pharmacy, VNU Medical School), Engineering Science and Technology (Hanoi University of Science & Technology, VNU University of Engineering and Technology, Posts and Telecommunications Institute of Technology). The universities selected for this survey are all top universities in each industry group. At the same time, these 3 industry groups are observed to have a higher proportion of students starting a business during and after graduation than the rest of the industry groups in Vietnam.

In order to do factor analysis, the sample size of the research must be at least five times greater than the total number of observed variables [41]. In this paper, there are 36 observed variables, and the minimum requirement of the sample size is 180. Therefore, the sample size in this paper, which is 341, fully satisfies the aforementioned requirement and is representative of the chosen population.

3.3. Data analysis

In this research, the structural equation modeling (SEM) is applied to analyze the effect of the three factors on business motivation and entrepreneurial intention of college students. The detailed steps of the methodology are presented below:

a. Internal consistency

Cronbach's Alpha is applied to measure the reliability of the scale and each measurement variable. Based on the coefficient of Cronbach's Alpha, inappropriate variables will be removed before conducting factor analysis. Variables with corrected item-total correlation < 0.3 will be taken away. The scale is considered reliable when it varies from 0.7 to 0.8. If Cronbach's Alpha is greater or equal than 0.6, the reliability of the scale is accepted [42].

b. Exploratory Factor Analysis - EFA

EFA is then used to identify common factors affecting the business motivation and the entrepreneurial intention of the college student. The reduction of variables is based on the linear relationship between factors and the observed variables. During EFA application, variables with factor loading smaller than 0.4 will continue to be removed [43]. On the other hand, observed variables that appear and are measured at the same time in two latent variables while these factor loadings do not differ by at least 0.3 (in absolute value) will also be excluded. Another case also leads to the elimination of the observed variable is that they are isolated only in one latent variable. The coefficient extraction method used in this paper is the principal axis factoring with promax rotation method, and the stop point of coefficient extraction has eigenvalue equal to 1. The scale is accepted when the cumulative of variance is greater or equal to 50% [43].

c. Confirmatory Factor Analysis - CFA

CFA is performed to investigate the proposed model's goodness of fit by employing a number of statistics: Chi-square/degrees of freedom, Comparative Fit Index (CFI), Tucker & Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI). Since the chi-square statistic could be easily affected by sample size, the ratio of chi-square index to the degrees of freedom is preferred in practice. A low chi-square value relative to the degrees of freedom indicates better model fit [41]. CFI, GFI and TLI indices with value > 0.9 and RMSEA < 0.08 (ideally < 0.05) show that the model can be considered as a good fit one [44].

4. Data analysis result

4.1. Descriptive summary

The survey result has 341 completed and qualified questionnaires. The proportion of students participating in the survey by gender is relatively equal, in which men account for more (55.4%). The number of students of each university participating in the survey depends on the actual training size of the universities. In which, the number of respondents from the National Economics University accounted for the highest proportion (24.3%), followed by the Thuongmai University (21.1%), the number of respondents from the VNU Medical school accounted for the lowest percentage (1.5%).

Third-year and fourth-year students of universities are students who have had time to accumulate knowledge and experience through extracurricular activities and part-time jobs. the potential for entrepreneurship is higher than that of the rest of the students. Data from the survey sample for third-year students accounted for the majority (76.0%). About 53.7% of respondents study economics, and 36.4% major in engineering sciences and technology. Only 10% of survey participants study pharmacy and health. The majority of the survey respondents are in junior year.

Table 2. Descriptive summary result

Criteria	Components	Size	Ratio (%)
Gender	Female	152	44.6
	Male	189	55.4
University	VNU University of Economics and Business	28	8.2
	Thuongmai University	72	21.1
	National Economics University	83	24.3
	Hanoi Medical University	13	3.8
	Hanoi University of Pharmacy	16	4.7
	VNU Medical School	5	1.5
	VNU University of Engineering and Technology	31	9.1
	Posts and Telecommunications Institute of Technology	32	9.4
	Hanoi University of Science & Technology	61	17.9

Major	Economics	183	53.7
	Engineering Sciences and Technology	124	36.4
	Pharmacy and Health Sciences	34	10.0
Student classification	Junior	259	76.0
	Senior	82	24.0

4.2. Reliability of the scale

Table 3 presents the result of the reliability test of the scale. It shows that the Cronbach's Alpha coefficients of all variables satisfy the requirement. The coefficients of the five items are higher than 0.7, and the corrected item-total correlations are all greater than 0.3. The result means that the survey items have relatively high internal consistency, and additional analyses can be performed.

Table 3. Result of reliability test of the scale

Factor	Coefficient of Cronbach's Alpha	Observed variable	Corrected item-total correlation
Subjective norms	0.796	QCCQ1	0.554
		QCCQ2	0.476
		QCCQ3	0.452
		QCCQ4	0.582
		QCCQ5	0.594
		QCCQ6	0.656
Educational environment	0.916	MT1	0.622
		MT2	0.743
		MT3	0.723
		MT4	0.754
		MT5	0.811
		MT6	0.782
		MT7	0.758
Entrepreneurial skills	0.906	KN1	0.740
		KN2	0.709
		KN3	0.692
		KN4	0.750
		KN5	0.725
		KN6	0.755
		KN7	0.668
Business motivation	0.914	DL1	0.911
		DL2	0.910
		DL3	0.899
		DL4	0.908
		DL5	0.902
		DL6	0.901
		DL7	0.904
		DL8	0.901
		DL9	0.910
		DL10	0.913
Entrepreneurial intention	0.921	YD1	0.898
		YD2	0.905
		YD3	0.901
		YD4	0.908
		YD5	0.906

4.3. Result of explanatory factor analysis

Explanatory Factor Analysis (EFA) is conducted to analyze the convergent and discriminant validity of the scale. After removing unsuitable variables (MT1, QCCQ1, QCCQ2, QCCQ3, KN3, DL1, DL2, DL4, DL9, DL10), the KMO correlation is 0.944, which is in the required range from 0.5 to 1.0. The significance level of Barlett's test of sphericity (0.00) also indicates that factor analysis is suitable for the obtained dataset. Additionally, the significant level of Barlett's test also points out that the observed variables have a linear relationship with the representative factors.

A total of five factors is extracted and rotated. Table 4 below presents the result of the rotated component/factor matrix. The cumulative variance explained is 65.33%, which satisfies the requirement that the cumulative variance is higher than 50%. EFA assessment confirms that five proposed factors adequately represent the data.

Table 4. Rotated component matrix

Observed variables	Factor				
	1	2	3	4	5
MT6	.884				
MT5	.841				
MT7	.834				
MT3	.809				
MT4	.755				
MT2	.677				
YD3		.948			
YD5		.849			
YD1		.834			
YD2		.768			
YD4		.768			
DL8			.946		
DL6			.906		
DL5			.893		
DL7			.656		
DL3			.627		
KN5				.904	
KN6				.819	
KN4				.758	
KN2				.651	
KN1				.627	
KN7				.536	
QCCQ5					.862
QCCQ4					.639
QCCQ6					.534
Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.					
a. Rotation converged in 6 iterations.					

4.4. Result of CFA

The result of CFA in figure 2 shows that the model fits the data. The value of Chi-square/df is $2.315 < 3$. The value of CFI is $0.91 > 0.9$, and the value of TLI is 0.932 which is also greater than 0.9. The coefficient of RMSEA = $0.062 < 0.08$. The CFA assessment strongly supports the measurement of each factor.

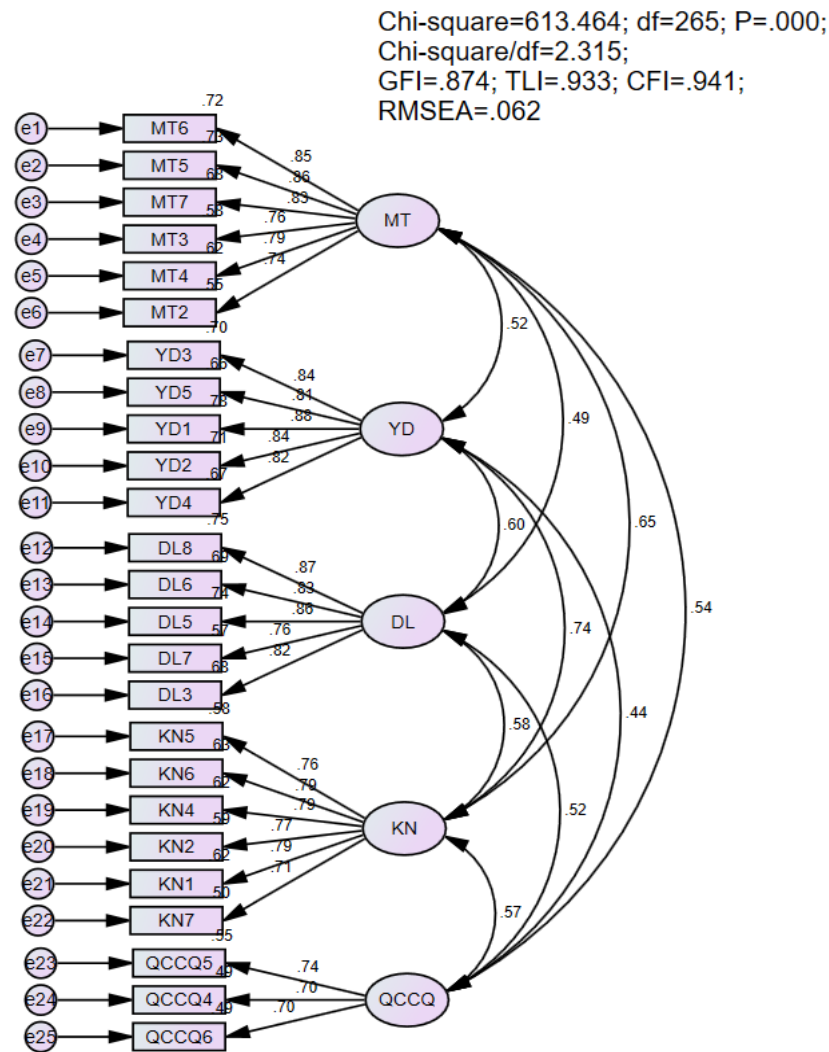


Fig.2. The result of Confirmatory Factor Analysis

4.4. Result of structural equation modeling (SEM) analysis

Figure 3 presents the result of the factor's effect analysis in the model. The result shows that the value of Chi-square/df is $2.737 < 5$. Additionally, GFI = 0.85, TLI = 0.912, and CFI = 0.921 are all greater than 0.8. The coefficient of RMSEA is $0.071 < 0.08$. Thus, the model fits the obtained dataset.

Table 5 shows that the educational environment (MT) has an effect on both entrepreneurial skills (KN) and subjective norms (QCCQ) at 1% significance level. However, the environment factor's impact on the business motivation of college students has no statistical meaning. On the other hand, the entrepreneurial skills affect the business motivation at 1% significance level. The result also shows that the subjective norms have impact on both the business motivation and the entrepreneurial intention at 1% significance level. Finally, the business motivation has an effect on the entrepreneurial intention of college students at 1% significance level.

Chi-square=733.423; df=268; P=.000;
Chi-square/df=2.737;
GFI=.850; TLI=.912; CFI=.921;
RMSEA=.071

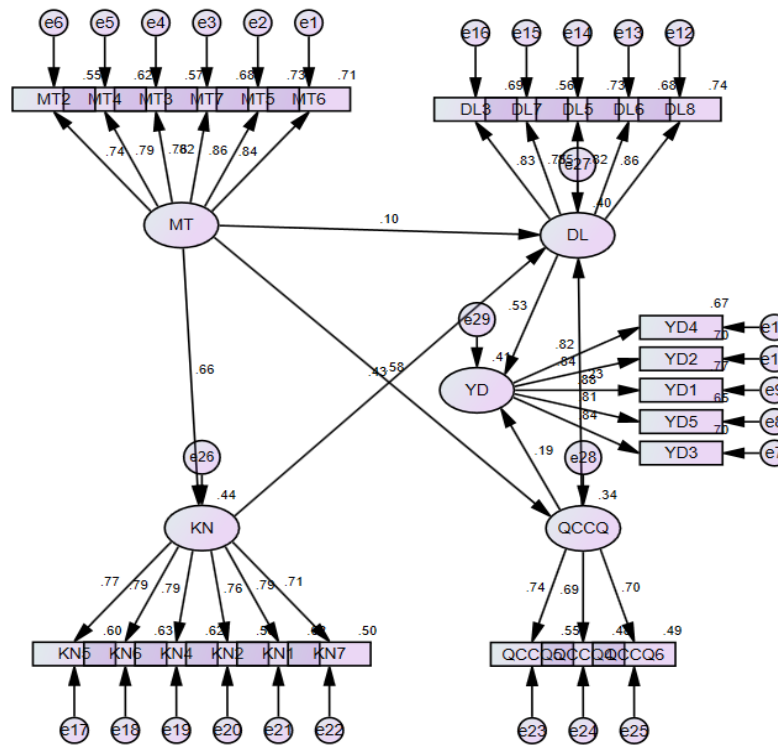


Fig.3. The result of SEM analysis

Table 5. The result of standardized coefficients

Parameter			Estimate	S.E.	C.R.	P
KN	<---	MT	.518	.047	11.044	***
QCCQ	<---	MT	.549	.063	8.723	***
DL	<---	MT	.102	.085	1.200	.230
DL	<---	KN	.570	.097	5.901	***
DL	<---	QCCQ	.253	.079	3.210	.001
YD	<---	QCCQ	.201	.065	3.089	.002
YD	<---	DL	.508	.058	8.733	***

4.5. Result of Bootstrapping

The research team uses Bootstrapping with the resample size of N = 1000. The result of Bootstrapping is presented in table 6.

Table 6. Bootstrapping result

Parameter			SE	SE-SE	Mean	Bias	SE-Bias	CR
QCCQ	-	MT	0.075	0.002	0.588	-0.003	0.002	-1.50
KN	-	MT	0.049	0.001	0.671	-0.003	0.002	-1.50
DL	-	MT	0.094	0.002	0.104	-0.001	0.003	-0.33
DL	-	KN	0.105	0.002	0.408	-0.001	0.003	-0.33
DL	-	QCCQ	0.096	0.002	0.232	-0.001	0.003	-0.33
YD	-	DL	0.070	0.002	0.513	-0.001	0.002	-.5
YD	-	QCCQ	0.047	0.001	0.624	-0.005	0.003	-1.67

The results of Bootstrap test show that the absolute value of all items in the CR column (Critical Ratios) is always less than 1.96, inferring the p-value of the Bias test (Null hypothesis: Bias = 0; Alternative hypothesis: Bias \neq 0) is greater than 0.05. In other words, the null hypothesis is accepted at 5% statistical significance level. Therefore, the estimated model can be considered as a good fit one.

5. Discussions and Conclusions

The study assesses the impact of the factors affecting business motivation and the intention to start a venture of university students in Hanoi, Vietnam. Results show that entrepreneurial education (MT) has an impact on entrepreneurial skills (KN) and subjective norms (QCCQ). A possible reason could be that universities play a vital role as a higher education institution that provides the necessary infrastructure and activities to foster entrepreneurial mindsets and enhance entrepreneurial skills. This result is consistent with the findings of [12,13,16,20]. On the other hand, the environment factor has no direct impact on business motivation, but indirectly affects motivation through the subjective norms.

Second, entrepreneurial skills have positive effects on entrepreneurial intention. High-caliber people are more likely to recognize business opportunities, thereby boosting entrepreneurial motivation as well as entrepreneurial intention. These findings are in line with those of [12]. The third conclusion focuses on the positive effect of subjective norm on entrepreneurial motivation and entrepreneurial intention. This result is consistent with the studies of Liñán et al. (2013) and [11]. However, other studies have shown that subjective norm has little or no significant effect on entrepreneurial motivation and entrepreneurial intention [29-31].

Finally, entrepreneurial motivation has a direct impact on the intention to start a business, which is in accordance with the results obtained by [9, 35]. This implies that entrepreneurial intentions can only be realized if the individual is motivated to do so. Motivations that encourage individuals to start a venture could be desire for independence, increased income, increased personal wealth, or personal growth. Given these results, education is a great channel to stimulate the start-up activities of college students. Thus, college courses and activities should be designed to enhance the entrepreneurial skills of college students, and allocating resources to support the start-up activities is a necessary task for the colleges. The resources can be both material, such as support fund and working stations, and intangible, such as hosting entrepreneurial workshops and collaborating with start-up businesses to provide students with opportunities to further learn and improve their entrepreneurial skills. Last but not least, the values of financial independence, personal growth, and social welfare should be promoted in the college environment.

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