ENTREPRENEURIAL POTENTIAL OF UNIVERSITY STUDENTS
HANOI UNIVERSITY OF BUSINESS AND TECHNOLOGY

*PhD. Nguyen Thi Kim Chi, PhD. Pham Van Hieu,**
*Research fellow. Tran Thi Thanh Binh, **
*Research fellow. Le Huy Tung **
*Research fellow. Luu Hoai Nam***

***Summary**: The research aims at discovering the relationship between entrepreneurship education and entrepreneurial potential of university students. The paper introduces conclusions and policy implications for Hanoi University of Business and Technology. The results of this research may be a reference for other universities in Viet Nam.*

***Key words**: entrepreneurial intention, awareness of perceived desirability, awareness of perceived feasibility, entrepreneurship education, entrepreneurship training, entrepreneurial creation, students.*

1. Introduction

Students are a potential creative entrepreneurial group as according to GEM's survey in 2016, potential entrepreneurs are usually between the age of 20 and 24, in which students are at an advantage because they are elite, knowledgeable, well-trained and especially stand on the threshold of job selection.

The entrepreneurial awareness of Vietnamese students has certain differences. In many developed countries, entrepreneurship is based on creativity. However, entrepreneurial awareness in Vietnam is somewhat inclined to generating jobs, increasing income and being considered as a career choice (GEM, 2016). Therefore, creativity and innovation indexes of entrepreneurship in Vietnam are quite low compared to the world. Entrepreneurship in Vietnam is mostly about basic necessities and daily livelihood instead of creativity.

Most graduate have tendency to apply for enterprises, want to be employee, not employer and a few want to start a business. A few start their businesses but do not succeed because only passion is not enough. The reasons may be the lack of entrepreneurship education content in the current higher education programs.

With the acute awareness of Education's responsibility in the national entrepreneurship ecosystem, Decision No. 1665/QĐ-TTg of the Prime Minister approves the Project "Supporting

* Lecturers of the Faculty of Economics, Hanoi University of Business and Technology.
** Lecturers of the Faculty of Business Administration, Hanoi University of Business and Technology.

students to start their businesses to 2025." Universities in general and Hanoi University of Business and Technology in particular are currently implementing contents of this Project in order to motivate entrepreneurial spirit of students. This research is expected to provide reference information, foundations for administrators of universities to find out solutions to promote entrepreneurial activities of students.

2. Theoretical framework and relevant research results

2.1. Theoretical framework

a) Entrepreneurial Event Model

Entrepreneurial Event Model (EEM) introduced by Shapero and Sokol in 1982 says that entrepreneurship will appear when an individual discovers an entrepreneurial opportunity which is thought to be *possible* and they eager to explore. To put entrepreneurial intentions into practice, it is necessary to have motivating factors such as job loss, dissatisfaction with the current job, etc. or finding out good partners or having financial support, etc. Without them, it is difficult to start a business. In 2000, Krueger et al. adjusted and developed theoretical foundation and model of Shapero and Sokol (1982), giving three factors affecting entrepreneurial intention: perceived desirability, percieved feasibility and tendency of action.

b) Concepts in model and hypothesis

- Entrepreneurship:

Krueger and Brazeal (1994) define **Entrepreneurship** as starting a new business or being self-employed (Kovereid, 1996). According to Shapero and Sokol (1982), entrepreneurship is affected by changes in people' lives and their attitudes towards entrepreneurship.

- Awareness of entrepreneurial potential:

An individual with entrepreneurial potential is the person who may take risks and take necessary actions when detecting signals of business opportunities. Accordingly, entrepreneurial potential is expressed by *perceived desirability and feeling of self-confidence on entrepreneurship.*

Perceived desirability presents an individual's thinking about the attractiveness of entrepreneurship (Kruerger and Brazeal, 1994). Perceived desirability will induce them to start a business and make them want to become entrepreneurs. (Linan and Rodriguez, 2011).

Perceived feasibility of entrepreneurship reflects the belief in the ability to start a business or the belief in reaching a determined goal (Kruerger and Brazeal, 1994). Afterwards, Begley and Tan (2001) support the idea and perceived feasibility is identified as the confidence and possibility of being successful when starting a business. Lucas (2012) says that perceived feasibility is considered as "feeling of confidence" to start a business.

- Entrepreneurship education:

According to Linan (2004a), entrepreneurship education is entrepreneurship training activities to promote the development of the intention to start a business or several factors affecting that intention such as entrepreneurship knowledge, teaching methods, extracurricular activities, experience activities, etc.

- Entrepreneurship training activities

According to Souitaris (2007), entrepreneurship training is a learning process to gain knowledge in entrepreneurial spirit. Johannisson (1991) proposes to classify the concept by five levels of learning from entrepreneur education: why entrepreneurs

take action (value, motivation); what needs to be done (knowledge); how to implement it (feasibility, skill); who should know about skills (society, network); actions (experience and intuition). According to Rengiah (2015), entrepreneurship training program content includes: (i) analyze business strategies; (ii) collect and identify activities in different business environments; (iii) implement activities; (iv) apply skills to various complicated business situations.

- *Entrepreneurial creation*

According to Rengiah (2015), entrepreneurial creation is creating an encouraging environment, inspiring students to entrepreneurship by connecting with businesses, policy-makers and participating in projects with students to improve entrepreneurship environment. According to Nguyen Thu Thuy (2015), the role of creation of universities is shown by: (1) entrepreneurship inspiration, (ii) extracurricular activities; (iii) hands-on experiences.

2.2. Proposal of research model

Qualitative research of Segal et al. (2007), El-Khasawned (2008) and Vesa (2010) on entrepreneurship training activities in the world all show that it is applied with high practicality for students to increase their perception of entrepreneurship competence. Luthje and Franke (2004) also suggest enhancing practical applications of academic theories to entrepreneurship training programs based on experimental learning, learning by doing, action learning, and all increase individual's entrepreneurial potential compared to traditional teaching methods. From the above analyses, the authors of this paper think that the more practical the higher education programs are, the greater the perception of entrepreneurial opportunities and feasibility is and introduce the following hypotheses:

Hypothesis 1: Training programs have positive effects on students' perceived desirability

Hypothesis 2: Training methods have positive effects on students' perceived desirability

Hypothesis 3: Inspirational activities have positive effects on students' perceived desirability

Hypothesis 4: Hands-on experiences have positive effects on students' perceived desirability

Hypothesis 5: Extracurricular activities have positive effects on students' perceived desirability

Hypothesis 6: Training programs have positive effects on perceived feasibility of students.

Hypothesis 7: Training methods have positive effects on perceived feasibility of students.

Hypothesis 8: Inspirational activities have positive effects on perceived feasibility of students.

Hypothesis 9: Hands-on experiences have positive effects on perceived feasibility of students.

Hypothesis 10: Extracurricular activities have positive effects on perceived feasibility of students.

Model 1.1. Proposed research model

Source: Proposal of authors

3. Research methods and data

3.1. Research methods

Research methods are conducted by two phases: (i) Preliminary research and (ii) Official research.

Qualitative preliminary research is used to adjust observed variables in measurement of research concepts. The authors conduct through group discussion technique so that the scales are clearly and uniformly understood in terms of students' entrepreneurial intentions, connections and behaviors. Interview results are recorded, developed and adjusted into a draft scale.

Quantitative preliminary research is a draft scale used to do mock interviews with students in Hanoi University of Business and Technology under the convenience sampling method to verify the reliability of the scale. Then, the scale is fully completed and applied to the quantitative official research.

Quantitative preliminary research is conducted to evaluate the scale by realiability coefficients (Cronbach Alpha) and exploratory factor analysis (EFA)

3.2. Research data

a) Research sample

In terms of factor analysis, sample size depends on the number of variables in factor analysis. Hair thinks that the number of samples is five times more than that of variables. According to Hoang Trong and Chu Nguyen Mong Long (2008), the minimum observed number must be 4-5 times more than the number of observed variables in factor analysis. This research includes all necessary observations for factor analysis so the number of samples needed is 31*5=155.

According to Tabachnick and Fidell (1996), sample size $N \geq 8m + 50$ (m is the number of independent variables in the model) is to perform the best regression analysis. To test the scale, researchers do not give specific number of samples needed but ratio between the number of samples needed and the number of parameters that need to be estimated. In this research, the minimum sample size is 8*7 = 106.

This research uses both exploratory factor analysis EFA and linear regression methods so the authors synthesize both factors above, which means the sample must be 155 or over 155. According to the factual conditions in terms of time, human resource and finance, to ensure the reliability of the survey, the authors directly make survey and survey by email with about 400 survey questionnaires.

b) Scale

The scale of observed variables of concepts in the research model is developed based on the original scale of previous research and adjusted after qualitative research. Likert scale is with 5 levels: from level 1 (totally disagree) to level 5 (totally agree).

Table 1. **Scale of concepts in the model and origins of the scales**

Concepts in research	Number of observed variables	Origin
1. Perceived desirability	05	Kautonen (2015)
2. Perceived feasibility	06	Kautonen (2015)
3. Training content	05	Rengiah (2013)
4. Training methods	06	Rengiah (2013)
5. Inspiration	04	Souitaris et al. (2010)
6. Hands-on experience	05	Balan and Metcalfe
7. Extracurricular activities	06	Nguyễn Thu Thủy (2015)

Source: Synthesized by the authors

3.3. Research results and discussion

a) Sample descriptive statistics

There are 400 fourth-year students (during internship) with the major in Business Administration participating in this research. After selecting and removing those unproperly answered, the remaining 355 questionaires (55% male and 45% female) are synthesized with the following results: (i) The number of students currently running businesses: 14.59%; (ii) The number of students currently not running businesses: 85.21%; (iii) The number of students planning to do their own businesses in the upcoming time: 78.54%; (iv) The number of students not planning to do their own businesses: 21.46%; (v) The number of students who have tried doing business: 63.54%; (vi) The number of students who have never tried doing business: 36.46%.

b) EFA verification

Scales are verified by exploratory factor analysis method EFA and reliability is evaluated by Cronbach Alpha. The results of EFA for all factor groups show KMO coefficient = 0.734 > 0.5. Factor analysis is in accordance with research data. sig.< 0.05 means KMO test passes. After removing unsatisfactory scales, Cumulative % is 61.026%, greater than 50%. With this result, the data is categorized into five main groups.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.734
Bartlett's Test of Sphericity	Approx. Chi-Square	4446.158
	df	351
	Sig.	.000

Cognitive dependent variables in entrepreneurial potential is verified by EFA with KMO coefficient = 0.765 > 0.5, sig. < 0.05. Thus, research data passes. After removing unsatisfactory scales, Cumulative % is 60.075% > 50%. Dependent variables are divided into two groups.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.765
Bartlett's Test of Sphericity	Approx. Chi-Square	1297.976
	df	36
	Sig.	.000

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	3.430	38.107	38.107	33.430	38.107	38.107	22.893	32.143	32.143
2	1.977	21.968	60.075	1.977	21.968	60.075	22.514	27.932	60.075

Extraction Method: Principal Component Analysis.

c) Test of significance and suitability of the scale

All variables, verified by Cronbach' Alpha with coefficient > 0.7, pass.

Results of Cronbach' Alpha verification

No.	Number of scale	Cronbach's Alpha	Variable names
1	05	0,825	Perceived desirability
2	05	0,795	Perceived feasibility
3	05	0,841	Training content
4	06	0,824	Training methods
5	04	0,706	Inspiration
6	04	0,788	Hands-on experiences
7	06	0,807	Extracurricular activities

Source: Survey results in 2019

d) Verification of hypotheses by multiple regression model

- Verification with model 1:

Verification of hypotheses by multiple regression analysis gives the R2 calibrated value of 0.813, which means 81.3% of the values is explained by the factors included in the model. Factor proportion is statistically significant at 1%. Thus, these factors all impact students' perceived desirability variables. All hypotheses are accepted. The standardized beta coefficients are arranged in a descending order, showing the corresponding effects of variables on the dependent variable of perceived desirability. The specific order is as follows: (i) Teaching methods: 0.452; (ii) Teaching content: 0.221; (iii) Hands-on experiences: 0.207; (iv) Extracurricular activities: 0.095; (v) Inspirational activities: 0.075.

Table 2. **Result of multiple regression analysis in perceived desirability**

Factor	Non-standardized coefficient	Standardized coefficient	Qualitative test	Level of significance	Variance inflation factor
Constant	0,011		0,43	0,666	
Teaching content	0,221	0,221	8,75	0,000	1,000
Teaching methods	0,452	0,452	33,2	0,000	1,000
Inspiration	0,075	0,075	2,90	0,003	1,000
Hands-on experiences	0,207	0,207	8,19	0,000	1,000
Extracurricular activities	0,095	0,095	3,75	0,000	1,000
Level of significance = 0,000 Durbin – Watson coefficient = 1,790 R2 calibrated value coefficient = 81,3%					

Source: Survey results in 2019 by the researchers

- Verification with model 2:

Verification of hypotheses by multiple regression analysis gives the R2 calibrated value of 0.73, which means 73% of values is explained by the factors included in the model. Sig

coefficient is statistically significant at 1%. Thus, hypotheses are supported. The standardized beta coefficients are arranged in a descending order, showing the corresponding effects of variables on the dependent variable of perceived desirability. The specific order is as follows: (i) Entrepreneurship training methods: 0.413; (ii) Inspirational activities: 0.336; (iii) Teaching content: 0.236; (iv) Hands-on experiences: 0.206; (v) Extracurricular activities: 0.060.

Table 3: **Result of regression analysis model 2**

Independent variable	Non-standardized coefficient	Standardized coefficient	Qualitative test	Level of significance	Variance inflation factor
(Constant)	0		0,000	1,000	
Teaching content	0,236	0,236	4,450	0,000	1,000
Teaching methods	0,413	0,413	7,788	0,000	1,000
Inspiration	0,336	0,336	6,350	0,000	1,000
Hands-on experiences	0,206	0,206	3,893	0,000	1,000
Extracurricular activities	0,060	0,060	1,137	0,002	1,000
R2 calibrated value 0,731 Sig. of F-test0,000 Durbin-Watson coefficient1,918					

Source: Survey results in 2019 by the researchers

4. Result discussions and policy implications

4.1. Result discussions

According to Entrepreneurial Event Theory of Krueger et al. (2000), in terms of the suitability of research results with the judgment of Souitaris et al. (2007), education plays an important role in shaping intention but it is not affirmed to have direct impacts in this research. The factor of entrepreneurship education has a strong effect on the awareness of entrepreneurial potential.

The results of the measurement models show that the scale values all ensure the reliability (Cronbach Alpha coefficient, composite reliability) and allowable value (one-dimensional, average variance extracted, convergent validity and discriminant validity). Hypotheses are accepted. Thus, entrepreneurship education includes connotations which are entrepreneurshiptrainingandentrepreneurial creation activities, having a strong impact on the awareness of entrepreneurial potential. Although entrepreneurship education is already verified, some research has opposite effects (Frank and Luthje, 2004), others have favorable effects (Smith, 2008). In this research, all five factors (entrepreneurship training content, entrepreneurship training methods, entrepreneurship inspirational activities, hands-on experiences and extracurricular activities) have positive impacts on students' awareness of entrepreneurial potential.

4.2. Policy implications

The research results have confirmed the intimate relationship between entrepreneurship education and the awareness of entrepreneurial potential. Entrepreneurship education - in particular, entrepreneurship training and entrepreneurial creation activities in universities – positively contributes to motivating entrepreneurial awareness of students.

a) For students

Entrepreneurship education is important for students to raise their entrepreneurial awareness in order to form perceived desirability and entrepreneurial aspiration. To foster entrepreneurial intention, dare to experience and make entrepreneurial decision, students need to cultivate entrepreneurial knowledge by studying, participating in extracurricular activities, as well as proactively having hands-on experiences and forming numerous good entrepreneurial plans.

b) For Hanoi University of Business and Technology

First of all, the university should be aware of its important role in creating entrepreneurial potential for students through guidelines and policies towards promoting creative spirit, supporting students to develop their own entrepreneurial projects and arouse their entrepreneurial spirit. It is essential to have rewards granted to successful entrepreneurial individuals and research groups. It is also necessary to provide accurate and reliable information about projects, programs and contests that encourage students to start a business, such as the Project "Supporting students to start their businesses to 2025" of Ministry of Education and Training approved by the Prime Minister. There is a need of establishing information channels (Fanpage, consulting links, etc.) to address students' problems when starting businesses, share business experience, stabilize psychology, find out solutions to difficulties or provide links for students to study legal issues related to entrepreneurship, start-up, intellectual property, etc.

Secondly, it is necessary for the university to develop entrepreneurship training activities. Besides professional knowledge, the Entrepreneurship subject should be included in the curriculum to provide students with basic knowledge in startup. Lecturers should actively stimulate students' creative ideas by providing situational exercises, seminars, organizing entrepreneurial contests for students, positively supporting students to set up entrepreneurial projects. Hanoi University of Business and Technology have started with Entrepreneurship Contests; but still need to expand them to more students.

Thirdly, it is significant to enhance inspirational activities for students by stories of entrepreneurs, real stories about startup of teachers, former students, freshmen, etc.; organize exchanges, talk shows with guests so that students can discuss, express their opinions or receive advice from experts, entrepreneurs and obtain information about industries, entrepreneurship trends and make business intentions come true.

Fourthly, there is a need to provide hands-on experiences, extracurricular activities for students. Study goes as a pair with practice. It is necessary to collaborate with enterprises, economic organizations to create opportunities for students to do internship, etc. from there, to enhance students' creative ideas. Through these activities, students can broaden their relationships and obtain supports from enterprises for their entrepreneurial projects.

Fifthly, building a center to support students to start businesses, business incubators to give advice, find out sources of capital, complete topics, etc.

5. Limitations and further research directions

The subjects surveyed in this research are just fourth-students majoring in Business Administration in Hanoi University of Business and Technology. Therefore, generalization is still limited. If the survey is conducted with students of different academic years and majors, it will be possible to discover more obvious and genuine differences in students' awareness of entrepreneurship.

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TIỀM NĂNG KHỞI SỰ CỦA SINH VIÊN TRƯỜNG ĐẠI HỌC KINH DOANH VÀ CÔNG NGHỆ HÀ NỘI

TS. Nguyễn Thị Kim Chi *, TS. Phạm Văn Hiếu*
NCS.ThS. Trần Thị Thanh Bình *
NCS.ThS. Lê Huy Tùng *
NCS.ThS. Lưu Hoài Nam **

Trên nền tảng lý thuyết sự kiện khởi nghiệp (EEM) của Krueger & cộng sự (2000), nghiên cứu này được thực hiện nhằm khám phá mối quan hệ giữa giáo dục khởi nghiệp và tiềm năng khởi nghiệp của sinh viên năm thứ 4 tại trường Đại học Kinh doanh và Công nghệ Hà Nội.

Nhóm tác giả đã đề xuất mô hình nghiên cứu gồm 5 biến độc lập là: nội dung đào tạo khởi nghiệp, phương pháp đào tạo khởi nghiệp, hoạt động truyền cảm hứng khởi nghiệp, trải nghiệm thực tế, hoạt động ngoại khóa và 01 biến phụ thuộc là tiềm năng khởi nghiệp của sinh viên. Kết quả nghiên cứu nêu rõ cả 5 yếu tố nêu trên đều có tác động tích cực đến tiềm năng khởi nghiệp của nhóm sinh viên được khảo sát.

Cuối cùng, nghiên cứu đưa ra kết luận và hàm ý chính sách nhằm phát triển tiềm năng khởi nghiệp và đào tạo khởi nghiệp cho sinh viên trường Đại học Kinh doanh và Công nghệ Hà Nội, là thông tin tham khảo cho các trường đại học khác.

* Khoa Kinh tế, Trường ĐH KD&CN Hà Nội.
** Khoa Quản trị kinh doanh, Trường ĐH KD&CN Hà Nội.