

Effect of entrepreneurship education and personal characteristics to entrepreneurial intention: Empirical evidence on graduates from Vietnam

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Abstract

The area of entrepreneurship research has attracted the attention of numerous researchers as a way of encouraging growth in multiple countries. The determinants of entrepreneurial behavior have been a subject of interest for several researchers. This study examines the impact of entrepreneurship education and personal characteristics on the graduates who following a master program at the School of Economics, Can Tho University. The result indicates that entrepreneurship education, self-efficacy, entrepreneurial family background, motivation and perceived social support all significantly positively influence entrepreneurial intention. Furthermore, the research also observed the mediating role of perceived social support on the relationship between entrepreneurial family background and entrepreneurial intention. Based on the above results, several managerial implications are proposed to increase entrepreneurial intention of graduates.

Keywords: Entrepreneurship education, entrepreneurial intention, graduates, motivation, personal characteristics.

JEL Classification Codes: A20, A23, M30

1. Introduction

In recent years, Vietnam's government has encouraged students to participate in startup activities via several laws and programs to foster company beginnings. Instead of working for hire, this method assists students in creating their employment prospects, which supports economic development and the expansion of the business sector. However, a significant portion of adult Vietnamese citizens (46.6% in 2017) are terrified of failing in business ventures. This is a far cry from the average of 36.6% in the region's industrialized nations (GERA, 2018). Most Vietnamese individuals would rather hunt for hired work than launch their businesses due to a fear of failing. People with low levels of education make up the bulk of those in charge of corporate operations (Huynh, 2014).

In partnership with UNESCO, the Vietnam Institute of Educational Sciences analyzed Vietnam's education sector from 2011 to 2020 show the report that, in 2019, 2.8% of college graduates and more than 3% of university graduates were unemployed, while just 1.1% of vocational high school graduates were unemployed. This result demonstrates that a high percentage of student unemployment has been a challenging issue for many years. It is now more important than ever to find ways to encourage an "ownership mindset" and entrepreneurial spirit in people, mainly students, to ease financial strain and social difficulties related to work (Phan & Giang, 2015).

The number of entrepreneurship education programs offered by universities nowadays has increased. These programs provide prospective company owners with the information, abilities and attitudes they need to successfully launch and oversee a venture. Some researchers have voiced that entrepreneurship education in the curriculum will impact students' propensity to launch their businesses. Nevertheless, how much education might improve students' qualifications to become entrepreneurs still needs to be determined (Pittaway & Cope, 2007). Besides, other research suggest that entrepreneurship education programs often have lower success rates in helping adults, including university students, identify the skills advantageous to their entrepreneurial ventures (Oosterbeek, Van Praag & Ijsselstein, 2010). Meanwhile, it is indisputable that human traits play a part in shaping corporate trends. Personal characteristics that have been shown to impact the entrepreneurial process include motivation and self-efficacy. It sheds light on the complex dynamics of entrepreneurial ambition; thus, it is crucial to comprehend how these characteristics interact with conventional entrepreneurship education.

Furthermore, the recent COVID-19 outbreak caused an economic crisis and served as a "push" for Vietnam's economic growth. The COVID-19 pandemic had a detrimental influence on the economy for more than two years. There is now a chance for many investors to launch a sharing economy firm. Ratten (2020) supposes that new business goals may aid in our society's post-crisis recovery. Meanwhile, taking advantage of business possibilities is essential to boosting economic resilience (Kuckertz et al., 2020).

The study aims to shed light on the complex links between entrepreneurship education, personal characteristics and Entrepreneurial intention (EI). Analyzing the impacts of entrepreneurship education is more important than ever in the current setting, as scientific and technological advancements continue to change how people acquire and utilize information. Furthermore, there needs to be more study on entrepreneurship, with particularly little done on the entrepreneurial traits of graduates. There needs to be more information about how entrepreneurship education and characteristics influence graduates' EI. This research gives the fields of business and education a broader viewpoint. Research can create an adaptable and efficient educational system by better understanding how entrepreneurship education may successfully support EI. In addition, learning about the personal characteristics of graduates facilitates readers' in-depth analysis on the determinants of EI. Through several novels and distinctive qualities that have not been examined before, this study will provide more empirical evidence on EI.

2. Literature review and research model

2.1 Underlying theory

2.1.1 Theory of planned behavior

Theory of planned behavior (TPB) of Ajzen (1991) is one of the most widely used psychological theories to explain and predict human behavior. TPB describes how intentions are formed and how actions are performed using three main factors, named attitudes, subjective norms and perceived behavioral control. Attitude is a person's view of his behavior, comprising of values, beliefs and emotions. A popular view is that the influence of society, family and friends on a performer's behavior is determined by social consensus and peer pressure. Behavioral control is the ability and belief to control one's behavior in various situations.

TPB is extended by incorporating additional factors to enhance its explanatory and predictive capabilities. The application has been found in various studies, including health-related

behaviors, environmental concerns, shopping and numerous other fields. The model has undergone extensive research, evaluation and refinement to improve its accuracy and practical applicability. The TPB provides a comprehensive approach to understanding human behavior and can be applied across diverse research and practical contexts.

In this study, this model will be applied to better understand the impact of entrepreneurship education and personal characteristics on the EI of graduates. Graduates' attitudes are essential in forming decisions about starting a business. Perception of benefits, as well as assessment of the level of risk, will significantly influence positive or negative attitudes. In addition, ethical standards - measuring the influence of relatives, friends, and the community - also play an essential role in determining the final decision. Expectations and influences from the social environment can oppose or strengthen graduates' attitudes toward EI. Intentional control is vital in creating confidence and control over starting a business. Entrepreneurship education could provide critical knowledge, skills and financial resources to drive this impact.

2.1.2 Social cognitive theory

Bandura and Walters (1977) demonstrates this theory through the correlation between environmental and individual factors of interest. Human desires, beliefs, emotional tendencies and cognitive abilities are developed and regulated by social influences. Each person might react differently to their environment. This reaction could show through what they say and do. Each person has unique physical characteristics such as age, gender, race, height, weight, physical attraction, different societal role and position. In addition, self-efficacy is the core concept of the theory. Bandura and Walters (1977) defined self-efficacy as a person's confidence in their ability to perform a specific duty in each situation.

In this research context, the social cognitive theory offers a comprehensive perspective on forming graduates' EI. Instead of focusing solely on psychological or social factors, this model combines the impact of both, thereby opening the door to a better understanding of how the environment and personal confidence impact one's decision to start a business. An essential aspect of this theory is the awareness of the role of learning through observation and simulation. Graduates can learn from the experiences of others, including successes and failures, through observing and analyzing real-life situations. The sharing and experience of the startup community can also help graduates build a suitable environment to develop skills and knowledge about entrepreneurship. In particular, the concept of self-efficacy in this theory plays a key role in graduates' confidence in their ability to start a business. This can be strengthened through capacity building, access to helpful information and support from

the community. A supportive and encouraging environment from resources such as teachers, peers and the startup community also plays a vital role in increasing graduate's confidence.

2.2 Proposed research model

This study mainly inherited TPB and the social cognitive theory to examine the impact of entrepreneurship education and personal characteristics on the EI of graduates. The TPB theory is crucial in delineating the critical determinants behind determination and EI. According to this theory, entrepreneurial decisions rely on main factors such as attitude, subjective norm and perceived behavioral control. Attitude is defined by how the entrepreneur positively or negatively evaluates the entrepreneurial activity. Subjective norm involves social pressures, expectations and consequences that the entrepreneur may face when deciding to embark on entrepreneurship. Finally, perceived behavioral control includes the entrepreneur's self-confidence and self-control in the EI. Furthermore, according to the theory of social cognitive, the entrepreneur's confidence in their ability to overcome challenges and achieve business goals is a crucial factor behind EI. The combination of the TPB theory and the social cognitive theory in this study could provide a comprehensive and deep insight into the crucial determinants of graduates' EI.

The proposed research model will include self-efficacy, entrepreneurship education, entrepreneurial family background, motivation and Big Five personality traits as independent variables. Besides, the model also include the mediating variable of perceived social support. Liñán and Chen (2009) have demonstrated that entrepreneurship education not only equips knowledge but also creates the necessary positive encouragement and inspiration to overcome challenges in the entrepreneurial journey. Including personal factors such as family background and the Big Five personality traits could provide a multidimensional view of the influence of social and personality factors on EI. As Kolvereid and Isaksen (2017) pointed out, the family can profoundly influence the founder's determination with its emotional and financial support. Lüthje and Franke (2003) also revealed that personal traits, including emotional stability, extraversion and introversion, can significantly determine determination and EI.

In the model, perceived social support not only functions as a independent variable but also interacts with other variables such as self-efficacy, entrepreneurial family background, motivation, and Big Five personal traits. This model suggests a more extended and complex model than previously studied. Muhammed, Ringim and Kura (2020) indicated that perceived social support had a mediating role on the relationship between entrepreneurship education and EI. Hence, this study is expected to provide a deep and comprehensive

understanding of the relationship between entrepreneurship education, personal factors and EI of graduates, bringing new research value and providing further empirical evidence for this field.

2.3.1 Entrepreneurship education

Entrepreneurship education is an educational effort aimed at enhancing the entrepreneurial aspirations of individuals through the development of understanding, abilities, mindset and related personal characteristics to entrepreneurship (Hussain & Norashidah, 2015). University entrepreneurship education has gained significant recognition in the 21st century as an essential factor impacting students' EI and subsequent behavior (Jena, 2020). Entrepreneurship education plays an indispensable role in shaping graduates' EI. By providing in-depth knowledge of the entrepreneurial process and essential skill development, this education creates a strong foundation for graduates.

Liesch, Welch and Buckley (2011) pointed out that possessing unique skills and knowledge about entrepreneurship can bring long-term benefits to businesses. Furthermore, entrepreneurship education helps create a deep awareness of the benefits and challenges of entrepreneurship. It provides a comprehensive view of the process, from market research to business management, motivating graduates. Krueger and Carsrud (1993) observed that possessing a robust EI could promote the behavior of starting a business. Entrepreneurship education is not only limited to the level of knowledge and creates an encouraging environment for developing and discussing ideas, but also provides opportunities for graduates to meet and connect with people with similar passions and receive encouragement from successful professionals and entrepreneurs. Shinnar, Giacomini and Janssen (2012) showed a crucial role of the social and cultural environment on EI.

Graduates who study master's programs in Economics at Can Tho University could have strong learning motivation and a desire to apply their knowledge to practice. Entrepreneurship education can be especially beneficial, as it provides knowledge about the entrepreneurial process and helps develop practical skills needed in starting and managing a business. The learning and research environment is relatively flexible for graduates and requires creativity. At Can Tho University, the issue of entrepreneurship education for graduates is highlighted through the necessary knowledge and skills that lecturers provide to help graduates have a solid foundation and promote inspiration and confidence in implementing their business ideas. Entrepreneurship education provides a valuable opportunity to combine research knowledge with practical application in business and starting a business. In addition, entrepreneurship education also helps expand the network of

relationships and create opportunities to connect with people with experience in the field of startups. Entrepreneurship education greatly benefits graduates in Economics at Can Tho University. It equips graduates with in-depth knowledge about entrepreneurship, develops management skills and encourages creative thinking. Furthermore, it boosts self-confidence and opens diverse career opportunities. Therefore, the following hypothesis is set:

H₁: Entrepreneurship education positively influence graduates' EI.

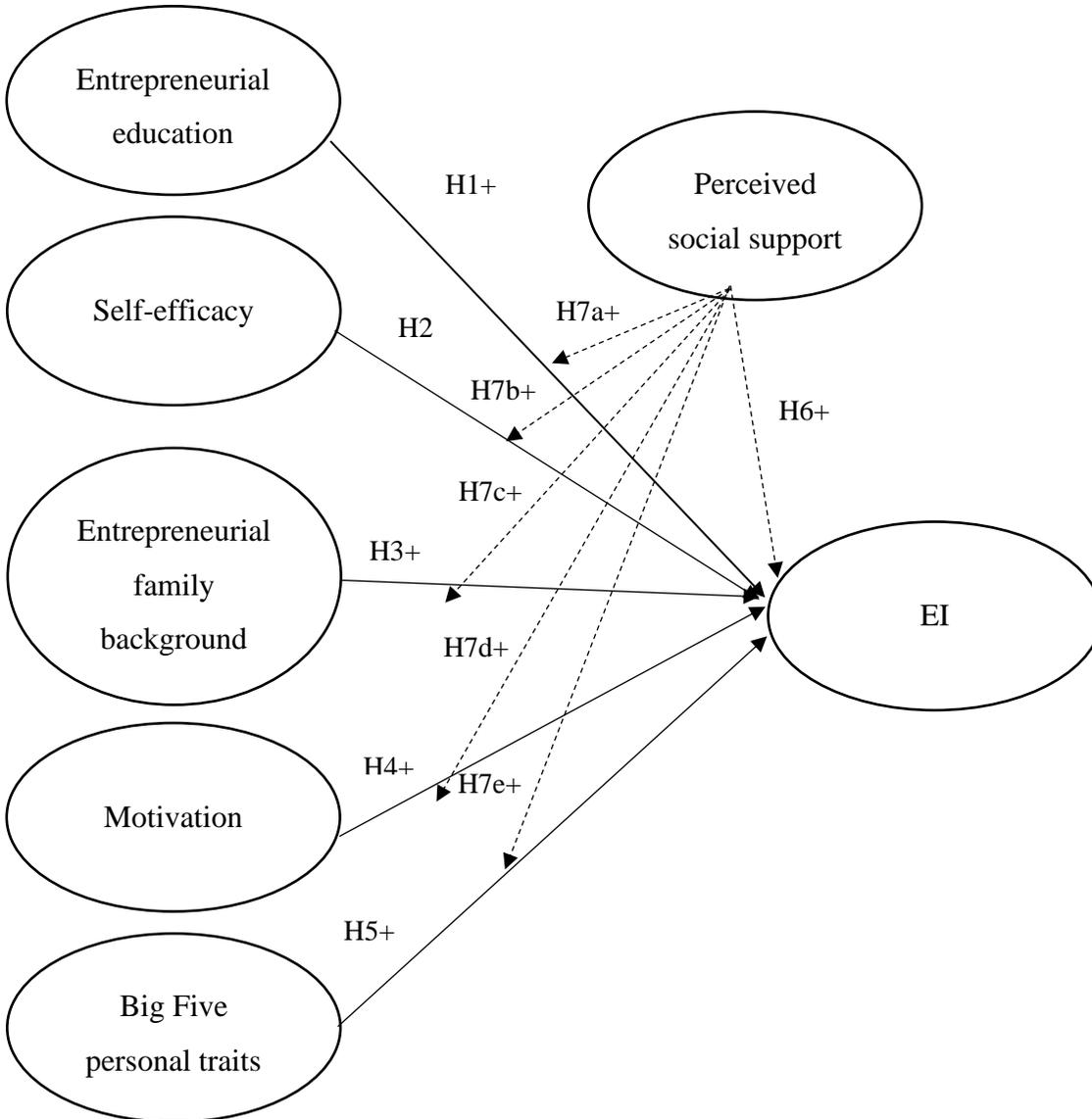


Figure 1. Proposed research model

2.3.2 Self-efficacy

Self-efficacy (SE) is defined as an individual's confidence in his or her ability to perform entrepreneurial roles and tasks successfully (Chen, Greene & Crick, 1998). SE is found to have a positive effect on EI in some previous studies. Social cognitive theory in Bandura and Walters (1977) supposes that high SE guides behavior, shapes courses of action and increases persistence in the face of obstacles. Indeed, self-efficacy is significantly related to college students' career decisions, regardless of gender (Lent & Hackett, 1987). Furthermore, highly productive individuals enjoy challenging activities and demonstrate more remarkable persistence in pursuing those activities. People with high self-efficacy are not afraid of failure because they are willing to fail to learn from experience rather than suffer personal failure (Bandura & Walters, 1977). Therefore, individuals who perceive high entrepreneurial autonomy have a higher intention to start their own business and engage in such behaviors over the long term.

Regarding graduates, self-efficacy could represent the degree to which graduates believe in their abilities to perform entrepreneurship-related activities. High SE helps them believe in their ability to identify and overcome challenges during the startup process. Udayanan (2019) analyzed that Omani graduates with high levels of SE tend to have stronger EI. Hence, graduates with higher self-efficacy could be more proactive in starting a business, helping them develop business plans, build a network of relationships or solve financial problems. In addition to influencing intentions, self-efficacy also dramatically impacts patience and perseverance during the startup process. Chen, Fu, Wang, Tsai and Su (2018) also find that self-efficacy positively affects the ability to handle difficulties and challenges in the entrepreneurial process. Besides, this study indicates that the individual with a high level of SE often has the spirit of never giving up and always finds a way to overcome obstacles. As a result, the following hypothesis is proposed:

H₂: Self-efficacy positively influence graduates' EI.

2.3.3 Entrepreneurial family background

According to Bae, Qian, Miao and Fiet (2014), entrepreneurial family background pertains to those whose parents or other relatives are self-employed. Numerous studies on students' aspirations for entrepreneurship show that students from families with a business background are impacted by their unique family context, which influences their aspirations and future career choices (Laspita, Breugst, Heblich & Patzelt, 2012). This platform also increases their propensity to convert these intents into commercial actions. The effect of parental experience

on children's entrepreneurial aspirations and conduct has been shown by some empirical research (Van Auken, Stephens, Fry & Silva, 2006).

Researchers have demonstrated the exposure of entrepreneurs at an early age, such as having self-employed parents, is an essential predictor of self-employment (Krueger & Carsrud, 1993). When parents are business owners, they could influence their children's career decisions by providing social capital such as contacts with suppliers, business partners and customers. Therefore, family background has a vital role in forming the EI of graduates. This is a group of people with a deep history of education and knowledge acquisition, which the family tradition of entrepreneurship can strongly influence. Families with a strong entrepreneurial tradition or background can support and encourage the development of graduates' entrepreneurial careers. As emphasized by Liesch et al. (2011), having a family background related to the business can provide an essential competitive advantage for the growth of business, especially in the cases of global companies. Graduates with EI can gain an advantage over their peers in moving from intention to action by tapping into their parents' networks when launching a new project (Laspita et al., 2012).

Besides, children of self-employed parents have a unique opportunity to observe and learn from successful adults in the field from an early age (Chlosta, Patzelt, Klein & Dormann, 2012). This can inspire these children to pursue an entrepreneurial career. These foundations directly influence the thinking and attitudes of graduates toward entrepreneurship through positive thoughts or the guidance their families teach them in facing risks and challenges.

Family support for graduates' decision to participate in entrepreneurship is also essential. Family can provide financial resources, a network of relationships or a sense of mental security, helping graduates become more confident in the entrepreneurial process. Parents often help their children by giving them money and opportunities for learning and career development (Lentz & Laband, 1990). Ajzen (2002) explains that the success perception of a person is strongly influenced by the resources and opportunities available, so access to additional resources in family provision can give entrepreneurial practitioners a greater sense of behavioral control. Positive influence from family helps graduates develop a deep entrepreneurial mindset and creates a spirit of courage in participating in the business field. Additionally, family support provides encouragement and a valuable network of relationships, helping them overcome challenges and create new opportunities. A family background in entrepreneurship is not only a source of inspiration but also a vital factor

contributing to success and growth of graduates in entrepreneurship. Therefore, the next hypothesis is set as follows:

H₃: Entrepreneurial family background positively influence graduates' EI.

2.3.4 Motivation

Motivation is the process that activates and motivates entrepreneurs to exert higher levels of effort to achieve their business goals (Adeel, Daniel & Botelho, 2023). Kautonen, Van Gelderen and Fink (2015) emphasizes that the motivation could determine a person's determination and patience in facing challenges and difficulties. Motivation, which can be passion and desire to succeed in entrepreneurship, is considered the driving force within each graduate. Motivation in entrepreneurship is not simply the desire to make big profits but also a deep passion for creating value and positively influencing the community or society. It often stems from a strong belief in an idea and a desire to realize its mission. According to Krueger and Carsrud (1993), entrepreneurial motivation could shape EI and motivate specific actions related to starting a business.

In Can Tho University's context, motivation could help graduates promote their startup decisions, shape their goals and focus on a specific direction. Motivation will be a source of enthusiasm to promote learning and the development of necessary knowledge and skills. Motivation will help graduates overcome barriers and difficulties in their entrepreneurial path and create solid expectations and confidence in their success. When harnessed effectively, motivation becomes a powerful force that accelerates progress and shapes the entrepreneurial future of graduates. Therefore, motivation is expected to play a vital role in forming EI and positively influence the development and success of graduates in this field. So, the next hypothesis is set as follows:

H₄: Motivation positively influence graduates' EI.

2.3.5 Big Five personality traits

The Big Five personality traits, also known as "The Five Factor model", define the five most important factors in assessing a person's personality including openness, conscientiousness, confidence, introversion, extraversion and neuroticism. These factors profoundly impact graduates' decisions and intentions to launch a business. Confidence is one of the most critical factors for graduates in starting a business. People with high confidence levels tend to be patient, meticulous and have good time management, which is extremely important in building and growing a business (Zhao & Seibert, 2006).

Regarding graduates, those with a high level of extraversion could tend to meet new people, which is consistent with their willingness to communicate and create social relationships, creating a solid foundation for building business networks. Meanwhile, graduates with agreeableness characteristics can build relationships of consensus and respect, helping graduates maintain a harmonious and friendly business environment. Similarly, graduates with a conscientiousness degree play an essential role in thorough preparation and management, creating a solid foundation for business plan development and resource management. Low levels of neuroticism are often associated with a better ability to cope with stress and overcome difficult situations, creating patience and persistence in the entrepreneurial process. Meanwhile, a higher openness to experience promotes curiosity and a willingness to absorb new knowledge, facilitating flexibility and creativity in facing new challenges and opportunities.

H₅: Big Five personality traits positively influence graduates' EI.

2.3.6 Perceived social support

Perceived social support is a concept in social psychology and social psychology. This refers to an individual's perception of the level of support and care he feel. Lai (2015) found that perceived social support from family and friends had a positive impact on EI based on a sample of college students. They explain that when individuals feel supported, they are more likely to face and overcome the risks and uncertainties of entrepreneurship. Similarly, Prabhu and Shekhar (2017) showed that social support affects both EI and the actual entrepreneurial process. This support gives individuals the courage to implement their business ideas and overcome initial difficulties. Although each study had different contexts and samples, the correlation between social support and EI was emphasized.

Regarding graduates at the School of Economics, with their in-depth knowledge and high level of education, graduates have built a network of relationships in the academic environment, including lecturers, researchers and fellow graduates. This network and the market knowledge they have accumulated create a solid foundation for the startup. In this case, perceived social support becomes necessary, helping graduates gain more motivation and confidence and access necessary resources, such as financial or professional advice, from family, friends and other support person. Hence, the sixth hypothesis is set out:

H₆: Perceived social support positively influences graduates' EI.

In addition, perceived social support is expected to have a significant mediating role in forming EI (Muhammed et al., 2020). This support can increase self-efficacy and motivation in entrepreneurship, providing helpful guidance and context for graduates. At the same time, it also helps reduce pressure and stress from the challenges of starting a business, making it easier to pursue goals. This perceived social support also influences graduates' decisions and actions, balancing the influence of other factors such as family background and personal five personality traits. Thus, in the unique context of graduates, perceived social support not only supports but also can change how other factors influence the formation and development process of EI. Family can influence attitudes and opinions about business, while personality traits such as openness, responsibility, emotionality, sociability and dedication can influence approaches and solutions in their business. Support from family, friends, teachers and professional networks can facilitate the development of business ideas, help graduates feel more confident and motivate them to pursue their ideas to start a business. Hence, the following hypotheses are proposed:

H_{7a}: Perceived social support has a positive mediating effect on the relationship between entrepreneurship education and the EI of graduates.

H_{7b}: Perceived social support has a positive mediating effect on the relationship between self-efficacy and EI of graduates.

H_{7c}: Perceived social support has a positive mediating effect on the relationship between entrepreneurial family background and EI of graduates.

H_{7d}: Perceived social support has a positive mediating effect on the relationship between motivation and EI of graduates.

H_{7e}: Perceived social support has a positive mediating effect on the relationship between Big Five personality traits and EI of graduates.

The factors in the research model include observed variables measured by a 5-point Likert scale (from completely disagree to completely agree). These variables are combined presenting in the result to save space.

3. Research method

3.1 Data collecting method

The study uses primary data by a survey of graduates at the School of Economics, Can Tho University with the convenience sampling method. The survey subjects were graduates who

had not started a business. According to Hair, Anderson, Tatham and Black (1998), the expected size should be five times the number of observed variables. The research model has 32 observed variables, so the sample size should be at least 160 graduates.

3.2 Data analysis method

First, Cronbach's Alpha was performed to test the reliability of the research scale. Later, Exploratory Factors Analysis (EFA) is used. Finally, Ordinary least squares (OLS) regression is applied. The first estimated model is set as follows:

$$EI = \beta_0 + \beta_1 EE + \beta_2 SE + \beta_3 FB + \beta_4 MT + \beta_5 BT + \beta_6 PS + \varepsilon \quad (1)$$

Where EI represents for the entrepreneurial intention of graduates. Independent variables consist of entrepreneurship education (EE), self-efficacy (SE), family background (FB), motivation (MT), Big Five personality traits (BT) and perceived social support (PS).

Then, the second model with the moderating role of PS is estimated:

$$EI = \beta_0 + \beta_1 EE + \beta_2 SE + \beta_3 FB + \beta_4 MT + \beta_5 BT + \beta_6 PS + \beta_7 PS \times EE + \beta_8 PS \times SE + \beta_9 PS \times FB + \beta_{10} PS \times MT + \beta_{11} PS \times BT + \varepsilon \quad (2)$$

4. Results and discussion

4.1 Sample description

After completing the survey, 182 questionnaires are valid for data analysis. There are 64 male graduates (accounting for 35.2%) and 118 female graduate's counterparts (accounting for 64.8%) in the sample. The number of single graduates was 117, accounting for 64.3% of the sample. The most graduates in the sample studies Business Administration (70 graduates, accounting for 38.5%). There are 66 graduates of Economics Management major (accounting for 36.3%), and 33 graduates of Finance and Banking major (accounting for 18.1%). The left are graduates studying Economics and Agricultural Economics. The income of the graduate ranges from 3.5 million VND to 50 million VND. Their average income is 11,97 million VND.

There are 55 graduates who are employed and have experience in their professional fields for less than three years (accounting for 33.95%), followed by those with 5 to less than ten years of experience (28.4%) and those with over ten years of experience (21.60%). Finally, graduates with 3 to less than five years of experience have the lowest proportion (16.05%).

There are nearly a half of graduates in the sample participated in courses/sharing sessions on entrepreneurship (accounting for 49.5%). Of which, there are 59.17% graduates taking courses of entrepreneurship at universities, while 18.33% participated in off-campus training

centers and 15% opted for participating in business clubs and the remaining being self-improvement.

4.3 Results of scale reliability test and EFA

When conducting Cronbach's Alpha for first times, three are three observed variables excluded since their corrected-item over total correlation being less than 0.3 (SE1 of self-efficacy factor, BT1 and BT2 of the Big Five personal trait factor). The second-time results of Cronbach's Alpha shows that the measurement scale gains the reliability for subsequent step of EFA.

4.3.1 Results of EFA for independent factor

The EFA results extracted seven factors from the 24 initially observed variables. The total variance extracted is 65.331%. However, the observed variable PS2 (Perceived social support factor) is eliminated since it has a loading coefficient less than 0.5. Using EFA for the second times, six factors are extracted among 23 observed variables. There is no change of observed variables among factors compared to the initially proposed factors. KMO coefficient of the analysis is 0.793, which is suitable for factor analysis. Sig-value of Bartlett's test is equal to 0.000, which shows that the variables correlate on an overall scale. The total extracted variance of EFA is 62.054%.

Table 1. Rotated matrix of independent variable factors

No.	Code	Observed variables	Factor					
			1	2	3	4	5	6
Entrepreneurship education								
1	EE3	At the University, I was encouraged to develop innovative business ideas	0.759					
2	EE4	I was encouraged to participate in the "Student Startup" contest at the University	0.741					
3	EE2	At the University, I was provided with the necessary business skills	0.724					
4	EE5	At University, I was encouraged to participate in "Starting a Business" training classes	0.714					
5	EE1	At the University, I was provided with the necessary business knowledge	0.612					
Motivation								
6	MT2	I want to have a high position in society		0.738				

No.	Code	Observed variables	Factor						
			1	2	3	4	5	6	
7	MT3	I want to use my imagination		0.681					
8	MT4	I want to improve my experience		0.633					
9	MT1	I want financial independence		0.623					
10	MT5	I want to achieve my goal		0.605					
Entrepreneurial family background									
11	FB2	My family wants me to continue their business career			0.786				
12	FB4	I learned a lot from my family's experiences			0.735				
13	FB3	I want to do business like my parents			0.696				
14	FB1	I have a parent who is an entrepreneur			0.694				
Self-efficacy									
15	SE3	I can write a clear and complete business plan				0.848			
16	SE4	I can make a clear plan development of the business				0.807			
17	SE2	I can apply creative ideas to inspire partners				0.658			
Big Five personality traits									
18	BT4	Openness					0.788		
19	BT5	Conscientiousness					0.706		
20	BT3	Neuroticism					0.694		
Perceived social support									
21	PS3	Perceived social support has a significant impact on business idea development							0.798
22	PS4	Perceived social support plays a vital role in promoting business growth							0.755
23	PS1	I received perceived social support to enhance my business idea							0.521
Total variance extracted of 6 factors (%)									62.054
KMO coefficient									0.793
Sig.									0.000

Source: Analytical results from a research sample of 182 graduates at Can Tho University School of Economics (2023)

4.3.2 Results of EFA for the dependent variable

The EFA results show that the EI factor is extracted with five observed variables as initial proposition. The extracted variance of this factor is 65.994%.

Table 2: Results of EFA analysis of dependent variable

No	Code	Observed variables	Factor loading
1	EI3	I am determined to create a business in the future	0.883
2	EI2	My goal is to become an entrepreneur	0.843
3	EI5	I intend to start a business within five years of graduating	0.808
4	EI1	I am willing to do everything to become an entrepreneur	0.760
5	EI4	I intend to start a business someday	0.760
Total variance extracted of 1 factor (%)			65.994
KMO coefficient			0.855
Sig.			0.000

Source: Analytical results from a research sample of 182 graduates at Can Tho University School of Economics (2023)

4.4 Results of OLS regression

The results of model 1 in Table 2 show that there are five out of six factors having positive coefficients at 5% significance level including (1) entrepreneurship education, (2) self-efficacy, (3) entrepreneurial family background, (4) motivation and (5) perceived social support. Besides, when including the interacting terms, the results of model 2 in Table 2 only show the mediating role of perceived social support on the relationship between entrepreneurial family background and the EI.

The value of R^2 of model 1 means that all independent variables used in the model could explain 44.1% the variation of the EI. In addition, the increase in adjusted R^2 of model 2 indicates that the consideration of the mediating role of perceived social support increases the model's explanatory power.

Table 3. Results of regression analysis

Variables	Code	Model 1	Model 2
		Coefficient	Coefficient
Entrepreneurship education	EE	0.281***	0.330***
Self-efficacy	SE	0.378***	0.388***
Entrepreneurial family background	FB	0.288***	0.256***
Motivation	MT	0.304***	0.282***
Big Five personality traits	BT	0.069	0.085
Perceived social support	PS	0.197***	0.183**
Perceived social support x Entrepreneurship education	PS x EE		0.081
Perceived social support x Self-efficacy	PS x SE		-0.055
Perceived social support x Entrepreneurial family background	PS x FB		-0.151**
Perceived social support x Motivation	PS x MT		-0.002
Perceived social support x Big Five personality traits	PS x BT		0.029
	R²	0.441	0.472
	Adjusted R²	0.422	0.438

Source: Analytical results from a sample of 182 graduates at School of Economics – CTU (2023).

Note: ***, ** and * denotes for the significance level of 1%, 5% and 10%, respectively.

Self-efficacy factor has the most significant influence on the EI of graduates in this study. The coefficient of 0.378 indicates that the self-efficacy of graduates is positively associated with their EI. Hence, self-efficacy can be considered as the factor to promote personally EI. This result is consistent with Wang, Wang and Chen (2018) that self-efficacy plays the most significant influence on EI.

Entrepreneurship education is also found to positively impact the EI of graduates with a beta coefficient of 0.330. It could be said that graduates experiencing the entrepreneurship education could have a higher EI. Many startup courses and competitions have been organized at Can Tho University, such as the “Startup and Innovation” training course (from 2017) or the most successful startup competition “Hult Prize” (held for the first time at the end of 2020). As a result, graduates could have access to a wealth of entrepreneurial knowledge at the school. They could grasp basic concepts and observe startup entrepreneurs whose premise leads to the EI. This result is consistent with previous studies such as Phan and Chau (2019).

Motivation factor has the coefficient of 0.208, so the hypothesis H₄ is supported. In other words, the other factors remain unchanged, the EI among graduates will increase if their motivation is better. Hence, motivation in entrepreneurship could play an essential part of a person's decision to start a business. According to Kautonen et al. (2015), motivation could help determine a person's determination and patience in facing challenges and difficulties. This result supports those of Phan and Nguyen (2015).

The result of model 1 in Table 2 also show that entrepreneurial family background positively influences the EI of graduates with coefficient of 0.256. This finding implies that having a good family background could positively affect graduates' EI. This result is consistent with Shirokova, Osiyevskyy and Bogatyreva (2016).

The evidence in Table 2 also supports hypothesis H₆ that the better the social support, the higher the EI for graduates. When graduates receive support from others, both physically and mentally, their EI could be higher. In the startup context, every challenge and risk become more feasible when an individual feels he or she is not alone. Perceived social support could help reduce the fear of failure and create the motivation as well as the confidence to continue pursuing goals. Many people's social network is like a safety net, helping them cope with uncertainty and overcome difficulties. Especially in the early stages of a startup, when resources and information may be limited, access to a robust social network can provide new opportunities, financial support or advice from entrepreneurs. This result is consistent with those of Acuña-Duran, Pradenas-Wilson, Oyanedel and Jalon-Gardella (2021).

The coefficient of Big Five personality trait factor is not significant. Hence, the evidence in this study do not verify the effect of Big Five personality characteristics on the EI of graduates. Yangailo and Qutieshat (2022) also show that the Big Five personality traits do not influence the EI among employed people in Pakistan.

In model 2, there is only a significant mediating effect of perceived social support (PS) on the relationship between entrepreneurial family background (FB) and EI. The coefficient of PS x FB is -0.151 with a p-value of 0.022. This implies that perceived social support increases could reduce the positive influence of entrepreneurial family background (FB) on EI. This result suggests that in contexts where one receives much social support, the influence of having a family background in business may not be as significant as expected for the formation of EI. This result may be because they feel that they already have the resources and support they need or may need to focus more on expanding or starting a new business. After all, they are satisfied with the current level of support.

5. Conclusion and implications

This study examined the influence of entrepreneurship education and personal characteristics on EI based on the surveyed data on 182 graduates of School of Economics - Can Tho University. The main analyzed methods are EFA and OLS regression. Most respondents in the sample are still single. The average income of graduate is nearly 12 million VND. Most respondents have years of experience ranging from 5 to less than ten years. The employment fields of graduates are also diverse. Half of the respondents have participated in training courses on entrepreneurship. Graduates who participate in these courses have improved their knowledge and skills and learned about the difficulties they face when starting a business.

From theoretical models, previous studies and the context of the research, a research model has been built with five independent variables, one moderator variable and one dependent variable. From the initial 32 observed variables, after testing the reliability by the coefficient of Cronbach's Alpha, there are remaining 29 observed variables that ensure the reliability to proceed with the following steps. Six independent factors were extracted when using EFA, including entrepreneurship education, self-efficacy, entrepreneurial family background, motivation, big five personality traits and perceived social support.

Regression results show the evidence of five factors which affects graduates' EI. Of which, self-efficacy and motivation have the highest positive impact on EI, next is the entrepreneurial family background, perceived social support and entrepreneurship education. In addition, the results only show the negative mediating role of perceived social support on the relationship between entrepreneurial family background and EI. This study demonstrates that in contexts where one receives much social support, the influence of having a family background in business may not be as significant as expected for the formation of EI.

EI is a reasonably new concept and has generally received little attention in Can Tho City and Vietnam. Factors such as entrepreneurship education, self-efficacy, entrepreneurial family background, motivation and perceived social support all positively influence EI in different contexts worldwide in some previous research. However, only some studies examine EI from an individual perspective, as well as studies that have not simultaneously studied many factors about the personal characteristics of research subjects, especially graduates. Therefore, in terms of academics, the research has contributed to introducing a scale to measure EI from the perspective of individuals, specifically graduates.

Based on the previous results, several managerial implications to promote the EI of graduates have been proposed. Accordingly, from the results of the positive influence of the factors such as entrepreneurship education, self-efficacy, entrepreneurial family background, motivation and perceived social support on the EI, the university should focus on developing educational programs and extracurricular activities to strengthen confidence and skills necessary for entrepreneurship. Courses in business planning, risk management and communication skills can help graduates build a solid foundation for their business ideas. In addition, organizing events such as seminars and workshops with the participation of successful entrepreneurs and experts in the field of startups will create opportunities for graduates to learn from experience and expand their network of connections.

In addition, the university should focus on building a positive learning environment where creativity and freedom of expression of ideas are encouraged. Setting up startup or business incubation programs can help graduates implement their ideas in a real-life environment, increasing their confidence in their abilities. Moreover, the university should also cooperate with organizations outside to provide graduates with practical opportunities such as internships, mentorship and network building, helping them expand their understanding and experience in the business world beyond their families. This research helps graduates develop skills and knowledge and creates a strong and diverse support environment, helping them develop solid and sustainable EI. This research will ultimately facilitate the growth of independent entrepreneurship within and beyond the family community.

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