

Subjective norms and entrepreneurial intention: A moderated-serial mediation model

Van Hieu Pham¹ , Thi Kim Chi Nguyen² ,
Thi Bich Lien Nguyen³ , Thi Thanh Thuy Tran⁴ ,
Thi Viet Nga Nguyen⁵ 

Abstract

PURPOSE: This study aims to clarify the effect mechanism of subjective norms on entrepreneurial intention. The results of how subjective norms contribute to forming start-up intention are inconsistent and unclear, which is notable in previous research. By integrating the theory of planned behavior and the theory of self-efficacy, we investigate whether entrepreneurial self-efficacy and attitude toward entrepreneurship serially mediate the relationship between subjective norms and intention to start a business. In addition, this study examines the moderate role of entrepreneurial education on the serial indirect effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and attitude toward entrepreneurship. **METHODOLOGY:** This study utilized a sample of 958 master's students in Vietnam to investigate a moderated-serial mediation model of subjective norms on entrepreneurial intention. Confirmatory factor analysis (CFA) was carried out to check the reliability and validity of the scales. Then, the SPSS PROCESS macro developed by Hayes was employed to test the research model. Specifically, Model 6 was used to examine the serial indirect effect of subjective norms on start-up intention and Model 84 was implemented to investigate the moderate effect of entrepreneurial

1 Van Hieu Pham, Ph.D., Hanoi University of Business and Technology, No. 29A, Lane 124, Vinh Tuy Street, Vinh Tuy Ward, Hai Ba Trung District, Hanoi, Vietnam; e-mail: hieukinh836@gmail.com (ORCID: <https://orcid.org/0000-0003-2354-4441>).

2 Thi Kim Chi Nguyen (Corresponding author), Ph.D, Hanoi University of Business and Technology, No. 29A, Lane 124, Vinh Tuy Street, Vinh Tuy Ward, Hai Ba Trung District, Hanoi, Vietnam; e-mail: nguyenchihubt@gmail.com (ORCID: <https://orcid.org/0000-0001-5065-7682>).

3 Thi Bich Lien Nguyen, Ph.D, Vinh University, 182 Le Duan Street, Vinh City, Nghe An Province, Vietnam; e-mail: liennguyen190882@gmail.com (ORCID: <https://orcid.org/0000-0003-1299-9512>).

4 Thi Thanh Thuy Tran, Ph.D, Vinh University, 182 Le Duan Street, Vinh City, Nghe An Province, Vietnam; e-mail: tranthanhthuydhv@gmail.com (ORCID: <https://orcid.org/0000-0003-1894-1549>).

5 Thi Viet Nga Nguyen, Ph.D, Academy Of Finance, 58 Le Van Hien Street, Dong Ngac Ward, Bac Tu Liem District, Hanoi, Vietnam; e-mail: ngahvtc1605@gmail.com (ORCID: <https://orcid.org/0000-0002-2917-3023>).

Received 5 July 2022; Revised 7 November 2022, 16 January 2023; Accepted 18 January 2023.

This is an open access paper under the CC BY license (<https://creativecommons.org/licenses/by/4.0/legalcode>).

education. **FINDINGS:** The results of this study found that entrepreneurial self-efficacy and entrepreneurial attitude significantly mediate subjective norms' effect on entrepreneurial intention. Especially, the results reveal that the serial mediation effect of entrepreneurial self-efficacy and attitude toward entrepreneurship was significant and entrepreneurial self-efficacy and attitude toward entrepreneurship played a fully mediating role in the relationship between subjective norms and start-up intention. In addition, this study found that the serial mediation effect of subjective norms on start-up intention via entrepreneurial self-efficacy and entrepreneurial attitude was negatively moderated by entrepreneurial education. **IMPLICATIONS:** The results of this study further clarify the relationship between subjective norms and entrepreneurial intention and the role of entrepreneurial education, therefore, contributing to narrowing the notable gap between this relationship. Besides, our study provides several implications for governments and policymakers to promote the intention to start a business. The finding of our study indicates that subjective norms are an important factor in promoting entrepreneurial intention. Therefore, policymakers should take some actions to promote entrepreneurial culture, such as strengthening propaganda activities to promote the image of successful entrepreneurs, praising businesses and entrepreneurs who contribute to society, and giving evidence of their contribution to the development of the country. Promoting an entrepreneurial culture may increase peer group pressure on potential entrepreneurs, thus enhancing the intention to start a business. **ORIGINALITY AND VALUE:** This study expects to contribute to a better understanding of the effect mechanism of subjective norms on entrepreneurial intention and explain the role of entrepreneurial education in this relationship. This study explores the mediating role of entrepreneurial self-efficacy and entrepreneurial attitude in the relationship between subjective norms and the intention to start a business. Additionally, this study demonstrates that entrepreneurial education weakens the serial mediation model of subjective norms on the intention to start a business.

Keywords: subjective norm, entrepreneurial self-efficacy, attitude toward entrepreneurship, entrepreneurial intention, entrepreneurial education, the theory of planned behavior, the theory of self-efficacy, moderated-serial mediation model

INTRODUCTION

Entrepreneurship is becoming a worldwide phenomenon because of its positive contribution to global economic development. In industrialized countries, entrepreneurship has long been seen as a way to promote innovation and technological development, enhance competitive ability and create jobs (Guerrero, Rialp, & Urbano, 2006). Meanwhile, in less advanced countries, entrepreneurship has been seen as a means to promote economic development and solve pressing economic and social issues (Ozaralli & Rivenburgh, 2016). To understand why one chooses to start a business, it is necessary to understand business intentions and the factors that influence

them. This argument is derived from Ajzen's (1991) view that intention is the starting point of behavior. Therefore, scholars have developed many theories to explore the determinants of individuals' entrepreneurial intentions (Maheshwari, Kha, & Arokiasamy, 2022). Although there are many theories determining entrepreneurial intention, TPB theory is more widely applied because it is a theory with high reliability and a good predictor of intention to perform actual behavior over many different areas.

According to the theory of planned behavior (TPB) of Ajzen (1991), the three antecedents of behavioral intention are attitude toward behavior, subjective norms and perceived behavior control. Subjective norms are seen as an important antecedent to predicting intention in the TPB model of Ajzen (1991). The relationship between subjective norms with intention has been proven in various field of research. However, the results about the effect of subjective norms on the intention to start a business are inconsistent. Some studies suggested that subjective norms were significantly correlated with business intention (Ahmed, Chandran, Klobas, Liñán, & Kokkalis, 2020; Maresch, Harms, Kailer, & Wimmer-Wurm, 2016), while other studies suggested that this relationship was not statistically significant (Otache, Umar, Audu, & Onalo, 2019; Tung, Hung, Phuong, Loan, & Chong, 2020). This raises a question: why are there inconsistent results regarding the association between subjective norms and entrepreneurial intention? Scholars have suggested that when the effect between the independent variable and the dependent variable is inconsistent, there may be a mediator variable in this relationship. In addition, Liñán and Chen (2009) also argue that the weak predictive power of subjective norms could be explained by the indirect effect of subjective norms on entrepreneurial intention. Therefore, it is necessary to research the effect mechanism of subjective norms on the intention to start a business for a better understanding of the phenomenon (Duong et al., 2022; Liñán & Chen, 2009).

From the above discussion, while current literature suggests that there is a positive linkage between subjective norms and entrepreneurial intention (Ahmed et al., 2020; Maresch et al., 2016), the mechanism of this linkage has not been fully understood. Thus, this study aims to clarify the effect mechanism of subjective norms on entrepreneurial intention based on two fundamental theories, namely the theory of planned behavior (Ajzen, 1991) and the theory of self-efficacy (Bandura, 1997), which are the most used in explaining and predicting behavior (Lortie & Castogiovanni, 2015). The main idea of the theory of self-efficacy is that an individual's intention and behavior are significantly affected by their belief in successfully performing a task (Bandura, 1997). This theory helps to give a better understanding of the nexus among beliefs, attitudes, intentions, and behavior. Meanwhile, the theory

of planned behavior suggested that an individual's intention has a strong association with attitudes toward behavior, while behavioral attitude may be correlated with normative beliefs (known as subjective norms) because they may be based in part on the same information (Ajzen & Fishbein, 2005). Based on these views, this study argues that in addition to the direct effect of subjective norms on entrepreneurial intention, subjective norms indirectly influence start-up intention through entrepreneurial self-efficacy and attitude toward entrepreneurship. We present entrepreneurial self-efficacy and attitude toward entrepreneurship as first and second mediators in the relationship between subjective norms and intention to start a business. We argue that subjective norms may be sequentially associated with self-efficacy and later positively affect attitude toward entrepreneurship, which, in turn, directly impact entrepreneurial intention.

Besides that, recent studies have demonstrated that entrepreneurial education is important in predicting entrepreneurial intention (Ndofirepi, 2020; Shah, Amjed, & Jaboo, 2020). However, the finding on the influence of entrepreneurial education on the intention to start a business is still inconsistent and unclear (Hassan, Anwar, & Saleem, 2021; Otache, Edopkolor, & Kadiri, 2022). Furthermore, scholars argue that entrepreneurial education can have moderate effects on the relationship between predictors and entrepreneurial intention (Entrialgo & Iglesias, 2016; Shah et al., 2020). So, in this study, we examine the moderating role of entrepreneurial education in the relationship between subjective norms, entrepreneurial self-efficacy, attitude toward entrepreneurship, and start-up intention. We expect to contribute to a better understanding of the effect mechanism of subjective norms on entrepreneurial intention and explain the reason for the inconsistent results about this relationship seen in previous studies.

In the past decade, Vietnam has not only become an emerging economy in Southeast Asia but it is also seen as a country with a significant growth rate of entrepreneurship. Business startups are increasing rapidly and have been identified as an important driver of Vietnam's economic development in recent years (Hoang, Le, Tran, & Du, 2020; Nguyen, Do, Vu, Dang, & Nguyen, 2019). However, the percentage of people who intend to become entrepreneurs in Vietnam just reached 25% in 2017 and ranked 19th out of 54 economies (GEM 2017/2018). Therefore, it is meaningful to explore entrepreneurial intention in Vietnam. The research results could provide sufficient suggestions for policymakers to promote entrepreneurship in Vietnam.

In sum, we employed a sample of 958 master's students in Vietnam to investigate a moderated-serial mediation model of subjective norms on entrepreneurial intention. The SPSS PROCESS macro developed by Hayes (2012) was employed to test the research model. The remainder of

this article includes four parts. First, the literature review and hypotheses' development are presented. Second, research methods are explained. Then, the research results are presented and discussed. Finally, the implications of the findings are highlighted, and the limitations of the study and further research directions are given.

LITERATURE REVIEW

Subjective norms and entrepreneurial intention

In the entrepreneurial literature, entrepreneurial intention is defined as a person's self-recognition that they intend to set up a new business and consciously plan to do so in the future (Thompson, 2009). Intention can help explain why a person plans to start a business before they look for a business opportunity (Krueger, Reilly, & Carsrud, 2000; Y.-S. Wang, Lin, Yeh, Li, & Li, 2016) and is a prerequisite factor for predicting entrepreneurial behavior (Duong, 2021; Yousaf, Ali, Ahmed, Usman, & Sameer, 2021). Meanwhile, subjective norms refer to a person's perception of the opinions of social reference groups (such as family and friends) about whether or not they should start a business (Ajzen, 1991). Based on the argument of the TPB model, scholars posit that the more positive the opinion of the reference group about entrepreneurship, the more support the person receives from this reference group and thus the higher intention to start a business. The linkage between subjective norms and entrepreneurial intention has been examined in many empirical studies (Duong, 2021; Sun, Lo, Liang, & Wong, 2017). However, there is inconsistency in the finding regarding this linkage. One group of studies illustrated that subjective norms positively influence entrepreneurial intention (Ahmed et al., 2020; Maresch et al., 2016; Shah et al., 2020).

Another group of studies reported that subjective norms have no impact, not even a negative impact on entrepreneurial intention (Duong, 2021; Tung et al., 2020). In addition, several researchers suggested that the nexus between subjective norms and intention to start a business is not direct, but some intervening factors mediate or moderate this nexus (Liñán & Chen, 2009). For example, some studies have explored the moderate role of gender, educational fields, country, creativity, and regional conditions in the linkage between subjective norms and entrepreneurial intention (Duong, 2021; González-Serrano, Valantine, Hervás, Pérez-Campos, & Moreno, 2018; Kibler, 2013; Pauline & T, 2019; Shi, Yuan, Bell, & Wang, 2020). Similarly, some studies reported the mediate roles of perceived behavior control, and attitude toward behavior (Doanh & Bernat, 2019; Duong, 2021)). The findings of these studies

imply that the relationship between subjective norms and entrepreneurial intention is not just a simple direct relationship. Therefore, this study introduces entrepreneurial self-efficacy and attitude toward entrepreneurship as mediators, and entrepreneurial education as a moderator in the association between subjective norms and entrepreneurial intention (Figure 1).

Mediating effect of entrepreneurial self-efficacy

In the theory of self-efficacy (Bandura, 1997), self-efficacy is seen as a key construct in regulating psychological well-being, physical health, psychological problems and career choices (Liguori, Winkler, Vanevenhoven, Winkel, & James, 2019). Bandura (1997) suggested that individual behaviors are regulated by their cognition, and that self-efficacy, a cognitive factor, is a central motivator for a person to maintain their self-regulation. In the entrepreneurship field, more and more research is emphasizing the role of self-efficacy, which is known as the term entrepreneurial self-efficacy. Entrepreneurial self-efficacy is defined by scholars from many different perspectives (Tsai, Chang, & Peng, 2016). And in this study, we inherited the definition that entrepreneurial self-efficacy is an entrepreneur's confidence in being able to complete specific tasks (Baum, Locke, & Smith, 2001). Several previous studies confirmed that self-efficacy has a positive relation to social support, when a person perceived support from their family or friends, they will have higher self-efficacy (Adler-Constantinescu, Beșu, & Negovan, 2013). Otherwise, subjective norms reflect a person's perception of social reference groups' opinions about whether they should implement a behavior (Ajzen, 1991). The more positive these opinions are, means the more support they receive from the social group and, therefore, the higher self-efficacy they have. In addition, Santos and Liguori (2020) argued that subjective norms help to form how a person perceived themselves, influence their belief about self-efficacy, and consequently affect the likelihood of shaping specific intentions. Doanh and Bernat (2019) also suggested that subjective norms have a positive influence on self-efficacy. In other words, an individual's entrepreneurial self-efficacy may be enhanced if they receive approval about entrepreneurship from important persons and vice versa.

More than that, entrepreneurial self-efficacy has a strong relationship with the intention to start a business. Bandura (1982) suggested that an individual's intentions are significantly influenced by beliefs about their ability to perform this particular task effectively. A person's beliefs can influence their intentions and behavior (Ajzen, 1991). A person with high confidence in his/her ability to perform a particular task may have a high intention to achieve this particular achievement (Bandura, 1982). In other words, a person

with high confidence in starting a business will have a higher intention to start a business. The relationship between entrepreneurial self-efficacy and entrepreneurial intention has been supported in many previous studies (Ahmed et al., 2020; Doanh & Bernat, 2019; Tsai et al., 2016). Researchers have shown that when a person has high self-efficacy, their intention to engage in entrepreneurship is higher (Duong & Le, 2021; Maheshwari & Kha, 2022; Wardana et al., 2020).

Given a strong correlation of entrepreneurial self-efficacy to both subjective norms and entrepreneurial intention as mentioned above, entrepreneurial self-efficacy may play a mediator role in the relationship between subjective norms and entrepreneurial intention. Thus, we posit that:

H1: Entrepreneurial self-efficacy plays a mediating role between subjective norms and entrepreneurial intention.

Mediating effect of attitude toward behavior

Attitude toward entrepreneurship reflects the degree to which a person thinks positively or negatively about being an entrepreneur (Autio, Keeley, Klofsten, Parker, & Hay, 2010). Becoming an entrepreneur or not is an important decision because it affects later careers, so individuals often consult with important people around them. When people around think that starting a business is the right path and will help generate more income than earning a salary, it helps build individuals' belief that the results of starting a business are positive, so their attitude towards entrepreneurial behavior will be positive. Several previous studies have demonstrated the positive effect of subjective norms on attitude toward entrepreneurship (Duong, 2021; Entrialgo & Iglesias, 2016; Farooq et al., 2018).

In addition, a positive attitude towards entrepreneurial behavior can lead to a stronger intention to start a business. Based on the theory of planned behavior (Ajzen, 1991), many studies have confirmed that a positive attitude toward entrepreneurial activities can significantly contribute to the formation of an individual's intention to become an entrepreneur (Ashraf, Alam, & Alexa, 2021; Duong, 2021; Zaremohzzabieh et al., 2019). When an individual believes that the result of becoming an entrepreneur is positive, they will have a favourable entrepreneurial attitude, and therefore their entrepreneurial intention will be more enhanced.

Given a strong correlation of attitude toward entrepreneurship to both subjective norms and entrepreneurial intention as mentioned above, attitude toward entrepreneurship may play a mediator role in the relationship between subjective norms and entrepreneurial intention. In other words, subjective

norms first positively influence attitude toward entrepreneurship, which in turn, positively impacts entrepreneurial intention. Thus, we posit that:

H2: Attitude toward entrepreneurship plays a mediating role between subjective norms and entrepreneurial intention.

Serial mediating role of entrepreneurial self-efficacy and attitude toward entrepreneurship

Entrepreneurial self-efficacy is known as an individual's belief in his/her capability to become a successful entrepreneur (Tsai et al., 2016). People will value themselves positively when they believe they could deal with business activities (Ajzen, 1991; Kolvereid, 1996). The theory of reasoned actions proposed that an individual's attitude toward a behavior is the result of their beliefs (Fishbein & Ajzen, 1975). Meanwhile, entrepreneurial self-efficacy is a knowledge-based belief and, therefore, entrepreneurial self-efficacy can lead to a positive attitude towards creating new businesses. When a person has high confidence in their entrepreneurial ability, their belief about establishing a successful venture will be developed, and this belief then promotes a favorable attitude toward entrepreneurship. In addition, Ajzen (1991) argued that the belief about the ability to perform a particular behavior could influence attitude toward that behavior and its outcomes, affecting the intention to accomplish that behavior. This argument implies that attitude toward behavior may mediate the nexus of entrepreneurial self-efficacy and entrepreneurial intention. The mediation role of attitude toward entrepreneurship in the relationship between entrepreneurial self-efficacy and entrepreneurial intention was demonstrated in previous studies (Setiawan, Kasim, & Ardyan, 2022; Tsai et al., 2016; Wardana et al., 2020).

From these correlations, it seems that when an individual perceives support from reference groups, they may increase their entrepreneurial self-efficacy, which in turn leads to a positive attitude toward entrepreneurship and thereby enhance the intention to start a business. In other words, entrepreneurial self-efficacy and attitude toward entrepreneurship may co-play a serial mediating role in the relationship between subjective norms and entrepreneurial intention. Thus, we posit that:

H3: Entrepreneurial self-efficacy and attitude towards entrepreneurship co-play a serial mediating role in the relationship between subjective norms and entrepreneurial intention.

Entrepreneurial education as moderator

Entrepreneurial education refers to education programs that aim to provide students with essential knowledge and skills to establish a business (Otache et al., 2022). The role of entrepreneurial education in forming start-up intention is a hot topic that attracts more attention from scholars and policy-makers (Hoang et al., 2020). However, while previous studies often focus on examining the direct or indirect effects of entrepreneurial education, only a few studies explore the moderate role of this factor (Shahab, Chengang, Arbizu, & Haider, 2019).

Several prior studies have proved that the direct effect of subjective norms on entrepreneurial intention was moderated by entrepreneurial education (Maresch et al., 2016; Shah et al., 2020). Shah et al. (2020) also found that entrepreneurial education weakens the direct effect of subjective norms on start-up intention. When a person receives entrepreneurial education, they would have the ability to understand entrepreneurship clearly and, therefore, they might be less reliant on their social reference groups. Likewise, this study argues that entrepreneurial education negatively moderates the direct effect of subjective norms on entrepreneurial self-efficacy and entrepreneurial attitude and the indirect effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and entrepreneurial attitude. Indeed, entrepreneurial education equips students with the necessary knowledge and skills that can enhance their entrepreneurial self-efficacy (Hassan et al., 2021; Hoang et al., 2020). In addition, entrepreneurial education for students also creates a positive awareness of entrepreneurial careers by convincing them of the values and benefits of starting a business (Yousaf et al., 2021). Therefore, students' entrepreneurial self-efficacy and attitude might be less reliant on the opinions of reference groups. In other words, the positive direct effects of subjective norms on entrepreneurial self-efficacy and attitude, and the positive indirect effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and entrepreneurial attitude, may be weaker in individuals who receive entrepreneurial education.

Based on the arguments above, we posit that:

H4: Entrepreneurial education negatively moderates the effect of subjective norms on entrepreneurial self-efficacy.

H5: Entrepreneurial education negatively moderates the effect of subjective norms on attitude toward entrepreneurship.

H6: Entrepreneurial education negatively moderates the indirect effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy.

H7: Entrepreneurial education negatively moderates the indirect effect of subjective norms on entrepreneurial intention via attitude toward entrepreneurship.

H8: Entrepreneurial education negatively moderates the indirect effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and attitude toward entrepreneurship.

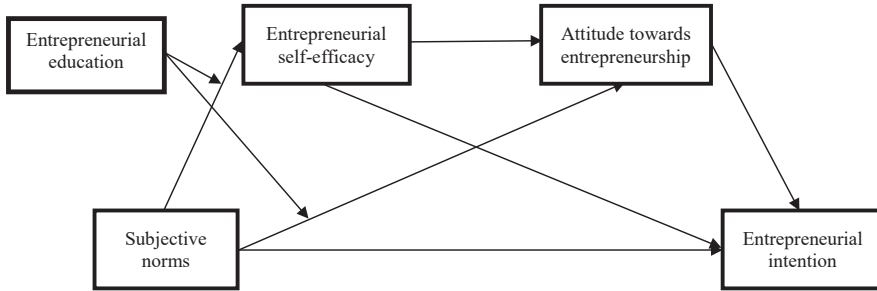


Figure 1. Conceptual model

Methodology

Sample and procedures

To test the proposed hypotheses, this article uses a sample including 958 responses. The questionnaires were distributed to master's students in Vietnam by the convenient sampling method. The authors selected five universities in the North, three universities in the Central area and three universities in the South to conduct the survey. In the process of collecting research data, the authors tried to balance the proportion of students between different universities and disciplines to ensure the representativeness and reliability of the research samples. To achieve the expected sample size, the authors surveyed over a period of nearly two months (from January to February 2022). A total of 1265 survey questionnaires were distributed to master's students through online surveys, and the number of returned questionnaires was 1038 (reaching 81.9%). After removing invalid answer sheets because survey participants did not fully answer or answer without thinking, the final research sample includes 958 survey questionnaires. Among them, the ratio of male/female students is relatively balanced, with 560 male students (accounting for 58.5%) and 398 female students (accounting for 41.5%). The majority of master's students participating in the survey are from 24 to 28 years old (accounting for 42.3%). In terms of fields of study, 58.5% of students surveyed

studied economics and business administration, while engineering and other disciplines accounted for 41.5%. In addition, almost half of the participants in the survey had parents or siblings working in business, the other half had parents and siblings working in other jobs (see Table 1).

Table 1. Demographic characteristics of sample

Variable	Categories	n	%
Gender	Male	560	58.5
	Female	398	41.5
Age	22-23	151	15.8
	24-28	405	42.3
	Over 28	402	42.0
Fields of study	Economics and business management	560	58.5
	Engineering and others	398	41.5
Family background	Yes	472	49.3
	No	486	50.7

Measures

Entrepreneurial intention was measured with a six-item scale adopted from Liñán and Chen (2009). Subjective norms were assessed by using a three-item scale adopted from Liñán and Chen (2009). A five-item scale from Liñán (2008) and Tsai et al. (2016) was adopted to measure entrepreneurial self-efficacy. Attitude toward entrepreneurship was measured with a five-item scale adopted from Liñán and Chen (2009). And entrepreneurial education was assessed by using a four-item scale adopted from Walter and Block (2016). Each item is rated on a seven-point Likert scale (1 = totally disagree, 7 = totally agree).

Before developing the survey, all scales are translated from English to Vietnamese, and then re-translated back into English to ensure that the meaning of the scales is not changed. These two translations are performed independently by two experienced English experts in the fields of Economics and Business Administration.

Data analysis

In the current study, the research data was analyzed using AMOS 24.0 and SPSS 24.0. First, we adopted SPSS to perform descriptive and correlational analyses. Pearson’s correlation was employed to examine the association among all the variables. Subsequently, confirmatory factor analysis (CFA) was carried out to check the reliability and validity of the scales. Then, the

SPSS PROCESS macro developed by Hayes (2012) was employed to test the research model. Specifically, PROCESS macro with Model 6 (Hayes, 2018) was used to examine the serial indirect effect of subjective norms on start-up intention and PROCESS macro with Model 84 (Hayes, 2018) was implemented to investigate the moderate effect of entrepreneurial education. In addition, demographic variables such as gender (0 = male, 1 = female), age (0 = 22-23, 1 = 24-28, 2 = over 28), the field of study (0 = Economics and business management, 1 = Engineering and others) and family business background (0 = No, 1 = Yes) were added to the research model as control variables to ensure the reliability of results.

RESULTS

Descriptive statistics

The mean and standard deviations of all variables used in the research model are shown in Table 2. This table also illustrates the correlation between all variables. Subjective norms were positively and significantly related to entrepreneurial intention ($r = 0.697$, $p < 0.01$), attitude toward entrepreneurship ($r = 0.812$, $p < 0.01$), entrepreneurial self-efficacy ($r = 0.729$, $p < 0.01$), and entrepreneurial education ($r = 0.623$, $p < 0.01$). Likewise, entrepreneurial self-efficacy was positively associated with entrepreneurial intention ($r = 0.739$, $p < 0.01$), attitude toward entrepreneurship ($r = 0.763$, $p < 0.01$), and entrepreneurial education ($r = 0.488$, $p < 0.01$). Attitude toward entrepreneurship was positively correlated to entrepreneurial intention ($r = 0.815$, $p < 0.01$), and entrepreneurial education ($r = 0.636$, $p < 0.01$); and entrepreneurial education was positively associated with entrepreneurial intention ($r = 0.569$, $p < 0.01$). In addition, the skewness and kurtosis values of all variables range from -1 to 1. Therefore, the departures from the normal distribution are not substantial (Kline, 2016).

Table 2. The results of descriptive statistics and Pearson-correlations between main variables

	Mean	SD	EI	ATE	ESE	SN	EE
Entrepreneurial intention (EI)	4.7029	1.4987	-				
Attitude toward behavior (ATE)	4.8846	1.4074	0.815**	-			
Entrepreneurial self-efficacy (ESE)	4.4647	1.4544	0.739**	0.763**	-		
Subjective norm (SN)	4.9850	1.4210	0.697**	0.812**	0.729**	-	
Entrepreneurial education (EE)	5.3387	1.34071	0.569**	0.636**	0.488**	0.623**	-

Note: N=958, ** Correlation is significant at the 0.01 level (2-tailed).

Measurement model

To examine the fit of the measurement model, we performed a confirmatory factor analysis. The χ^2 statistics show a not good result ($\chi^2=1188.032$, $p=0.000$; $\chi^2/df=5.500$), however, χ^2 statistics do not reflect exactly the fit of the model when the sample size is large. Therefore, this measure has usually been ignored in many studies (Kenny, Kaniskan, & McCoach, 2015). Considering the other indicators, the measurement model has a good fit with the data: CFI = 0.964, SRMR = 0.035, and RMSEA = 0.068 (Hu & Bentler, 1999).

Besides, the CFA results also show the standardized regression weights (λ_i). All observed variables have standardized regression weights greater than 0.8, which confirms the unidirectionality and convergence validity of the scales used in the proposed model. Therefore, all observed variables are suitable and do not need to be removed (Hair, Black, Babin, Anderson, & Tatham, 2010). The observed variable with the smallest standardized regression weight is ATE1 (0.832) and the one with the highest regression weight is SN2 (0.939).

In addition, the composite reliability (CR), average variance extracted (AVE) and maximum shared variance (MSV) were examined to assess the reliability, convergence validity, and discriminability validity of the scale. The CR for each factor is greater than 0.9, thus all scales present good reliability (Hair et al., 2010). Besides, the convergent validity of five factors is also ensured due to their AVE being higher than 0.5. Furthermore, the MSV of all factors is lower than their AVE, therefore, all factors meet the requirements of convergent validity (see Table 3).

Table 3. Cronbach’s alpha and composite reliability and discriminant validity index

Code	Items	Cronbach’s Alpha	Factor loading	CR	AVE	MSV
Entrepreneurial Intention - EI						
E11	I am ready to do anything to be an entrepreneur		0.854			
E12	My professional goal is to become an entrepreneur		0.898			
E13	I will make every effort to start and run my own firm	0.941	0.895	0.959	0.794	0.740
E14	I am determined to create a firm in the future		0.907			
E15	I have very seriously thought of starting a firm		0.895			
E16	I have a firm intention to start a firm someday		0.895			

Code	Items	Cronbach's Alpha	Factor loading	CR	AVE	MSV
Attitude Toward Entrepreneurship - ATE						
ATE1	Being an entrepreneur implies more advantages than disadvantages to me		0.832			
ATE2	A career as an entrepreneur is attractive for me		0.919			
ATE3	If I had the opportunity and resources, I'd like to start a firm	0.944	0.847	0.945	0.776	0.740
ATE4	Being an entrepreneur would entail great satisfactions for me		0.912			
ATE5	Among various options, I would rather be an entrepreneur		0.891			
Entrepreneurial Self-Efficacy - ESE						
ESE1	I show great aptitude for creativity and innovation		0.837			
ESE2	I show great aptitude for leadership and problem-solving		0.847			
ESE3	I can develop and maintain favorable relationships with potential investors	0.935	0.839	0.929	0.724	0.690
ESE4	I can see new market opportunities for new products and services		0.862			
ESE5	I can develop a working environment that encourages people to try out something new		0.868			
Subjective Norms - SN						
SN1	My family members will approve my actions		0.866			
SN2	My family members will encourage me to start my business	0.936	0.939	0.938	0.834	0.713
SN3	If necessary, my family members will loan me money to help me start my own business.		0.932			
				0.947	0.847	0.431
Entrepreneurial Education - EE						
EE1	My school education helped me develop my sense of initiative – a sort of entrepreneurial attitude		0.882			
EE2	My school education helped me to better understand the role of entrepreneurs in society	0.946	0.932			
EE3	My school education made me interested to become an entrepreneur		0.938			
EE4	My school education gave me the skills and know-how that enable me to run a business		0.928			

Results of mediate effects

This study investigates subjective norms as a predictor, entrepreneurial self-efficacy and attitude toward entrepreneurship as mediators, and intention to form a venture as an outcome variable.

Table 4 reported the results of serial mediation analyses. The results show that subjective norms positively affect entrepreneurial self-efficacy (B

= 0.7161; $p < 0.001$) and attitude toward entrepreneurship ($B = 0.5396$; $p < 0.001$). Similarly, entrepreneurial self-efficacy has significant positive impacts on entrepreneurial attitude ($B = 0.3512$; $p < 0.001$) and entrepreneurial intention ($B = 0.2630$; $p < 0.001$); and attitude toward entrepreneurship positively influences entrepreneurial intention ($B = 0.6284$; $p < 0.001$). The results indicated that subjective norms had a significant and indirect impact on the intention to form a venture via entrepreneurial self-efficacy ($B_{SN-ESE-EI} = 0.1883$; 95%CI: 0.1408 to 0.2380) and entrepreneurial attitude ($B_{SN-ATE-EI} = 0.3391$; 95%CI: 0.2752 to 0.4099). Interestingly, subjective norms were found to have an indirect effect on start-up intention via a serial mediating of entrepreneurial self-efficacy and attitude toward behavior ($B_{SN-ESE-ATE-EI} = 0.1580$; 95%CI: 0.1215, 0.1985). Consequently, H1, H2, and H3 were supported by data. Furthermore, the total effect of subjective norms on the intention to start a business was significant ($B = 0.6999$; 95%CI: 0.6518, 0.7480). However, when entrepreneurial self-efficacy and attitude toward entrepreneurship were exerted in the research model as mediators, the direct effect of subjective norms on start-up intention was not significant (95%CI: -0.0509 to 0.0797). This result implies that entrepreneurial self-efficacy and attitude toward entrepreneurship play significant fully mediating roles in the nexus between subjective norms and entrepreneurial intention.

Table 4. The results of mediating effects

Hypotheses	Paths	B	SE	CI(95%)		
				Lower	Upper	
<i>Direct effect</i>						
	SN -> ESE	0.7161***	0.0228	0.6714	0.7608	
	SN -> ATE	0.5396***	0.0248	0.4910	0.5883	
	SN -> EI	0.0144	0.0333	-0.0509	0.0797	
	ESE -> ATE	0.3512***	0.0247	0.3027	0.3996	
	ESE -> EI	0.2630***	0.0298	0.2045	0.3215	
	ATE -> EI	0.6284***	0.0356	0.5586	0.6982	
<i>Indirect effect</i>						
H1(+)	SN -> ESE -> EI	0.1883	0.0246	0.1408	0.2380	<i>Supported</i>
H2(+)	SN -> ATE -> EI	0.3391	0.0346	0.2752	0.4099	<i>Supported</i>
H3(+)	SN -> ESE -> ATE -> EI	0.1580	0.0199	0.1215	0.1985	<i>Supported</i>
<i>Total effects</i>						
	SN -> EI	0.6999***	0.0245	0.6518	0.7480	
<i>Covariates</i>						
	Gender	-0.0848	0.0720	-0.2262	0.0566	

Hypotheses	Paths	B	SE	CI(95%)	
				Lower	Upper
	Age	-0.2397***	0.0495	-0.3368	-0.1425
	Major	-0.0397	0.0718	-0.1807	0.1013
	Family business background	-0.2559***	0.0703	-0.3938	-0.1180

Note: N=958, ; ***p < 0.001.

Results of moderate effects

After testing the serial mediation model, entrepreneurial education was added as a moderator in the relationship between subjective norms and entrepreneurial self-efficacy. The results of moderated-mediation effects were presented in Table 5.

The results illustrated that entrepreneurial education negatively moderated the effect of subjective norms on entrepreneurial self-efficacy (B = -0.0264; 95%CI: -0.0516 to -0.0011), therefore, H4 was supported by data. However, contrasting with our expectation, the moderate effect of entrepreneurial education on the relationship between subjective norms and entrepreneurial attitude was not significant (95%CI: -0.0143 to -0.0228), thus, H5 was not supported.

In terms of moderated-mediation effects, the results showed that the indirect effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy was negatively moderated by entrepreneurial education (B = -0.0069; 95%CI: -0.0139; -0.0003), therefore, H6 was supported. Conversely, the indirect effect of subjective norms on start-up intention through entrepreneurial attitude was not moderated by entrepreneurial education (95%CI: -0.0114; 0.0165), thus, H7 was not supported. Interestingly, the moderated-mediation analyses illustrated that entrepreneurial education negatively moderated the serial mediation effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and start-up attitude (B = -0.0056; 95%CI: -0.0117; -0.0002), therefore, H8 was supported.

Moreover, the conditional indirect effects showed that the indirect effects of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and the serial indirect effects via entrepreneurial self-efficacy and attitude toward entrepreneurship were both positive and significant at three levels of entrepreneurial education. These results provide support for mediating roles of entrepreneurial self-efficacy and entrepreneurial attitude in the relationship between subjective norms and start-up intention.

Table 5. The results of moderate effects

Hypotheses	Paths	B	SE	CI(95%)		Results
				Lower	Upper	
<i>SN -> ESE</i>						
H4(-)	EE x SN	-0.0264	0.0129	-0.0516	-0.0011	Supported
<i>SN -> ATE</i>						
H5(-)	SN x ATE	0.0042	0.0095	-0.0143	0.0228	Not supported
<i>SN -> ESE -> EI</i>						
	EE 1 SD below the mean	0.1872	0.0246	0.1388	0.2360	
	EE at the mean	0.1779	0.0239	0.1319	0.2268	
	EE 1 SD above the mean	0.1686	0.0241	0.1231	0.2178	
H6(-)	<i>Index of moderated mediation</i>	-0.0069	0.0035	-0.0139	-0.0003	Supported
<i>SN -> ATE -> EI</i>						
	EE 1 SD below the mean	0.2670	0.0326	0.2050	0.3334	
	EE at the mean	0.2706	0.0322	0.2091	0.3356	
	EE 1 SD above the mean	0.2742	0.0345	0.2081	0.3432	
H7(-)	<i>Index of moderated mediation</i>	0.0027	0.0071	-0.0114	0.0165	Not supported
<i>SN -> ESE -> ATE -> EI</i>						
	EE 1 SD below the mean	0.1516	0.0196	0.1159	0.1921	
	EE at the mean	0.1441	0.0183	0.1103	0.1815	
	EE 1 SD above the mean	0.1365	0.0179	0.1035	0.1727	
H8(-)	<i>Index of moderated-serial mediation</i>	-0.0056	0.0029	-0.0117	-0.0002	Supported

DISCUSSION

According to the theory of planned behavior (TPB) of Ajzen (1991), subjective norms are seen as an important antecedent to predicting intention and, consequently, predicting behavior. The association between subjective norms and intention has been proven in various fields of research. However, the result of how subjective norms contribute to forming start-up intention is still inconsistent (Doan et al., 2021; Zdolsek, Draksler, & Sirec, 2021). Some studies suggested that subjective norms were significantly correlated with business intention (Ahmed et al., 2020; Maresch et al., 2016), while other

studies suggested that this relationship was not statistically significant (Otache et al., 2019; Tung et al., 2020). This implies that the mechanism of the linkage between subjective norms and entrepreneurial intention has not been fully understood. Therefore, this study aims to explore the indirect influence of subjective norms on entrepreneurial intention. By combining the theory of planned behavior (Ajzen, 1991) and the theory of self-efficacy (Bandura, 1997), we present entrepreneurial self-efficacy and attitude toward entrepreneurship as serial mediators in the relationship between subjective norms and intention to start a business. We argue that subjective norms may be sequentially associated with self-efficacy and later positively affect attitude toward entrepreneurship, which, in turn, directly impact entrepreneurial intention. Additionally, this study also examines the moderate role of entrepreneurial education in the effect of subjective norms on self-efficacy, attitude toward entrepreneurship, and start-up intention.

First, in support of H1, the results of this study found that entrepreneurial self-efficacy significantly mediates the effect of subjective norms on the intention to start a business. This finding emphasizes the important role of subjective norms in directly promoting entrepreneurial self-efficacy and indirectly enhancing entrepreneurial intention. Although the nexus between subjective norms and entrepreneurial self-efficacy has not been researched much yet, current literature argues that self-efficacy is positively influenced by social support (S. Wang et al., 2020). Meanwhile, subjective norms are also known as social pressure/support and be an external motivation (Doanh & Bernat, 2019; Tsai et al., 2016). Therefore, when perceiving positive support from salient people, an individual could have a higher entrepreneurial self-efficacy, and then have a higher intention to start a business.

Second, as indicated by the finding, attitude toward entrepreneurship mediates the association between subjective norms and entrepreneurial intention, lending to support H2. A person with positive subjective norms will be more likely to have a higher intention to form a venture through enhancing a favorable entrepreneurial attitude, which is consistence with prior studies (Amofah & Saladrignes, 2022; Doanh & Bernat, 2019; Duong, 2021). In other words, when an individual perceived agreement about entrepreneurship from salient people, they would shape a positive entrepreneurial attitude, and then increase their intention to form a venture.

Third, the finding of the study revealed that entrepreneurial self-efficacy and attitude toward entrepreneurship mediated the effect of subjective norms on start-up intention through a serial mediation pathway, consistent with H3. The results show that subjective norms impact the intention to form a business through first entrepreneurial self-efficacy and then attitude toward entrepreneurship. Furthermore, when entrepreneurial self-efficacy

and entrepreneurial attitude were discussed as mediators in the research model, the direct effect of subjective norms on entrepreneurial intention was not significant, which demonstrated that the linkage between subjective norms and start-up intention was fully mediated by these two factors. This serial mediation model, thus, gives an in-depth explanation of the effect mechanism of subjective norms on entrepreneurial intention.

Finally, this study indicated that the serial mediation effect of subjective norms on start-up intention via entrepreneurial self-efficacy and entrepreneurial attitude was significantly moderated by entrepreneurial education. Specifically, entrepreneurial education negatively moderates the relationship between subjective norms and entrepreneurial self-efficacy. This means that when individuals engage in entrepreneurial education, the role of opinions from reference groups in building their entrepreneurial self-efficacy will be less important. Because entrepreneurial education equips them with the necessary start-up knowledge and skills, they become more confident in their entrepreneurial abilities (Nowiński, Haddoud, Lančarič, Egerová, & Czeplédi, 2017; Wardana et al., 2020). Similarly, the results also reveal that the serial mediation effect of subjective norms on entrepreneurial intention via entrepreneurial self-efficacy and entrepreneurial attitude was negatively moderated by entrepreneurial education. It means entrepreneurial education weakens the indirect positive effect of subjective norms on start-up intention via entrepreneurial self-efficacy and entrepreneurial attitude in serial.

CONCLUSION

The current study makes contributions to entrepreneurship knowledge at two levels. First, by integrating the theory of planned behavior (Ajzen, 1991) and the theory of self-efficacy (Bandura, 1997), this study contributes to narrowing the notable gap between subjective norms and entrepreneurial intention. In this study, we introduced entrepreneurial self-efficacy and attitude toward entrepreneurship as first and second mediators in the nexus of subjective norms and entrepreneurial intention. The results illustrate that entrepreneurial self-efficacy and attitude toward entrepreneurship played a full serial mediation role in the relationship between subjective norms and start-up intention. Second, this study also demonstrates that the indirect effects of subjective norms on entrepreneurial intention were negatively moderated by entrepreneurial education. Therefore, this study has further clarified the relationship between subjective norms and entrepreneurial intention.

Besides the theoretical contributions, the results of this study also provide implications for educators and policymakers. The finding of our study indicates that subjective norms are an important factor in promoting entrepreneurial intention. The opinions of the reference group will influence an individual's self-efficacy and entrepreneurial attitude, which in turn affects their intention to start a business. Moreover, although entrepreneurial education weakens the indirect and serial indirect effects of subjective norms on entrepreneurial intention, these effects are still both significant and positive at all levels of entrepreneurial education. This finding supports the important role of subjective norms in forming start-up intention. Therefore, policymakers should take some actions to promote entrepreneurial culture, such as strengthening propaganda activities to promote the image of successful entrepreneurs, praising businesses and entrepreneurs who contribute to society, and giving evidence of their contribution to the development of the country. Promoting an entrepreneurial culture may increase peer group pressure on potential entrepreneurs, thus enhancing the intention to start a business. In addition, educators should also consider the role of reference groups in forming students' entrepreneurial intentions. It is very helpful to get family, friends and other important persons in the entrepreneurial learning process, such as becoming guest speakers in class or attending the business project of students. This can make students aware of the potential approval or disapproval towards entrepreneurship of reference groups, thereby promoting or deferring the students' entrepreneurial intentions.

Similar to other studies, our study also has some limitations. The surveyed objective in this study only included master's students. Therefore, further studies could collect data from other objectives like high school students or workers to enhance the generalization of results. In addition, prior relevant studies suggested that subjective norms could be categorised into two types, named injunctive norms and descriptive norms (Manning, 2009; Shahab et al., 2019; Tsai et al., 2016). These two types of norms have different impacts on an individual's intention (Tsai et al., 2016). Thus, this study could be extended by investigating the influence of different norms on entrepreneurial intention through self-efficacy and attitude toward entrepreneurship. Furthermore, this study only borrows entrepreneurial education as a moderator in the relationship between subjective norms, entrepreneurial self-efficacy, attitude toward entrepreneurship, and start-up intention. Therefore, further studies could examine the moderate role of different factors in the indirect relationship between subjective norms and start-up intention.

References

- Adler-Constantinescu, C., Beșu, E.-C., & Negovan, V. (2013). Perceived social support and perceived self-efficacy during adolescence. *Procedia - Social and Behavioral Sciences*, 78, 275-279. <https://doi.org/10.1016/j.sbspro.2013.04.294>
- Ahmed, T., Chandran, V. G. R., Klobas, J. E., Liñán, F., & Kokkalis, P. (2020). Entrepreneurship education programmes: How learning, inspiration and resources affect intentions for new venture creation in a developing economy. *The International Journal of Management Education*, 18(1), 100327. <https://doi.org/10.1016/j.ijme.2019.100327>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In B. T. J. In D. Albarracín, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). New York: Lawrence Erlbaum Associates Publishers.
- Amofah, K., & Saladrignes, R. (2022). Impact of attitude towards entrepreneurship education and role models on entrepreneurial intention. *Journal of Innovation and Entrepreneurship*, 11(1). <https://doi.org/10.1186/s13731-022-00197-5>
- Ashraf, M. A., Alam, M. M. D., & Alexa, L. (2021). Making decision with an alternative mind-set: Predicting entrepreneurial intention toward f-commerce in a cross-country context. *Journal of Retailing and Consumer Services*, 60. <https://doi.org/10.1016/j.jretconser.2021.102475>
- Autio, E., H. Keeley, R., Klofsten, M., G. C. Parker, G., & Hay, M. (2010). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, 2(2), 145-160. <https://doi.org/10.1080/14632440110094632>
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147. <https://doi.org/10.1037/0003-066X.37.2.122>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman & Co.
- Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, 44(2), 292-303. <https://doi.org/10.5465/3069456>
- Doan, X. H., Le, T. T., Duong, C. D., Nguyen, T. P. L., Tran, D. D., & Tran, T. P. H. (2021). Impulsivity traits and the rational cognitive process of entrepreneurship: empirical evidence from Vietnam. *Asia-Pacific Journal of Business Administration*, 13(4), 497-519. <https://doi.org/10.1108/apjba-05-2021-0200>
- Doanh, D. C., & Bernat, T. (2019). Entrepreneurial self-efficacy and intention among Vietnamese students: A meta-analytic path analysis based on the theory of planned behavior. *Procedia Computer Science*, 159, 2447-2460. <https://doi.org/10.1016/j.procs.2019.09.420>

- Duong, C. D. (2021). Exploring the link between entrepreneurship education and entrepreneurial intentions: The moderating role of educational fields. *Education + Training*. <https://doi.org/10.1108/et-05-2021-0173>
- Duong, C. D., Ha, N. T., Le, T. L., Nguyen, T. L. P., Nguyen, T. H. T., & Pham, T. V. (2022). Moderating effects of Covid-19-related psychological distress on the cognitive process of entrepreneurship among higher education students in Vietnam. *Higher Education, Skills and Work-Based Learning*. <https://doi.org/10.1108/heswbl-01-2022-0006>
- Duong, C. D., & Le, T. L. (2021). ADHD symptoms and entrepreneurial intention among Vietnamese college students: An empirical study. *Journal of Entrepreneurship in Emerging Economies*, 14(3), 495-522. <https://doi.org/10.1108/jee-02-2021-0049>
- Entrialgo, M., & Iglesias, V. (2016). The moderating role of entrepreneurship education on the antecedents of entrepreneurial intention. *International Entrepreneurship and Management Journal*, 12(4), 1209-1232. <https://doi.org/10.1007/s11365-016-0389-4>
- Farooq, M. S., Salam, M., ur Rehman, S., Fayolle, A., Jaafar, N., & Ayupp, K. (2018). Impact of support from social network on entrepreneurial intention of fresh business graduates. *Education + Training*, 60(4), 335-353. <https://doi.org/10.1108/et-06-2017-0092>
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- González-Serrano, M. H., Valantine, I., Hervás, J. C., Pérez-Campos, C., & Moreno, F. C. (2018). Sports university education and entrepreneurial intentions. *Education + Training*, 60(5), 389-405. <https://doi.org/10.1108/et-12-2017-0205>
- Guerrero, M., Rialp, J., & Urbano, D. (2006). The impact of desirability and feasibility on entrepreneurial intentions: A structural equation model. *International Entrepreneurship and Management Journal*, 4(1), 35-50. <https://doi.org/10.1007/s11365-006-0032-x>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis*. New Jersey: Pearson Prentice Hall.
- Hassan, A., Anwar, I., & Saleem, I. (2021). Individual entrepreneurial orientation, entrepreneurship education and entrepreneurial intention: The mediating role of entrepreneurial motivations. *Industry and Higher Education*, 35(4), 403-418.
- Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*. Kansas: University of Kansas.
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.
- Hoang, G., Le, T. T. T., Tran, A. K. T., & Du, T. (2020). Entrepreneurship education and entrepreneurial intentions of university students in Vietnam: The

- mediating roles of self-efficacy and learning orientation. *Education + Training*, 63(1), 115-133. <https://doi.org/10.1108/et-05-2020-0142>
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research*, 44(3), 486-507.
- Kibler, E. (2013). Formation of entrepreneurial intentions in a regional context. *Entrepreneurship & Regional Development*, 25(3-4), 293-323. <https://doi.org/10.1080/08985626.2012.721008>
- Kline, R. B. (2016). *Principles and practice of structural equation modeling*. New York, NY: Guilford Publications.
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice*, 21(1), 47-58. <https://doi.org/10.1177/104225879602100104>
- Krueger, J. N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5-6), 411-432. [https://doi.org/10.1016/S0883-9026\(98\)00033-0](https://doi.org/10.1016/S0883-9026(98)00033-0)
- Liguori, E. W., Winkler, C., Vanevenhoven, J., Winkel, D., & James, M. (2019). Entrepreneurship as a career choice: Intentions, attitudes, and outcome expectations. *Journal of Small Business & Entrepreneurship*, 32(4), 311-331. <https://doi.org/10.1080/08276331.2019.1600857>
- Liñán, F. (2008). Skill and value perceptions: How do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal*, 4, 257-272. <https://doi.org/10.1007/s11365-008-0093-0>
- Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, 33(3), 593-617. <https://doi.org/10.1111/j.1540-6520.2009.00318.x>
- Lortie, J., & Castogiovanni, G. (2015). The theory of planned behavior in entrepreneurship research: What we know and future directions. *International Entrepreneurship and Management Journal*, 11(4), 935-957. <https://doi.org/10.1007/s11365-015-0358-3>
- Maheshwari, G., & Kha, K. L. (2022). Investigating the relationship between educational support and entrepreneurial intention in Vietnam: The mediating role of entrepreneurial self-efficacy in the theory of planned behavior. *The International Journal of Management Education*, 20(2). <https://doi.org/10.1016/j.ijme.2021.100553>
- Maheshwari, G., Kha, K. L., & Arokiasamy, A. R. A. (2022). Factors affecting students' entrepreneurial intentions: A systematic review (2005-2022) for future directions in theory and practice. *Management Review Quarterly*. <https://doi.org/10.1007/s11301-022-00289-2>

- Manning, M. (2009). The effects of subjective norms on behavior in the theory of planned behavior: A meta-analysis. *British Journal of Social Psychology, 48*(Pt 4), 649-705. <https://doi.org/10.1348/014466608X393136>
- Maresch, D., Harms, R., Kailer, N., & Wimmer-Wurm, B. (2016). The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technological Forecasting and Social Change, 104*, 172-179. <https://doi.org/10.1016/j.techfore.2015.11.006>
- Ndofirepi, T. M. (2020). Relationship between entrepreneurship education and entrepreneurial goal intentions: Psychological traits as mediators. *Journal of Innovation and Entrepreneurship, 9*(1). <https://doi.org/10.1186/s13731-020-0115-x>
- Nguyen, A. T., Do, T. H. H., Vu, T. B. T., Dang, K. A., & Nguyen, H. L. (2019). Factors affecting entrepreneurial intentions among youths in Vietnam. *Children and Youth Services Review, 99*, 186-193. <https://doi.org/10.1016/j.childyouth.2019.01.039>
- Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Czeglédi, C. (2017). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education, 44*(2), 361-379. <https://doi.org/10.1080/03075079.2017.1365359>
- Otache, I., Edopkolor, J. E., & Kadiri, U. (2022). A serial mediation model of the relationship between entrepreneurial education, orientation, motivation and intentions. *The International Journal of Management Education, 20*(2). <https://doi.org/10.1016/j.ijme.2022.100645>
- Otache, I., Umar, K., Audu, Y., & Onalo, U. (2019). The effects of entrepreneurship education on students' entrepreneurial intentions. *Education + Training, 63*(7/8), 967-991. <https://doi.org/10.1108/et-01-2019-0005>
- Ozaralli, N., & Rivenburgh, N. K. (2016). Entrepreneurial intention: Antecedents to entrepreneurial behavior in the U.S.A. and Turkey. *Journal of Global Entrepreneurship Research, 6*(1). <https://doi.org/10.1186/s40497-016-0047-x>
- Pauline, E. O., & T, P. (2019). Gender as a moderator between entrepreneurship intention and its predictors among university graduates in Nigeria and India. *African Journal of Business Management, 13*(18), 622-629. <https://doi.org/10.5897/ajbm2019.8853>
- Santos, S. C., & Liguori, E. W. (2020). Entrepreneurial self-efficacy and intentions: Outcome expectations as mediator and subjective norms as moderator. *International Journal of Entrepreneurial Behavior & Research, 26*(3), 400-415. doi:10.1108/IJEBr-07-2019-0436
- Setiawan, J. L., Kasim, A., & Ardyan, E. (2022). Understanding the consumers of entrepreneurial education: Self-efficacy and entrepreneurial attitude orientation among youths. *Sustainability, 14*(8). <https://doi.org/10.3390/su14084790>

- Shah, I. A., Amjed, S., & Jaboob, S. (2020). The moderating role of entrepreneurship education in shaping entrepreneurial intentions. *Journal of Economic Structures, 9*(1). <https://doi.org/10.1186/s40008-020-00195-4>
- Shahab, Y., Chengang, Y., Arbizu, A. D., & Haider, M. J. (2019). Entrepreneurial self-efficacy and intention: Do entrepreneurial creativity and education matter? *International Journal of Entrepreneurial Behavior & Research, 25*(2), 259-280. <https://doi.org/10.1108/ijeb-12-2017-0522>
- Shi, Y., Yuan, T., Bell, R., & Wang, J. (2020). Investigating the relationship between creativity and entrepreneurial intention: The moderating role of creativity in the theory of planned behavior. *Front Psychiatry, 11*, 1209. <https://doi.org/10.3389/fpsyg.2020.01209>
- Sun, H., Lo, C. T., Liang, B., & Wong, Y. L. B. (2017). The impact of entrepreneurial education on entrepreneurial intention of engineering students in Hong Kong. *Management Decision, 55*(7), 1371-1393. <https://doi.org/10.1108/md-06-2016-0392>
- Thompson, E. R. (2009). Individual entrepreneurial intent: Construct clarification and development of an internationally reliable metric. *Entrepreneurship Theory and Practice, 33*(3), 669-694. <https://doi.org/10.1111/j.1540-6520.2009.00321.x>
- Tsai, K.-H., Chang, H.-C., & Peng, C.-Y. (2016). Extending the link between entrepreneurial self-efficacy and intention: A moderated mediation model. *International Entrepreneurship and Management Journal, 12*, 445-463. <https://doi.org/10.1007/s11365-014-0351-2>
- Tung, D. T., Hung, N. T., Phuong, N. T. C., Loan, N. T. T., & Chong, S.-C. (2020). Enterprise development from students: The case of universities in Vietnam and the Philippines. *The International Journal of Management Education, 18*(1). <https://doi.org/10.1016/j.ijme.2019.100333>
- Walter, S. G., & Block, J. H. (2016). Outcomes of entrepreneurship education: An institutional perspective. *Journal of Business Venturing, 31*(2), 216-233. <https://doi.org/10.1016/j.jbusvent.2015.10.003>
- Wang, S., Feng, K., Zhang, Y., Liu, J., Wang, W., & Li, Y. (2020). Antecedents of public mental health during the COVID-19 pandemic: Mediation of pandemic-related knowledge and self-efficacy and moderation of risk level. *Front Psychiatry, 11*, 567119. <https://doi.org/10.3389/fpsyg.2020.567119>
- Wang, Y.-S., Lin, S.-j., Yeh, C.-H., Li, C.-R., & Li, H.-T. (2016). What drives students' cyber entrepreneurial intention: The moderating role of disciplinary difference. *Thinking Skills and Creativity, 22*, 22-35. <https://doi.org/10.1016/j.tsc.2016.08.003>
- Wardana, L. W., Narmaditya, B. S., Wibowo, A., Mahendra, A. M., Wibowo, N. A., Harwida, G., & Rohman, A. N. (2020). The impact of entrepreneurship education and students' entrepreneurial mindset: The mediating role of attitude and self-efficacy. *Heliyon, 6*(9), e04922. <https://doi.org/10.1016/j.heliyon.2020.e04922>

- Yousaf, U., Ali, S. A., Ahmed, M., Usman, B., & Sameer, I. (2021). From entrepreneurial education to entrepreneurial intention: A sequential mediation of self-efficacy and entrepreneurial attitude. *International Journal of Innovation Science*, 13(3), 364-380. <https://doi.org/10.1108/ijis-09-2020-0133>
- Zaremohzzabieh, Z., Ahrari, S., Krauss, S. E., Samah, A. A., Meng, L. K., & Ariffin, Z. (2019). Predicting social entrepreneurial intention: A meta-analytic path analysis based on the theory of planned behavior. *Journal of Business Research*, 96, 264-276. <https://doi.org/10.1016/j.jbusres.2018.11.030>
- Zdolsek Draksler, T., & Sirec, K. (2021). The study of entrepreneurial intentions and entrepreneurial competencies of business vs. non-business students. *Journal of Competitiveness*, 13(2), 171-188. <https://doi.org/10.7441/joc.2021.02.10>

Appendix

Table I. The definition of variables in research model

Variables	Definition	Sources
Subjective norms	a person's perception of the opinions of social reference groups (such as family and friends) about whether or not they should start a business	Ajzen (1991)
Entrepreneurial self-efficacy	an entrepreneur's confidence in being able to complete specific tasks	Baum et al. (2001)
Attitude toward entrepreneurship	the degree to which a person thinks positively or negatively about being an entrepreneur	Autio et al. (2001)
Entrepreneurial intention	a person's self-recognition that they intend to set up a new business and consciously plan to do so in the future	Thompson (2009)
Entrepreneurial education	education programmes that aim to provide students with essential knowledge and skills to establish a business	Otache et al. (2022)

Abstrakt

CEL: Niniejsze badanie ma na celu wyjaśnienie mechanizmu wpływu norm subiektywnych na intencje przedsiębiorcy. Wyniki dotyczące tego, jak subiektywne normy przyczyniają się do kształtowania intencji start-upu, są niespójne i niejasne, co można zauważyć we wcześniejszych badaniach. Integrując teorię planowanych zachowań i teorię własnej skuteczności, badamy, czy przedsiębiorcze poczucie własnej skuteczności i stosunek do przedsiębiorczości seryjnie pośredniczą w związku między subiek-

tywnymi normami a zamiarem założenia firmy. Ponadto niniejsze badanie analizuje umiarkowaną rolę edukacji w zakresie przedsiębiorczości w szeregowym pośrednim wpływie subiektywnych norm na intencje przedsiębiorcze poprzez poczucie własnej skuteczności i nastawienie do przedsiębiorczości. **METODYKA:** W badaniu tym wykorzystano próbę 958 studentów studiów magisterskich w Vietnamie w celu zbadania moderowanego modelu mediacji szeregowej subiektywnych norm dotyczących intencji przedsiębiorczych. W celu sprawdzenia rzetelności i trafności skal przeprowadzono konfirmacyjną analizę czynnikową (CFA). Następnie do przetestowania modelu badawczego wykorzystano makro SPSS PROCESS opracowany przez Hayes. Konkretnie, Model 6 został wykorzystany do zbadania seryjnego pośredniego wpływu subiektywnych norm na intencje założenia firmy, a Model 84 został wdrożony do zbadania umiarkowanego wpływu edukacji w zakresie przedsiębiorczości. **WYNIKI:** Wyniki tego badania wykazały, że poczucie własnej skuteczności i postawa przedsiębiorcza znacząco pośredniczą w wpływie norm subiektywnych na intencje przedsiębiorcze. W szczególności wyniki ujawniają, że seryjny efekt mediacji poczucia własnej skuteczności i postawy przedsiębiorczości był znaczący, a poczucie własnej skuteczności i postawy przedsiębiorczości odgrywało rolę w pełni pośredniczącą w relacji między normami subiektywnymi a intencjami start-upu. Ponadto badanie to wykazało, że efekt seryjnej mediacji subiektywnych norm na intencje rozpoczęcia działalności poprzez poczucie własnej skuteczności i postawę przedsiębiorczą był negatywnie moderowany przez edukację w zakresie przedsiębiorczości. **IMPLIKACJE:** Wyniki tego badania dodatkowo wyjaśniają związek między subiektywnymi normami a intencjami przedsiębiorczymi oraz rolę edukacji w zakresie przedsiębiorczości, przyczyniając się w ten sposób do zmniejszenia zauważalnej luki między tym związkiem. Poza tym nasze badanie dostarcza kilku implikacji dla rządów i decydentów politycznych, aby promować zamiar założenia firmy. Wyniki naszego badania wskazują, że subiektywne normy są ważnym czynnikiem w promowaniu intencji przedsiębiorczych. Dlatego decydenci powinni podjąć pewne działania promujące kulturę przedsiębiorczości, takie jak wzmocnienie działań propagandowych w celu promowania wizerunku odnoszących sukcesy przedsiębiorców, chwalenie firm i przedsiębiorców, którzy wnoszą wkład w społeczeństwo oraz dawanie dowodów ich wkładu w rozwój kraju. Promowanie kultury przedsiębiorczości może zwiększyć presję grupy rówieśniczej na potencjalnych przedsiębiorców, wzmacniając w ten sposób zamiar założenia firmy. **ORYGINALNOŚĆ I WARTOŚĆ:** Niniejsze badanie ma przyczynić się do lepszego zrozumienia mechanizmu wpływu norm subiektywnych na intencje przedsiębiorcze i wyjaśnić rolę edukacji w zakresie przedsiębiorczości w tym związku. Niniejsze badanie bada mediacyjną rolę poczucia własnej skuteczności i postawy przedsiębiorczej w związku między normami subiektywnymi a zamiarem założenia firmy. Ponadto badanie pokazuje, że edukacja w zakresie przedsiębiorczości osłabia model seryjnej mediacji subiektywnych norm dotyczących zamiaru założenia firmy.

Słowa kluczowe: norma subiektywna, poczucie własnej skuteczności przedsiębiorczej, postawa wobec przedsiębiorczości, intencja przedsiębiorcza, edukacja przedsiębiorcza, teoria planowanych zachowań, teoria poczucia własnej skuteczności, moderowany model mediacji seryjnej

Biographical notes

Van Hieu Pham is a lecturer at Hanoi University of Business and Technology, Hanoi, Vietnam. His research interests include entrepreneurship, management and employment.

Thi Kim Chi Nguyen is a lecturer at Hanoi University of Business and Technology, Hanoi, Vietnam. Her areas of specialization and research are entrepreneurship, organization management and intention behavior. Her recent research has been published in *Cogent of Economics and Finance*, *Data in Brief*, etc.

Thi Bich Lien Nguyen is a lecturer at Vinh University, Nghe An, Vietnam. Her research interests include entrepreneurship and green consumption.

Thuy Tran Thi Thanh is a lecturer at Vinh University, Nghe An, Vietnam. Her research interests include entrepreneurship and organizational behavior.

Nga Thi Viet Nguyen is a lecturer at the Academy of Finance, Hanoi, Vietnam. Her areas of specialization and research are entrepreneurship, financial management and securities investors.

Conflicts of interest

The authors declare no conflict of interest.

Citation (APA Style)

Pham, V.H, Nguyen, T.K.C, Nguyen, T.B.L, Tran, T.T.T, & Nguyen, T.V.N. (2023). Subjective norms and entrepreneurial intention: A moderated-serial mediation model. *Journal of Entrepreneurship, Management, and Innovation*, 19(1), 113-140. <https://doi.org/10.7341/20231914>