



Causal factors and effects on entrepreneurial intentions of vocational students

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Article Info

Article history:

Received 16 September 2024

Revised 30 October 2024

Accepted 03 November 2024

Available online 18 March 2026

Keywords:

causal and effect,
entrepreneurial,
vocational students

Abstract

The research objectives are (1) to analyze the level of entrepreneurial intention, attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of lifelong learners, and entrepreneurial behaviors of vocational students, (2) to develop and examine the coherence of the cause-and-effect model of vocational students' entrepreneurial intentions, and (3) to study the direct and indirect effects of factors affecting the entrepreneurial intentions and entrepreneurial behaviors of vocational students. The research samples are 1,122 vocational students at the high vocational certificate using the multi-stage random sampling. The research instrument was a rating scale questionnaire. The data were analyzed using descriptive statistics, and the structural equation model was analyzed using the Mplus 8.6 program.

The findings of the study revealed that (1) the level of entrepreneurial intention ($M = 3.14$, $SD = 0.84$), attitudes towards entrepreneurship ($M = 3.22$, $SD = 0.79$), self-efficacy for entrepreneurship ($M = 3.21$, $SD = 0.79$), characteristics of lifelong learners ($M = 3.18$, $SD = 0.81$), as well as entrepreneurial behaviors of vocational students ($M = 3.21$, $SD = 0.83$) appeared at a medium level for all variables, (2) the development results of the cause-and-effect model of entrepreneurial intentions were consistent with the empirical data with $\chi^2(154) = 1,206.10$, $p < .001$, RMSEA = .08, CFI = .97, TLI = .97, SRMR = .03, (3) the self-efficacy embraced the greatest effect on entrepreneurship, where the total influence value on entrepreneurial behaviors was .60. The direct effect was .55, and the indirect effect on entrepreneurial behaviors through entrepreneurial intentions and attitudes towards entrepreneurship was .05.

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<https://doi.org/10.34044/j.kjss.2026.47.1.09>

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Introduction

In the modern and dynamic world, endless and rapid changes occur in technological, economic, social, and political matters at both global and national levels, resulting in constant instability. Consequently, numerous jobs have become unwanted in the labor market, and career trends have shifted. One of the occupations garnering significant interest and discussion these days is that of entrepreneurs, driven by technological developments and social changes. Entrepreneurs are not born but are made through various life experiences. These reflect that entrepreneurship stems from learning and practicing to build strong and successful organizations. Moreover, entrepreneurs must embrace entrepreneurial skills, which require various necessary talents, such as the abilities to recognize opportunities, create opportunities, and find or raise capital for their business when opportunities arise (Johnson et al., 2015). The abilities of entrepreneurs are determined by unique styles and quality characteristics of successful business operations (Mamun et al., 2017). In addition, entrepreneurs must stay committed to their goals, continuously develop themselves, and not give up when facing obstacles, to lead themselves and their businesses to success (National Endowment for Science, Technology and the Arts [NESTA], 2008; O'Hara et al., 2011). These skills help entrepreneurs guide their businesses to success and achieve their desired goals, including excelling in other fields.

Moreover, countless factors have an impact on entrepreneurial intentions. The first factor is attitudes towards entrepreneurship, reflecting people's thoughts, beliefs, and feelings towards the entrepreneurial career. These attitudes cannot be formed without experiences related to entrepreneurship. If individuals have positive experiences with entrepreneurship, they will develop positive attitudes towards being an entrepreneur, which will motivate and change their interest in pursuing an entrepreneurial career. Additionally, confidence in their abilities is another factor that helps enhance attitudes towards entrepreneurship. When individuals are confident in their abilities to achieve desired goals, their attitudes towards entrepreneurship will be improved, and their determination to achieve these goals will be increased. These are in line with the theory of planned behavior (Ajzen, 1991). Furthermore, the research findings reveal that entrepreneurial attitudes influence entrepreneurial intentions (Eyel and Durmaz, 2019; Mawardi and Baihaqi, 2019), showing that entrepreneurial attitudes are an important factor that directly affects entrepreneurial

intentions and indirectly affects entrepreneurial intentions through self-efficacy for entrepreneurship.

The next factor is self-efficacy for entrepreneurship, reflecting confidence in one's abilities and competency to become a successful entrepreneur. This concept is considered a component of social learning theory. Individuals with a high perception of their abilities will set higher goals (Bandura, 1986). When individuals recognize their own capabilities in entrepreneurship, they become more confident and determined to pursue an entrepreneurial career (Sesen, 2013). Furthermore, having the courage to express entrepreneurial behaviors supports the creation of entrepreneurial actions. On the other hand, if individuals have low self-efficacy or underestimate their abilities, they will often set lower goals due to a lack of confidence and determination. Therefore, self-efficacy for entrepreneurship is related to attitudes towards entrepreneurship. Additionally, the research results reveal that the entrepreneurial self-efficacy is a crucial foundation of entrepreneurial intentions (Chen et al., 1998; Gao and Qin, 2022; Izquierdo and Buelens, 2011). The self-efficacy has also a direct effect on entrepreneurial behaviors (Darmanto and Yuliari, 2018; Hu et al., 2021; Shaheen & AL-Haddad, 2018), showing that the entrepreneurial self-efficacy causes the entrepreneurial intentions and directly influences entrepreneurial behaviors. Furthermore, it has an indirect effect on entrepreneurial behaviors through entrepreneurial intentions.

The final factor examined in this study is the characteristics of lifelong learners, reflecting trends towards lifelong learning. Lifelong learners are one of the defining traits of entrepreneurs and learners in the 21st century, enabling them to adapt and keep pace with the rapid changes in today's world. Individuals with entrepreneurial intentions will always strive to seek new knowledge and remain committed to developing their own knowledge and skills. They plan future goals and pursue them firmly and without hesitation. The characteristics of lifelong learners in this research align with the definition of lifelong learning trends. Moreover, the research findings indicate that people who embrace lifelong learning have higher entrepreneurial intentions (Aykan et al., 2019; Gültekin and Erdoğan, 2016). The findings, furthermore, reveal that lifelong learners influence their entrepreneurial behaviors (Erdoğan and Ayanoğlu, 2021; Gültekin and Erdoğan, 2016). The characteristics of lifelong learners affect entrepreneurial intentions and have a direct effect on entrepreneurial behaviors. According to the factors affecting the intentions to become an entrepreneur, if students have a positive

attitude towards being an entrepreneur, a high self-efficacy regarding entrepreneurship, and characteristics of being lifelong learners, their intentions to become entrepreneurs will consequently be high. These intentions lead to actions that demonstrate more entrepreneurial behaviors. The entrepreneurial intentions, therefore, play an important role as a mediating variable that helps predict entrepreneurial behaviors.

Based on the importance of entrepreneurship mentioned above, the researcher aims to investigate the factors that cause and affect vocational students' levels of entrepreneurial intention, including direct and indirect effects of attitudes towards entrepreneurship, self-efficacy in entrepreneurship, and characteristics of lifelong learners on entrepreneurial intentions and behaviors. Furthermore, the researcher seeks to examine the consistency of the cause-and-effect model of entrepreneurial intentions. The research findings will be beneficial for developing the teaching curricula, learning management plans, and activities that support entrepreneurial intentions among vocational students.

Literature Review

Entrepreneurial intentions are central to understanding behavior, as highlighted by Krueger et al. (2000). These intentions are psychological variables that causally influence an individual's behavior in pursuing specific actions (Bagozzi et al., 1989), aligning with the Theory of Planned Behavior (Ajzen, 1991).

Intentions can be categorized into three characteristics: (1) psychological processes that reflect individual behavior, (2) stable traits, indicating the capability to consistently perform tasks over time, and (3) proactive processes that focus on enhancing task selection quality through various inputs (Luck & Vecera, 2002). Additionally, Anderson (2004) describes intention as a cognitive process involving the selective attention to one aspect of the environment while ignoring others. Intention is also referred to as the allocation of resources for processing.

Intention is a combination of feelings, desires, and efforts that individuals create to perform specific actions or exhibit certain behaviors driven by intention. It is the best predictor of individual behavior, indicating the likelihood of performing a particular behavior. The foundation of intention is based on the Theory of Planned Behavior (Ajzen, 1991). Although actual behavior may differ from intended behavior, intention has been proven to be the most consistent predictor of actual behavior.

A review of related literature and research shows that key factors significantly influencing entrepreneurial intentions include attitudes toward entrepreneurship, self-efficacy in entrepreneurship, and lifelong learning characteristics. These three variables are particularly relevant for individuals who are not yet full-fledged entrepreneurs, have no business of their own, but have entrepreneurial intentions for the future.

The causal and resultant factors of vocational students' entrepreneurial intentions have been explored through related literature and research. The theoretical frameworks commonly used by researchers and scholars to explain the causes and effects of entrepreneurial intentions are Ajzen's (1991) Theory of Planned Behavior and Bandura's (1997) Social Cognitive Theory (Gundry et al., 2014; Krueger & Carsrud, 1993). The most influential factor on entrepreneurial intentions is positive attitudes toward entrepreneurship (Gundry et al., 2014). Individuals with positive attitudes toward entrepreneurship, who perceive and evaluate it as beneficial, are more motivated to become entrepreneurs.

Entrepreneurial intentions influence entrepreneurial behavior, and the causal factors contributing to students' entrepreneurial intentions include attitudes toward entrepreneurship, self-efficacy in entrepreneurship, and lifelong learning characteristics. The strength of the effects of these variables varies. The relationship between entrepreneurial intentions and entrepreneurial behavior shows a positive correlation, as explained by Ajzen's (1991) Theory of Planned Behavior, which posits that entrepreneurial intentions are the strongest predictor of entrepreneurial behavior.

The relationship between entrepreneurial intentions and attitudes toward entrepreneurship indicates that positive attitudes toward entrepreneurship are positively correlated with entrepreneurial intentions. Research by Toledano & Urbano (2008) on promoting entrepreneurial mindsets at universities in the South of Spain found that entrepreneurial attitudes are related to entrepreneurial skills and intentions. This aligns with studies by Shah & Soomro (2017) and Eysel & Durmaz (2019), which found that attitudes have the most significant influence on entrepreneurial intentions.

Moreover, entrepreneurial self-efficacy is a psychological factor derived from Social Learning Theory (Bacq et al., 2017). Self-efficacy, an element of Social Learning Theory, links with the Theory of Planned Behavior (TPB) and has been studied for its indirect effect on entrepreneurial intentions through TPB (Maheshwari & Kha, 2022). Self-efficacy is the core of Social Learning Theory. Research by Izquierdo & Buelens (2011)

on competing models of entrepreneurial intentions found a significant relationship between entrepreneurial self-efficacy and intentions.

Research by Shaheen & AL-Haddad (2018) on entrepreneurial self-efficacy and entrepreneurial behavior, which sampled 55 individuals, found that self-efficacy in entrepreneurship affects entrepreneurial behavior. This finding is consistent with Hu et al. (2021), who researched the role of education and mentorship in entrepreneurial behavior and found that entrepreneurial self-efficacy is the most influential factor in entrepreneurial behavior.

In the study by Liñán & Chen (2009), individuals with high self-confidence in their abilities and a strong sense of control over their capabilities also have positive attitudes toward entrepreneurship. Research by Izquierdo & Buelens (2011) on competing models of entrepreneurial intentions found a positive correlation between self-efficacy in entrepreneurship and attitudes toward entrepreneurship.

While research on lifelong learning and entrepreneurial intentions is still limited in both Thailand and abroad, it has been found that lifelong learning trends correlate with a tendency toward lifelong learning, including definitions and measurements. Laal & Salamati (2012) stated that the trend of lifelong learning involves an inclination to engage in continuous learning activities for personal and professional development. Coşkun & Demirel (2010) and Demirel & Akkoyunlu (2017) similarly stated that the tendency toward lifelong learning measures curiosity, self-directed behavior, motivation, and persistence in initiating learning. Research by Aykan et al. (2019) on the effect of university students' individual innovation and lifelong learning trends on entrepreneurship orientation found a positive relationship between entrepreneurial orientation and lifelong learning trends.

The theoretical frameworks commonly used to explain the causes and effects of entrepreneurial intentions are Ajzen's (1991) Theory of Planned Behavior and Bandura's (1997) Social Cognitive Theory (Gundry et al., 2014; Krueger & Carsrud, 1993). The most influential factor on entrepreneurial intentions is positive attitudes toward entrepreneurship (Gundry et al., 2014). Individuals with positive attitudes toward entrepreneurship, who perceive and evaluate it as beneficial, are more motivated to become entrepreneurs.

Entrepreneurial self-efficacy is the belief in one's own ability to succeed as an entrepreneur. Individuals with high confidence in their abilities are more driven by their self-perceptions. Entrepreneurial self-efficacy contributes to entrepreneurial intentions and behaviors and serves as

a motivation for positive attitudes toward entrepreneurship, fostering determination and commitment to becoming an entrepreneur, ultimately leading to entrepreneurial behavior (Darmanto & Yuliari, 2018; Neneh, 2019).

Lifelong learning is continuous learning that occurs throughout life. It involves independent learning driven by personal interest, which motivates intentional learning. Entrepreneurs constantly develop their knowledge, skills, and abilities, and individuals with a tendency toward lifelong learning possess one of the essential traits for entrepreneurship (Aykan et al., 2019). Lifelong learning trends support entrepreneurship.

The causal factors of entrepreneurial intentions include positive attitudes toward entrepreneurship, self-efficacy in entrepreneurship, and lifelong learning characteristics. These three factors influence individuals' motivation to become entrepreneurs, leading to entrepreneurial intentions and ultimately entrepreneurial behavior. Studies on the factors influencing entrepreneurial intentions have found that attitudes toward entrepreneurship directly impact entrepreneurial intentions (González-Serrano et al., 2018; Mawardi & Baihaqi, 2019; Toledano & Urbano, 2008). Self-efficacy in entrepreneurship also directly affects entrepreneurial intentions (Darmanto & Yuliari, 2018; Gao & Qin, 2022; Izquierdo & Buelens, 2011; Pfeifer et al., 2014) and lifelong learning characteristics influence entrepreneurial behavior (Aykan et al., 2019). Entrepreneurial intentions directly affect entrepreneurial behavior (Kong et al., 2020; Tsou et al., 2023). Additionally, self-efficacy in entrepreneurship can directly impact entrepreneurial behavior (Darmanto & Yuliari, 2018; Hu et al., 2020; Shaheen & AL-Haddad, 2018), and lifelong learning influences entrepreneurial behavior (Erdoğan & Ayanoğlu, 2021; Gültekin & Erdoğan, 2016). Moreover, self-efficacy in entrepreneurship positively impacts attitudes toward entrepreneurship, which in turn influences entrepreneurial intentions (Izquierdo & Buelens, 2011; Liñán & Chen, 2009; Tsai et al., 2016)

Methodology

Participants

The research population consisted of vocational students at the High Vocational Certificate level in government vocational institutes, including technical colleges, located in major provinces that served as educational centers in each of the five regions of Thailand. The research sample comprised 1,122 vocational students at the High Vocational Certificate level, selected through multi-stage random sampling.

Data Collection

This research examined five variables. Entrepreneurial intentions consisting of 3 observable variables, namely 1) readiness for entrepreneurship, 2) commitment in entrepreneurship and 3) goal of entrepreneurship. The causal variables of entrepreneurial intentions included 1) self-efficacy for entrepreneurship consisting of 5 observable variables, namely 1.1) efficacy for opportunity recognition, 1.2) efficacy for new ideas, 1.3) efficacy for coping with unexpected challenges, 1.4) efficacy for people operations, and 1.5) efficacy for finance. Furthermore, the variables were 2) attitudes towards entrepreneurship comprising 3 observable variables, namely 2.1) knowledge and understanding of entrepreneurship, 2.2) feelings towards entrepreneurship, and 2.3) behavioral trends related to entrepreneurship, and 3) characteristics of lifelong learners containing 4 observable variables, namely 3.1) learning ability, 3.2) desire to learn, 3.3) willingness to learn, and 3.4) ability to learn with others. As for the dependent variables, they were entrepreneurial behaviors embracing 5 observable variables, namely 1) risk management, 2) seeking opportunities, 3) initiatives, 4) starting a business, and 5) handling situations.

The only 1 research tool used in this study is a vocational student questionnaire which is divided into 2 parts, namely 1) personal information, and 2) entrepreneurial intentions and factors related to entrepreneurial intentions. The questionnaire contains rating scale 86 questions, and the tool has a reliability between 0.96–0.98.

The data for this study were gathered through online platforms. The researcher sent documents to the students' educational institutes and disseminated the online questionnaires, allowing them to provide information

voluntarily and without coercion. The data were collected using questionnaires developed by the researcher. The participation was entirely based on the volunteers' readiness and willingness, and codes were used instead of their real names and personal information. The information was presented in aggregate form, without identifying specific individuals. Only the researcher had access to the data, which would be retained for one year. This research obtained ethical approval from the Human Research Ethics Committee at Chiang Mai University, with the code CMUREC 67/128.

Data Analysis

The data were analyzed using descriptive statistics, including mean and standard deviation. The fit between the theoretical model and empirical data was evaluated through RMSEA, CFI, TLI, and SRMR, which were obtained when data were analysed using Mplus 8.6.

Results

The levels of entrepreneurial intention, attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of lifelong learners, and entrepreneurial behaviors of vocational students were at the medium mean for all variables. The attitudes towards entrepreneurship comprised the highest mean ($M=3.22$, $SD=0.79$), followed by the self-efficacy for entrepreneurship ($M=3.21$, $SD=0.79$), entrepreneurial behaviors ($M=3.21$, $SD=0.83$), and characteristics of lifelong learners ($M=3.18$, $SD=0.81$). Lastly, the entrepreneurial intentions had the lowest mean ($M=3.14$, $SD=0.84$). The details are shown in [Table 1](#).

Table 1 The level of entrepreneurial intentions, attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of lifelong learners, and entrepreneurial behaviors of vocational students

Variables	<i>M</i>	<i>SD</i>	Level
Entrepreneurial intentions	3.14	0.84	Medium
Readiness for entrepreneurship	3.19	0.86	Medium
Commitment in entrepreneurship	3.12	0.87	Medium
Goal of entrepreneurship	3.12	0.87	Medium
Attitudes towards entrepreneurship	3.22	0.79	Medium
Knowledge and understanding of entrepreneurship	3.28	0.84	Medium
Feelings towards entrepreneurship	3.20	0.81	Medium
Behavioral trends related to entrepreneurship	3.17	0.84	Medium
Characteristics of lifelong learners	3.18	0.81	Medium
Learning ability	3.15	0.83	Medium
Desire to learn	3.19	0.84	Medium
Willingness to learn	3.20	0.85	Medium
Ability to learn with others	3.19	0.85	Medium

Table 1 Continued

Variables	<i>M</i>	<i>SD</i>	Level
Self-efficacy for entrepreneurship	3.21	0.79	Medium
Efficacy for Opportunity recognition	3.20	0.85	Medium
Efficacy for new ideas	3.19	0.82	Medium
Efficacy for coping with unexpected challenges	3.22	0.83	Medium
Efficacy for people operations	3.20	0.85	Medium
Efficacy for finance	3.22	0.85	Medium
Entrepreneurial behaviors	3.21	0.83	Medium
Risk management	3.22	0.83	Medium
Seeking opportunities	3.20	0.86	Medium
Initiatives	3.21	0.87	Medium
Starting a business	3.20	0.87	Medium
Handling situations	3.24	0.86	Medium

Note: Highest level: 5.00–4.21, High level: 4.20–3.41, Medium level: 3.40–2.61, Low level: 2.60–1.81, Lowest level: 1.80–1.00

Results of developing and verifying the consistency of the cause-and-effect model of entrepreneurial intentions of vocational students. Examining the consistency of the causal factors and effects of vocational students' entrepreneurial intentions responding to the research objectives indicated that the model in this analysis appeared in line with the empirical data based on the following index: Chi-square (χ^2) was 1206.10, degrees of freedom (*df*) was 154, *p* value was .00, the Root Mean Square Error of Approximation (RMSEA) was 0.08, the Standard Root Mean Square Residual (SRMR) was 0.03, the Comparative Fit Index (CFI) was 0.97, and the Tucker–Lewis index (TLI) was 0.97. These showed that the causal factors and effects of vocational students' entrepreneurial intentions were in accordance with the empirical data according to the criteria of Hooper et al. (2008). The details are shown in Table 2.

Direct and indirect effects of factors affecting entrepreneurial intentions and entrepreneurial behaviors of vocational students. The direct, indirect, and total effect values of the causal factors and effects of each vocational student's entrepreneurial intentions were generated. When considering the direct, indirect, and total influence values affecting entrepreneurial behaviors, it was found that the self-efficacy for entrepreneurship had an impact on entrepreneurship behaviors with the highest total effect, appearing .60 with a statistical significance level of .05. The direct effect was .55, with a statistical significance level of .05, and the indirect effect on entrepreneurial behaviors through entrepreneurial intentions and attitudes towards entrepreneurship was .05, with a statistical significance level of .05. Next, the characteristics of those who were always learning had a total effect affecting entrepreneurial behaviors of .34, with a statistical significance level of .05.

Table 2 Direct, indirect, and total effect values of causal factors and effects of vocational students' entrepreneurial intentions

Dependent Variables	Attitudes towards Entrepreneurship			Entrepreneurial Intentions			Entrepreneurial Behaviors		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
Self-efficacy for entrepreneurship	0.84*		0.84*	0.50*	0.46*	0.04	0.63*	0.05*	0.58*
	(0.02)		(0.02)	(0.05)	(0.04)	(0.05)	(0.04)	(0.01)	(0.04)
	0.86		0.86	0.49	0.45	0.04	0.60	0.05	0.55
Attitudes towards entrepreneurship				0.55*		0.55*	0.06*	0.06*	
				(0.04)		(0.04)	(0.01)	(0.01)	
				0.53		0.53	0.05	0.05	
Characteristics of lifelong learners				0.33*		0.33*	0.35*	0.03*	0.32*
				(0.05)		(0.05)	(0.04)	(0.01)	(0.04)
				0.32		0.32	0.34	0.03	0.30
Entrepreneurial intentions							0.10*		0.10*
							(0.02)		(0.02)
							0.10		0.10
R ²	0.71			0.74			0.86		

χ^2 (154) = 1206.10, *p* < .001, RMSEA = .08, CFI = .97, TLI = .97, SRMR = .03

P.S. Bold text represents effect values in standard form.

The direct effect was .30, with a statistical significance level of .05, and the indirect effect on entrepreneurial behaviors through entrepreneurial intentions was .03, with a statistical significance level of .05. In addition, the entrepreneurial intentions had only a direct effect affecting entrepreneurial behaviors of .10, with a statistical significance level of .05. The attitudes towards entrepreneurship comprised only an indirect effect affecting entrepreneurial behaviors and embraced the least effect on entrepreneurial behaviors, appearing .05, with a statistical significance level of .05.

When considering the variables that affected entrepreneurial intentions, it was revealed that the attitudes towards entrepreneurship had only a direct effect on entrepreneurial intentions, which was the greatest effect, appearing .53, with a statistical significance level of .05, followed by the total effect of

self-efficacy for entrepreneurship, appearing .49, with a statistical significance level of .05. It had a direct effect of .04, without a statistical significance level of .05. However, there was an indirect effect on entrepreneurial intentions through attitudes towards entrepreneurship, appearing .45, with a statistical significance level of .05. Furthermore, the characteristics of lifelong learning had only direct effects affecting entrepreneurial intentions, which were the least influence affecting entrepreneurial intentions, appearing .32, with a statistical significance level of .05. Additionally, when considering the variables affecting the attitudes towards entrepreneurship, it indicated that only self-efficacy affected the attitudes towards entrepreneurship. These resulted in direct effect appearing 0.86 with a statistical significance level of .05. The details are shown in Table 2 and Figure 1.

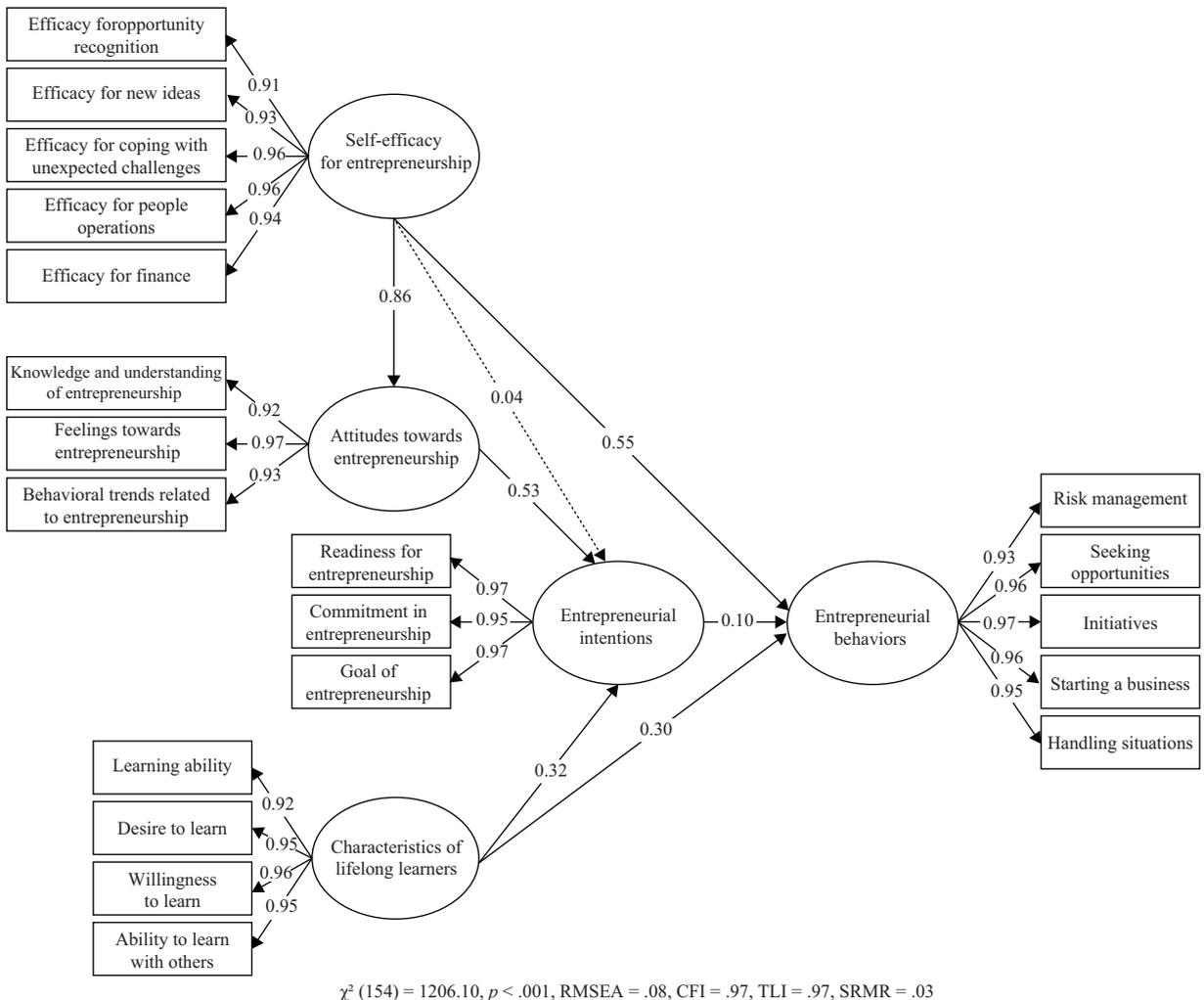


Figure 1 Direct, indirect, and total effect values of causal factors and effects of vocational students' entrepreneurial intentions

Discussion

(1) The research findings showed that the levels of entrepreneurial intentions, attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of lifelong learners, and entrepreneurial behaviors of vocational students were at the medium level for every variable. It revealed that vocational students at the High Vocational Certificate level were still unsure whether they would choose to be entrepreneurs or not after graduation. They seemed to be interested in starting a business as owners, but could not make a clear decision because they lacked sufficient information and financial support to make it possible. The students might have positive opinions on entrepreneurship, but still did not recognize the importance or opportunities in doing a business as it should be. Furthermore, the attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of lifelong learners, and entrepreneurial behaviors of vocational students were still at the medium level. These depended on numerous factors, for example, the students' background in various dimensions. However, if we considered educational institutions, it seemed that they still did not promote the entrepreneurial education for students as much as other career skills based on their fields of study. According to the research of de Lourdes Carcamo-Solis et al. (2017) and Nabi et al. (2018), it was found that organizing learning activities in classrooms related to business creation and trading at both small and large levels, or doing various projects related to business would enable students to embrace more positive attitudes, higher perceptions, and better entrepreneurial behaviors with essential skills to become entrepreneurs. Additionally, doing group activities, working as a teamwork, designing business simulations, and providing knowledge on creating a business development plan as the first thing of simulating new business or company would encourage students to gain more inspiration. These would lead to increased entrepreneurial intentions (Arranz et al., 2017).

(2) The research findings revealed that the cause-and-effect model of entrepreneurial intentions of vocational students was in line with the empirical data. The self-efficacy affecting entrepreneurship had the highest total influence value on entrepreneurial behaviors, appearing 0.60 with a statistical significance level of .05, which comprised the direct effect of .55, and the indirect effect on entrepreneurial behaviors through entrepreneurial intentions and entrepreneurial attitudes, appearing .05. These reflected that the self-efficacy

was particularly necessary to entrepreneurial behaviors and entrepreneurial intentions according to Bandura's concept (1986) portraying that the self-efficacy theory was a vital factor for explaining self-efficacy expectations, related to individuals' abilities to choose to do something in a specific manner. This expectation also determined the expression of behaviors. The self-efficacy was individuals' judgment on their own abilities to manage and perform behaviors to achieve specific goals connected to their own efficacy expectations. In addition, the self-efficacy for entrepreneurship displayed confidence in their own abilities and competency to become a successful entrepreneur. This was classified as one of the components of the social learning theory, stating that individuals with a high perception of ability would have an impact on setting high goals (Bandura, 1986). When individuals recognized their abilities to become an entrepreneur, they would be more confident and determined to be an entrepreneur (Sesen, 2013) and had more positive attitudes towards entrepreneurship aiming to achieve goals. These appeared in line with the theory of planned behavior (Ajzen, 1991). Moreover, the research findings unveiled that entrepreneurial attitude influenced entrepreneurial intentions (Eyel and Durmaz, 2019; Mawardi and Baihaqi, 2019; Shah and Soomro, 2017).

Besides, the characteristics of those who embraced lifelong learning had a total influence value affecting entrepreneurial behaviors of .34, with a statistical significance level of .05, which comprised the direct effect of .30, with a statistical significance level of .05, and the indirect effect on entrepreneurial behaviors through entrepreneurial intentions of .03, with a statistical significance level of .05. These were probably because they always learned new things at all times and recognized countless opportunities, enabling them to be able to identify business opportunities that others might overlook. You would, furthermore, be able to learn how to manage and take risks. The entrepreneurs must have the courage to face the uncertainties and risks involved in starting and running a business, which required continuous learning. These appeared consistent with the research of Erdoğan and Ayanoglu (2021) on the relationship between school administrators and teachers' lifelong learning tendencies, as well as innovative and entrepreneurial behavior levels. There was, additionally, a significant positive relationship between lifelong learning and entrepreneurial behavior levels, which appeared in accordance with the research of Gültekin and Erdoğan (2016; de Lourdes Carcamo-Solis et al. (2017) who had also found a significant positive relationship between lifelong learning tendencies and levels of entrepreneurial behavior.

Recommendation

Recommendations for Research Findings

(1) According to the research findings, it is noticed that students' entrepreneurial intentions including attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of lifelong learners, and entrepreneurial behaviors of vocational students are at the medium level. These reflect that there are a number of students who intend to become entrepreneurs after graduation. Related educational institutions could provide additional courses or learning activities for this group of students in addition to the curriculum so that students can improve their skills and abilities in various areas which are beneficial to becoming an entrepreneur after graduation.

(2) The research findings reveal that, overall, the self-efficacy affects entrepreneurship and has a high influence on entrepreneurial behaviors. Therefore, the educational institutions and related agencies should strengthen and cultivate knowledge and skills in various matters concerning the entrepreneurship for students who wish to become entrepreneurs. These can make students confident in their own entrepreneurial potential affecting their entrepreneurial behaviors accordingly. Additionally, the research findings reveal that attitudes toward entrepreneurship and Characteristics of lifelong learners play a crucial role in entrepreneurial intention. Therefore, educational institutions should design various activities that provide students with opportunities to learn about entrepreneurship in all dimensions, enabling them to gain a deeper understanding of becoming entrepreneurs.

Recommendations for Future Research

(1) Future research could possibly collect data from vocational students in every level, from the Vocational Certificates of Year 1 - 3 to the High Vocational Certificates of Year 1 - 2, for analyzing and comparing each level to explore trends of entrepreneurial intentions, analyze the curriculum of each year, and explore trends of entrepreneurial intentions among vocational students.

(2) Future research should be further studied by using mixed methods collecting both quantitative and qualitative data to find more clear and additional clarification of why vocational students at the High Vocational Certificate level have intentions to be entrepreneurs, attitudes towards entrepreneurship, self-efficacy for entrepreneurship, characteristics of

lifelong learners, and entrepreneurial behaviors of vocational students at the medium level. These are to understand and to find ways that seem appropriate and consistent with the vocational students' goals, to support them.

(3) Future research should focus on developing a curriculum that can promote vocational students who intend to become entrepreneurs, helping them gain knowledge and skills in entrepreneurship. This will enable students to build self-efficacy in their abilities, develop a positive attitude towards entrepreneurship, and continuously enhance their potential to achieve success as entrepreneurs in the future.

Conflict of Interest

The author declares that there is no conflict of interest.

Acknowledgments

The research would like to thank the Faculty of Education, Chiang Mai University, for providing funding to disseminate these research findings, allowing this knowledge to be more widely accessible and applicable.

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