Research Article

A JOURNEY TO ENHANCE YOUTH IN ENTREPRENEURSHIP: INVESTIGATION OF ENTREPRENEURIAL COMPETENCIES AND DEVELOPMENT NEEDS

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Abstract

According to United Nations Sustainable Development Goals, entrepreneurship, especially among youths, has been the key driving force for the world economy and social change. This is important as 52% of the world's youth is present in the Asia Pacific region. While Thailand has the second-highest level of entrepreneurial intention at 31.9%, the country suffers from a lack of good quality entrepreneurial education. The previous literature has not revealed enough on entrepreneurial competencies among youths, as well as opportunities for development needs. Therefore, uncovering youth entrepreneurial competencies and development opportunities can help unleash the potential of youth entrepreneurship. This study aims to 1) confirm the factors and indicators of entrepreneurial youth competencies, 2) identify the development needs among youths at the university level to provide recommendations on how to design effective learning for entrepreneurial education, and 3) the results will support the creation of the youth entrepreneurship learning program. The population of the study is made up of undergraduate students from universities in Thailand, and 689 effective responses were received in the survey. In accordance with confirmatory factor analysis (CFA), the 6 aspects of entrepreneurial youth competencies, consisting of opportunity, relationship, conceptual, management, strategic, and commitment competency, are confirmed since the empirical data is consistent with the theoretical measurement. However, there are 3 competencies; opportunity, relationship, and commitment that were found to have a significant causal relationship with entrepreneurial intentions from logistics regression analysis. The key priority needs for driving effective entrepreneurial education are personal learning assistance, design thinking integrated with content knowledge, and pedagogy through

mobile learning applications. The prototype of the mobile learning application with design thinking and personal learning assistant is developed and proposed to promote entrepreneurial competencies among youths.

Keywords: Youth Entrepreneurship, Entrepreneurial Competencies, Development Needs, Design Thinking

Introduction

Entrepreneurship is regarded as a major contributor to the increase of employment rates, human and natural resource productivity, and driving economic growth (Hall et al., 2010; Alvani, 2011; Ngorora-Madzimure, 2016; Fortunato, 2014; Lang & Fink, 2018; Grivokostopoulou et al., 2019; Bauman & Lucy, 2019; Bigos & Michalk, 2020). The reason for this is that entrepreneurs come to the market with innovation in the form of products, services, and processes with which they can enhance the overall efficiency of humans and natural resources (Ataei et al., 2020). Entrepreneurs wouldn't be able to achieve their objectives without strong competencies, especially in a world centered around digital connectivity and technology (Kruger & Steyn, 2020). Moreover, entrepreneurship is required to fuel growth in developing countries (Ataei et al., 2020; Kruger & Steyn, 2020). In recent decades, entrepreneurship has become a preferred career option among young people as there is an increasing number of young iconic entrepreneurs like Mark Zuckerberg of Facebook or Michelle Dell of Dell who became successful in their twenties. (Zhao et al., 2021)

According to United Nations Sustainable Development Goals (SDGs), entrepreneurs, especially in younger groups, have been the key driving force for the world's economic growth as well as social change (United Nations, 2019). One of the priorities on national agendas is the promotion of entrepreneurship, meaning that governments in each country are trying to equip their population with the required competencies to become successful entrepreneurs.

The youth population (15-24 years old) of the world is projected to increase to 1.4 billion people in 2050, an increase of 16% when compared to 2020. 30% of Asian youths are unemployed (Global Entrepreneurship Research Association and Bangkok University, 2020). The growth of youth entrepreneurship is a key indicator for a modernized economy and ensuring a full employment rate, this is because the businesses of youths tend to be highly innovative, quick to respond to changing markets, and flexible when approaching new, untapped market segments. (Ojiaku et al., 2018; Zhartay et al., 2020)

Entrepreneurship requires a strong framework on physical infrastructure, cultural and social norms, as well as commercial and legal infrastructure. Consequently, Thailand's lack of focus on these areas has led to a shortage of high-quality entrepreneurial education. This has revealed an issue on entrepreneurial capacity, which is one of the three major limiting factors for entrepreneurship in Thailand (Global Entrepreneurship Research Association and Bangkok University, 2020). Entrepreneurial capacity refers to basic entrepreneurial knowledge, creativity, business administration skill sets, and persistent attitudes which are needed to become a successful entrepreneur.

Previous studies on Thai youth entrepreneurship have not unveiled the essential components of entrepreneurial competencies that are needed to become successful and identified the priority entrepreneurial education needs among youths. The key questions are " What are the required components of entrepreneurial competencies among youths?", " What are the expected vs actual entrepreneurial development needs?", and " What would be the most effective pedagogy and instructional technology to be used to promote entrepreneurial competencies and intentions?"

This study reveals the factors/ indicators for each of the 6 aspects of entrepreneurial competency among an unexplored group of undergraduate students in Thailand. It also opens new perspectives on priority need assessment in entrepreneurial education within higher education settings in a developing country. Furthermore, there is a causal link between entrepreneurial competency and entrepreneurial intention among this group. With the combination of all those results, it will be a good starting point to systematically design a learning journey that allows undergraduate students to become successful entrepreneurs.

Research Objectives

This study aims to 1) confirm the factors and indicators of entrepreneurial youth competencies, 2) identify the development needs among youths at the university level to provide recommendations on how to design effective learning for entrepreneurial education, and 3) the results will support the creation of the youth entrepreneurship learning program.

Research Questions

Youth entrepreneurship is becoming more important when it comes to top economic progression in developing countries like Thailand. Additionally, there has been a lack of clear understanding of what the required components for entrepreneurial youth competency are, as well as the existing needs to develop them. As a result, this has raised three research questions:

1. What are the key components or factors of entrepreneurial youth competency for undergraduate students?

2. What are the gaps between current entrepreneurial competency education and the expectations among undergraduate students?

3. What recommendations are there for developing entrepreneurial education in university settings through the selection the instructional techniques and technology which can increase effectiveness?

Hypothesis

There are 3 main hypotheses for this research study: 1) youth entrepreneurial competencies consist of 6 entrepreneurial competencies as per prior studies on other populations, 2) entrepreneurial competencies among youths can be a predictor of entrepreneurial intentions as found in the literature, and 3) there are considerable gaps in the existing learning needs of entrepreneurial education among youths.

Research Framework

Previous research studies have contributed to the formation of a research framework with an emphasis on the indicators for each of the 6 entrepreneurial competencies, and ultimately predicts entrepreneurial intention as seen in Figure 1.

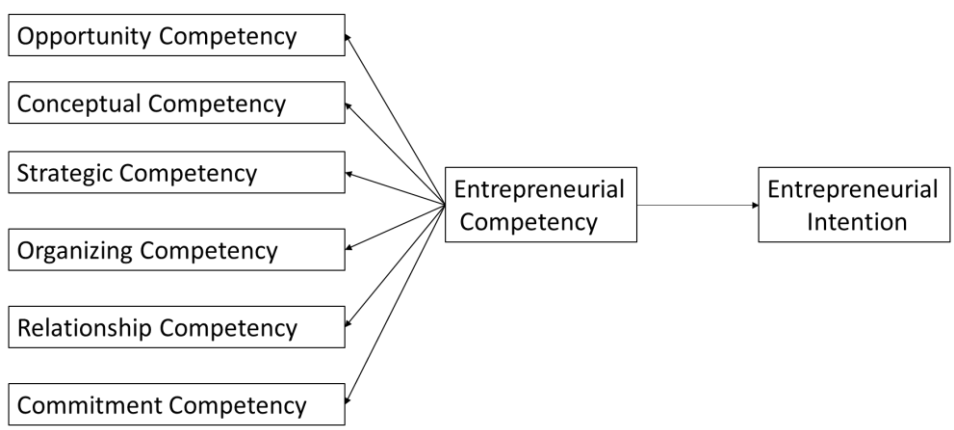

Figure 1. Research framework

Methodology

The population of this study included undergraduate students from across the nation of Thailand and the sample size was calculated based on multi-stage sampling. This was done initially by dividing them into 4 regions; 1) North, 2) Northeast/East/ West, 3) Central, and 4) South and subsequently selecting 2 universities within each region with purposive sampling based on; 1) location within the defined region, 2) universities with business administration courses, and 3) accessible and convenient locations to collect data. The total sample size of 689 students meets the requirement to represent Thai university students based on calculations from the Krejcie and Morgan formula with a significance level of 95% and a standard error of 5% while confirmatory factor analysis (CFA) requires 10 samples per question multiplying by 40 questions equal to 400 samples. Thus, this study had 689 samples, not much more, as samples are countable.

Regarding the first objective to uncover key factors of entrepreneurial competencies, the independent variables are indicators influencing each of the 6 factors of entrepreneurial competencies. The data was collected by using a self-reported questionnaire comprised of 40 questions, adapted from Man et al. (2002) and a 5-point Likert scale response was measured. However, the entrepreneurial intention was asked on a nominal scale. The questionnaire was scored on the index of item objective congruence (IOC) from 0.80 to 1.00, higher than the minimum score at 0.50 by 5 subject matter experts to test content validity. After that, the questionnaire was validated for reliability with 50 respondents to test internal consistency in accordance with Cronbach's alpha. The overall internal consistency score of "Entrepreneurial Competency" is 0.956 with details of each aspect; opportunity competency at 0.804, relationship competency at 0.825, conceptual competency at 0.759, organizing competency at 0.907, strategic competency at 0.897, and commitment competency at 0.901. Confirmatory factor analysis (CFA) was then used to confirm key factors and indicators, followed by logistics regression analysis to validate the causal relationship between entrepreneurial competencies and intention since the entrepreneurial intention as dependent variable is categorized as nominal scale.

The second objective is to investigate the gaps between current entrepreneurial competency education and the expectations among undergraduate students. Twenty-two questions were measured with a 5-point Likert scale response. The questionnaire was scored on the index of item objective congruence (IOC) from 0.80 to 1.00, higher than the minimum score at 0.50 by 5 subject matter experts to test content validity. After that, the questionnaire was validated for reliability with 50 respondents to test internal consistency in accordance with Cronbach's alpha. The overall score of

the entrepreneurial education need assessment is 0.922 with details of each aspect; entrepreneurial competency content knowledge at 0.781, design thinking at 0.805, learning through a mobile application at 0.771, and personal learning assistant at 0.863. The data was analyzed with PNI modified. A modified priority need index (PNI) is an analysis method that calculates the difference between I (Importance) and D (Degree of Success) and divided by D (Degree of Success) to identify the difference between the reality (what is) vs. the expectation (what should be) and then prioritize the importance of each gap. (Wongwanich, 2015)

The third objective is to analyze and integrate the learning from factors of competencies and need assessment gap of youth entrepreneurial education to design an instructional technology to promote youth entrepreneurial competencies.

Results

The main purposes of this study are to confirm 1) the factors and indicators of entrepreneurial youth competencies, 2) identify the development needs among youths at the university level to provide recommendations on how to design effective learning for entrepreneurial education, and 3) the results will support the creation of the youth entrepreneurship learning program.

Demographic Profile

Most of the respondents were female students (73.15%) and the average age is 19.64 years old. Many of them (55.15%) were currently in their 3rd and 4th years of studying in higher education. 33.53% of students had a cumulative GPA in the range of 3.51-4.00, followed by 31.79% of students who had a cumulative GPA range of 3.01-3.50. In terms of their entrepreneurial intention, more than half of them (58.78) had the intention to become an entrepreneur after graduation.

Table 1. Demographic information of respondents

General Information	Total (689 respondents)	Percentage
1. Gender		
- Male	185	26.85
- Female	504	73.15
2. Age		
- 18 years old	121	17.56
- 19 years old	188	27.29
- 20 years old	197	28.59
- 21 years old	183	26.56
3. Years in Higher Education		
- First Year Student	128	18.58
- Second Year Student	181	26.27
- Third Year Student	187	27.14
- Fourth Year Student and above	193	28.01
4. Cumulative Grade Point Average (GPA) under the system of maximum 4.00		
- Below 2.00	8	1.16
- 2.01 – 2.50	83	12.05
- 2.51 – 3.00	148	21.48
- 3.01 – 3.50	219	31.78
- 3.51 – 4.00	231	33.53
5. Intention to become an entrepreneur after graduation		
- Yes	405	58.78
- No	284	41.22

Confirmatory Factory Analysis of the 6 aspects of entrepreneurial competencies

Figure 2 portrays the model for second-order confirmatory factor analysis (SCFA), the analysis technique used to confirm factors/indicators from the theoretical framework. On the far left is the second order of the 6 entrepreneurial factors with factor loading ranging from 0.48 to 0.96. The following one is the first-order factor depicting the indicators for each factor with factor loading ranging from 0.38 to 0.85.

The total amount of indicators for the first-order factor was 40 questions; 1) Opportunity Competency (CO) had 4 questions and showed factor loading of indicators from 0.60 - 0.74, 2) Relationship Competency (CR) had 6 questions with factor loading from 0.38 to 0.74, 3) Conceptual

Competency (CC) had 7 questions with factor loading from 0.32 to 0.71, 4) Management Competency (CM) had 10 questions with factor loading from 0.54 to 0.74, 5) Strategic Competency (CS) had 9 questions with factor loading from 0.54 to 0.78, and 6) Commitment Competency (CF) had 4 questions with factor loading of indicators from 0.64 to 0.85, as shown in Table 2. The P-value result of this confirmatory factor analysis model is 0.00, as per Table 2, indicating that this model fits well with the theoretical model for the case that a sample size of more than 250, and the number of questions was more than 30 questions so that significance P-value was expected. (Hair et al., 2006)

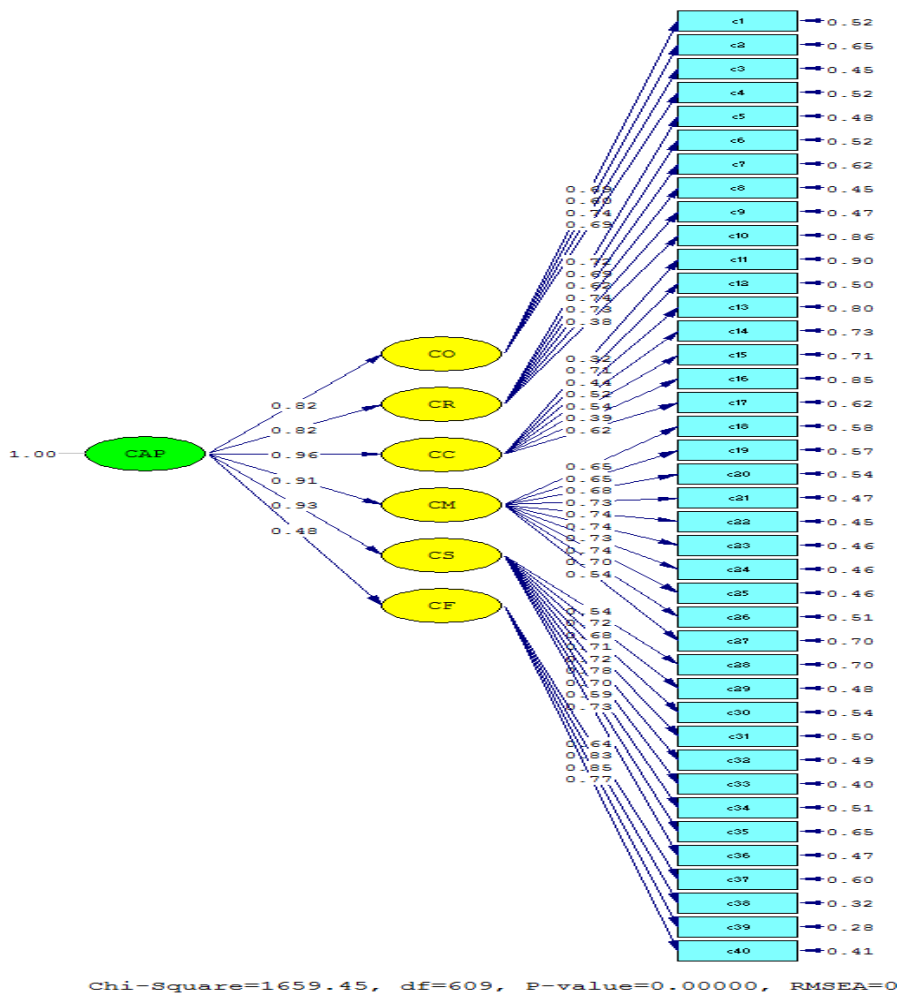

Figure 2. Indicators influencing 6 aspects of entrepreneurial competency

Table 2. Confirmatory factor analysis results for 6 entrepreneurial competencies

Questions	Factor Loading					
	Factor 1: Opportunity Competency (CO)	Factor 2: Relationship Competency (CR)	Factor 3: Conceptual Competency (CC)	Factor 4: Management Competency (CM)	Factor 5: Strategic Competency (CS)	Factor 6: Commitment Competency (CF)
No.1	0.69*	0.72*	0.32*	0.65*	0.54*	0.64*
No.2	0.60*	0.69*	0.71*	0.65*	0.72*	0.83*
No.3	0.74*	0.62*	0.44*	0.68*	0.68*	0.85*
No.4	0.69*	0.74*	0.52*	0.73*	0.71*	0.77*
No.5		0.73*	0.53*	0.74*	0.72*	
No.6		0.38*	0.39*	0.74*	0.78*	
No.7			0.62*	0.73*	0.70*	
No.8				0.74*	0.59*	
No.9				0.70*	0.73*	
No.10				0.54*		

χ^2 =1659.45, df=609, P=0.00, χ^2 /df= 2.72, RMSEA=0.05, SRMR=0.07, GFI=0.90, CFI=0.98, NFI=0.98

Logistics Regression analysis to analyze the influence of entrepreneurial youth competency on entrepreneurial intention

This study used the logistic regression technique to analyze the causal relationship between entrepreneurial competency and entrepreneurial intention among undergraduate students in Thailand. Entrepreneurial intention refers to the interests and determination towards entrepreneurial behaviors, influenced by attitudes and competencies. It is measured by one question on a nominal scale (Yes/No). The majority reported intention to become entrepreneurs (58.78% as in Table 1). Table 3 presents the results from logistic regression analysis on the factors affecting entrepreneurial intention among undergraduate students. It was found that the factors which have a significant causal relationship with entrepreneurial intentions at a significance level of 0.05 are: opportunity competency, relationship competency, and commitment competency (B = 0.910, - 0.557 and 0.924, accordingly). Conversely, conceptual competency, management competency, and strategic competency have an impact on entrepreneurial intention without statistical significance. The group of predictor variables can predict intention at 6.10% according to Cox & Snell R Square, or 10.10% according to Nagelkerke R Square. The predictor equation for entrepreneurial intention is as follows:

$$Logit(y) = -1.731 + 0.910(CO) - 0.557(CR) + 0.172(CC) - 0.334(CM) - 0.339(CS) + 0.924(CF)$$

Table 3. Logistics regression of factors affecting the entrepreneurial youth intention after graduation

Predictor Variables	B	S.E.	Wald	Sig.	EXP(B)	95%CI
Opportunity Competency (CO)	0.910	0.232	15.365*	0.000	2.484	1.576-3.915
Relationship Competency (CR)	- 0.557	0.260	4.575*	0.032	.573	0.344-0.954
Conceptual Competency (CC)	0.172	0.340	0.255	0.613	1.187	0.610-2.313
Management Competency (CM)	- 0.334	0.298	1.252	0.263	0.716	0.399-1.285
Strategic Competency (CS)	- 0.339	0.344	0.972	0.324	0.713	0.364-1.397
Commitment Competency (CF)	0.924	0.194	22.714*	0.000	2.520	1.723-3.685
Constant	- 1.731	0.862	4.035	0.045	0.177	
Cox & Snell R Square=0.061, Nagelkerke R Square= 0.101						

* Significance level at 0.05

Priority Need Assessment of Entrepreneurial Education

Table 4 represents the priority need assessment for entrepreneurial education by use of a modified PNI analysis and it was found that a personal learning assistant had the highest index when comparing reality to expectation at 0.237. This was followed by design thinking for the pedagogy to be integrated into entrepreneurial competency (0.236), entrepreneurial competency content knowledge (0.221), and learning through a mobile application (0.206).

Table 4. Modified Priority Need Assessment of Entrepreneurial Education

Priority Needs	Expectation	Reality	(I-D)	PNI modified	Ranking
Personal Learning Assistant	25.871	20.909	4.962	0.237	1
Design Thinking Process	25.883	20.936	4.946	0.236	2
Entrepreneurial Competency Content	25.980	21.275	4.704	0.221	3
Learning Through Mobile Application	17.577	14.577	3.000	0.206	4

Mobile Learning integrated with design thinking and personal learning assistant

As a result of this research, the prototype of a mobile learning application with design thinking and a personal learning assistant (chatbot) is developed and proposed. This application is a web application, compatible with any learning device. There are 7 lessons: design thinking and 6 competencies with an authentic assignment at the end of each lesson with the aim for students to be able to adapt

design thinking to create product innovation. Competency assessment is embedded with the application. The application is under development and experiment with students in higher education to ensure efficiency and productivity, as shown in Figure 3.

Figure 3. Entrepreneurship Mobile Learning Application

Discussion

This study explored the undiscovered areas of the factors influencing entrepreneurial youth competencies, the cause-effect relationship of entrepreneurial competencies and intention, as well as entrepreneurial youth education need assessment. The intriguing research questions and findings led to the following discussion.

1. The theoretical framework on entrepreneurial youth competencies is confirmed by these findings, these competencies consist of 6 components through confirmatory factor analysis (CFA) in analyzing the second-order factor. Each factor significantly impacts overall entrepreneurial youth competency at a significance level of 0.05. The component with the highest factor loading is conceptual competency, followed by strategic competency and management competency. Key differences were portrayed in the ranking of entrepreneurial competency versus business owners. In a study conducted by Xiang (2009), these business owners all ranked top 3 in competencies such as commitment, opportunity, and conceptual competency. However, youth entrepreneurship placed a higher value on strategic competency and management competency since younger groups may think it is better to have a strong strategic direction when starting the business. This is consistent with what Mkrtchyan and Galoyan (2020) found in that young entrepreneurs perceive their own lack of competency when it comes to

conceptualizing new business ideas and management experiences. Furthermore, Chauke and Obadire (2020) mentioned that strategic ability is key for young entrepreneurs when starting businesses.

2. All of the 6 competencies can predict entrepreneurial intention but there are only 3 competencies with statistical significance: opportunity competency, relationship competency, and commitment competency. This has shed new light on how competency can predict entrepreneurial intention due to the fact that most of the prior research focuses on characteristics as a key predictor of entrepreneurial intention. In addition, there is a prior study showing that innovativeness has a strong causal relationship with entrepreneurial intention (Wathanakom et al., 2020). Innovativeness supports the opportunity competency in defining new business opportunities. Furthermore, Ibidunni et al. (2020) mentioned that locus of control among university students can effectively predict entrepreneurial intention and this characteristic is linked to commitment competency. The reason for this is that locus of control has demonstrated commitment to entrepreneurship among youths. However, relationship competency became an unmentioned predictor, meaning that this is a new contribution to this academic field.

3. The need assessment survey discovered that a personal learning assistant, design thinking, entrepreneurial content knowledge and mobile learning are regarded as high priority factors in education. Countries in Asia like Korea, China, and India have integrated design thinking into education (Koh et al., 2015). Furthermore, Singapore is among the first countries to blend the design thinking process with business management subjects (Gabriel & Markus, 2019). This has inspired the development of mobile learning applications with design thinking and personal learning assistant to promote entrepreneurial competencies.

Future Research

The future possible research opportunities from this study are as follows:

1. The development of a competency-based learning curriculum and learning design that could be used to promote entrepreneurial competency and intention among undergraduate students. However, this would require full systematic research validation before being able to be rolled out to entire countries or regions.

2. A longitudinal study among undergraduate students to understand the impact of competency-based entrepreneurial education after graduation.

3. The research result can be applied to develop the integration of design thinking pedagogy and personal learning assistance in a mobile learning platform to enhance youth entrepreneurial competencies.

Conclusions

This study presents unexplored entrepreneurial youth competencies and confirmed that the theoretical framework of adults can be applied to university students. Furthermore, it also added new knowledge in terms of how competency can predict entrepreneurial intention since most of the previous research focused mainly on characteristics, but competency can also predict entrepreneurial intention. This research would have fewer benefits if it could not be applied to the learning design for entrepreneurship. Therefore, it concluded with a need assessment and looked at how all priority needs can be integrated using the right balance in order to promote better entrepreneurial education.

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