Factors Affecting Students' Entrepreneurial Intentions in Thai Nguyen Province, Vietnam

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Abstract
Drawing upon theories of entrepreneurial intention, this study discerned various clusters of factors that influence entrepreneurial intent, namely: (1) self-esteem, (2) creativity, (3) self-control, (4) achievement, (5) education, and (6) knowledge enhancement. To gauge the effects of these factor groups, the study utilized both Exploratory Factor Analysis (EFA) and multiple regression analysis. As a result of this investigation, the authors put forth several recommendations aimed at bolstering the entrepreneurial aspirations of students in Thai Nguyen Province going forward.

Keywords: Students', Entrepreneurial, Vietnam

1. Introduction
Thai Nguyen Province holds a strategically vital position within the Northern Midland and Mountainous region. As reported by the Provincial People's Committee of Thai Nguyen in 2023, despite the challenges posed by the Covid-19 pandemic, the province has attained notable achievements. These include a 5% economic growth rate (GRDP), an export value amounting to 25 billion USD, and a total social investment capital of 45.3 trillion VND, with domestic and private investments contributing 36 trillion VND. Moreover, proactive measures such as administrative procedure reforms and enhancements to the investment environment have yielded positive outcomes. In 2023 alone, Thai Nguyen Province issued investment certificates for 25 projects, boasting a combined registered capital of 436 million USD. This influx of investment is poised to serve as a substantial catalyst for economic advancement within the province.

As a consequence of the economic shifts witnessed in 2023, there were 983 newly established enterprises in Thai Nguyen Province, marking a 0.8% increase compared to the preceding period, with a cumulative registered capital of 7.2 trillion VND (Provincial People's Committee of Thai Nguyen, 2023) [17]. The attainment of these outcomes largely reflects the entrepreneurial zeal prevalent in the region, particularly among students. To foster entrepreneurial endeavors among university students in Thai Nguyen Province, research has pinpointed five influential factors shaping entrepreneurial intentions: self-esteem, creativity, self-control, achievement, educational attainment, and knowledge augmentation. These findings serve as robust groundwork for devising strategies aimed at nurturing entrepreneurial aspirations among students at Thai Nguyen University.

2. Theoretical Framework and Research Methodology
2.1 Theoretical Framework
2.1.1 Concept of Entrepreneurial Intention
a. Concept of Entrepreneurship
Entrepreneurship has been defined by Low & MacMillan (1988) [9] as the act of establishing a new business. Bygrave (2002) [4] contends that entrepreneurship is a journey toward becoming an entrepreneur rather than a fixed state or outcome. Subsequently, Bruyat and Julien (2001) [3] propose that entrepreneurship is a multifaceted concept, encompassing various interpretations ranging from the narrow notion of initiating a new venture to a broader perspective involving attitudes towards self-reliance, innovation, and risk-taking. Consequently, there exists a divergence of opinions regarding whether entrepreneurship should be perceived as a process or a singular event. Nonetheless, scholars concur that individuals engaged in entrepreneurial pursuits possess clear intentions and objectives, and the act of becoming an entrepreneur result from a
deliberate decision-making process (Kruger et al., 2000) [8]. Thus, to investigate entrepreneurial behavior effectively, it is imperative to examine the formation of entrepreneurial intentions.

b. Concept of Entrepreneurial Intentions

The theory of intention originates from social cognitive theory, first proposed and developed by Bandura (1986) [2], who constructed a theoretical framework for understanding, predicting, and altering human behavior. Intention is considered as ‘the motivation of an individual to exert effort towards a consciously planned course of action or decision’ (Conner and Armitage, 1998) [5]. Entrepreneurial intention is often defined as the desire of an individual to create their own entrepreneurial venture (Cran, 1996) or to start a business (Krueger, Reilly, and Carsrud, 2000) [8]. Thompson defines entrepreneurial intention as the self-awareness of an individual intending to establish a new entrepreneurial venture and consciously planning entrepreneurship at a future point in time (Thompson, 2009) [13]. Alternatively, it can be understood as ‘the psychological progression of an individual in desiring to start an entrepreneurial venture or create a new core value for their organization’ (R. D. Remeikien and G. Startiene, 2013) [18]. Therefore, predicting entrepreneurial intention through attitude research is entirely appropriate. Entrepreneurial intention can be measured in various ways: From the perspective of behavioral intention and from the perspective of self-prediction. Armitage and colleagues (2001) add a third perspective, from a desire standpoint. Statistical analysis shows that questions related to behavioral intention have a high predictive power for actual behavior (Armitage and colleagues, 2001).

2.1.2 Research Models of Entrepreneurial Intention

The Theory of Planned Behavior (TPB)
The Theory of Planned Behavior originates from the Theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen during the period of 1975–1980 (Ajzen & Fishbein, 1980) [1]. This theory consists of three main components: 1) Behavioral Intention (BI), 2) Subjective Norms (SN), and 3) Attitudes (A). The more positive the attitude towards a behavior and the greater the subjective norms regarding that behavior, the stronger the intention to perform the behavior. If the intention is high, the likelihood that the individual will perform the behavior is also high.

Shapero and Sokol’s Entrepreneurial Event Model (EEM)
This model assumes that inertia guides human behavior until there are some ‘disruptive’ events that release previously unintended behavior. For instance, a substitute event such as job loss may alter perceptions towards the desire for entrepreneurship. Shapero and Sokol (1982) [24] classify life-changing events into three categories: First, negative changes like being laid off, humiliated, angry, depressed, reaching middle age, or divorce. Second, transitional periods such as high school graduation, college graduation, completion of military service, or parole/release from prison. Particularly, this second type is of particular interest for entrepreneurship education programs when students often lack clear ideas about what they want to do after graduation. The third type involves positive influences, termed as positive impacts from partners, mentors, investors, or customers.

The Entrepreneurial Attitude Orientation (EAO) model;
Robinson et al. (1991) [19] constructed the Entrepreneurial Attitude Orientation (EAO) model comprising four component scales as follows:

- Self-esteem in entrepreneurship (Self-esteem_SE) relates to an individual’s self-esteem and perception of their capabilities regarding their entrepreneurial endeavors (Robinson, Stimpson, Huefner, & Hunt, 1991) [19].
- Innovation in entrepreneurship (Innovation_INN) pertains to the perception and action based on entrepreneurial activities in novel and unique ways.
- Personal Control (PC) is associated with an individual’s perception of control and influence over their entrepreneurial pursuits.
- Achievement/ Accomplishment in entrepreneurship (Achievement_ACH) refers to specific outcomes related to the initiation and development of a business. According to Robinson, ‘the higher the value of each scale component, the higher the individual’s entrepreneurial prediction’ (Huefner, Hunt, & Robinson, 1996) [7]. Huefner, Hunt, and Robinson (1996) [7] found that EAO successfully distinguished between entrepreneurs and non-entrepreneurs in several studies. Thus, achievement, innovation, personal control, and self-esteem are closely related to entrepreneurial behaviors.

2.1.3 Basis for formulating research hypotheses

a. The relationship between self-esteem and entrepreneurial intention
McGee et al. (2009) [12] argues that the concept of an individual’s self-esteem in entrepreneurship is based on a social cognitive approach, simultaneously examining the dynamic interaction between the individual and the environment by explaining the cognitive, emotional, and motivational processes related to an individual’s decision to engage in entrepreneurial activities and how this process is shaped by environmental and market factors.

b. The Relationship between Creativity and Entrepreneurial Intention
Creativity is closely associated with entrepreneurial spirit. In 1934, Schumpeter viewed entrepreneurs as agents of innovation. Many researchers have emphasized the correlation of creativity with new and small businesses. Therefore, creativity is seen as representative of the extent to which an individual promptly applies new ideas (Rogers, 1995) [20].

c. The relationship between self-control and entrepreneurial intention
RoSEer (1966) [21] made a significant contribution to entrepreneurial psychology by introducing the Locus of Control (LoC) model. His theory has been widely used in measuring the control beliefs of entrepreneurs and startup managers. By utilizing two constructs, it was shown that female entrepreneurs have a significantly higher internal locus of control belief compared to the general female population (PaSEerson et al., 2012) [16].

d. The Relationship between Achievement and Entrepreneurial Intention
Many scholars consider factors such as money, wealth, power, status, reputation, and achievement as entrepreneurial motivations (Mc Clelland, 1987) [10]. They argue that along with the endeavor to increase wealth, individuals also have various other needs and motivations such as security, passion, authority, challenge, and the
realization of potential. This implies that people aspire to achieve at least one or more goals in their work. Particularly, theories of achievement motivation among entrepreneurs and managers suggest the presence of both basic and higher-order needs in human activities (McClelland and Winter, 1969)\(^{[11]}\).

The Relationship between Education Level, Knowledge Enhancement, and Entrepreneurial Intention

Schlaegel & Koenig (2014)\(^{[22]}\) synthesized studies on entrepreneurship education and found that the majority of research is currently conducted at the university level. While there are very few studies at other educational levels such as high school, vocational school, and graduate school. The authors believe that expanding the scope of research to impact different target groups will be a promising research direction.

Research Hypotheses

Hypothesis H1: Self-esteem (SE) positively influences entrepreneurial intention (EI).

Hypothesis H2: Creativity (CR) positively influences entrepreneurial intention (EI).

Hypothesis H3: Self-control (SC) positively influences entrepreneurial intention (EI).

Hypothesis H4: Achievement (AC) positively influences entrepreneurial intention (EI).

Hypothesis H5: Education level and knowledge enhancement (EK) positively influence entrepreneurial intention (EI).

**Table 1: Constructing Scales for Research Variables in the Model**

<table>
<thead>
<tr>
<th>Encode</th>
<th>Criterion</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE1</td>
<td>It would be a failure if the business plan does not proceed.</td>
<td>McGee et al. (2009)(^{[12]})</td>
</tr>
<tr>
<td>SE2</td>
<td>Feeling insecure when encountering successful entrepreneurs.</td>
<td></td>
</tr>
<tr>
<td>SE3</td>
<td>Feeling uncomfortable when unsure about what others think about oneself.</td>
<td></td>
</tr>
<tr>
<td>SE4</td>
<td>Feeling inferior to colleagues</td>
<td></td>
</tr>
<tr>
<td>CR1</td>
<td>To succeed in business, it takes time to develop new opportunities.</td>
<td>Conner &amp; Armitage (1998)(^{[3]}); Bygrave (2002)(^{[4]})</td>
</tr>
<tr>
<td>CR2</td>
<td>Seeking new challenges in business is crucial.</td>
<td></td>
</tr>
<tr>
<td>CR3</td>
<td>To succeed in business, one needs to break free from outdated ideas.</td>
<td></td>
</tr>
<tr>
<td>CR4</td>
<td>Having unique ideas is important for successful business operations.</td>
<td></td>
</tr>
<tr>
<td>SC1</td>
<td>Devoting ample time to planning personal activities</td>
<td>Low &amp; MacMillan (1998)(^{[9]}); Remeikien et al. (2013)(^{[18]})</td>
</tr>
<tr>
<td>SC2</td>
<td>Effective work ability creates many opportunities in business</td>
<td></td>
</tr>
<tr>
<td>SC3</td>
<td>Always striving in various circumstances</td>
<td></td>
</tr>
<tr>
<td>SC4</td>
<td>Actively participating in community activities to establish business relationships</td>
<td></td>
</tr>
<tr>
<td>SC5</td>
<td>Avoiding recklessness, lack of calculation</td>
<td></td>
</tr>
<tr>
<td>AC1</td>
<td>Have been successful in some areas</td>
<td>Remeikien et al. (2013)(^{[18]}); Thompson (2009)(^{[13]})</td>
</tr>
<tr>
<td>AC2</td>
<td>Success requires no procrastination</td>
<td></td>
</tr>
<tr>
<td>AC3</td>
<td>Desiring success in the future rather than past achievements</td>
<td></td>
</tr>
<tr>
<td>AC4</td>
<td>The most important thing is to find capable partners who are ready to accompany you.</td>
<td></td>
</tr>
<tr>
<td>EK1</td>
<td>Having a good level of education is essential for entrepreneurship</td>
<td>Huefner et al. (1996)(^{[7]}); Robinson et al. (1991)(^{[19]}); McNaughton &amp; Armitage (2010)(^{[14]})</td>
</tr>
<tr>
<td>EK2</td>
<td>Regularly enhancing knowledge to stay updated with information</td>
<td></td>
</tr>
<tr>
<td>EK3</td>
<td>Participating in specialized and management-related courses</td>
<td></td>
</tr>
<tr>
<td>EK4</td>
<td>Exploring numerous opportunities through classes, workshops, and training sessions.</td>
<td></td>
</tr>
<tr>
<td>EK5</td>
<td>Receiving encouragement from mentors</td>
<td></td>
</tr>
<tr>
<td>EI1</td>
<td>Ready to do whatever it takes to become a business owner</td>
<td>Referencing experts</td>
</tr>
<tr>
<td>EI2</td>
<td>Making utmost efforts to establish and operate a business</td>
<td></td>
</tr>
<tr>
<td>EI3</td>
<td>Thoughtfully considering entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>EI4</td>
<td>Having future entrepreneurial plans</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled by author

### 2.2 Research Methodology

**Data Entry and Management:** The data collected through structured questionnaires were encoded and entered into the system. This data was then imported and analyzed using SPSS software. Parameters were validated through the Cronbach Alpha coefficient, and phenomena such as autocorrelation, multicollinearity, and testing for missing variables in the estimation model were performed.

**Data Encoding:** Data encoding followed the principles outlined by Newton and Rudestam (1999).

**Scale Testing:** The reliability of the scale was assessed using the Cronbach's Alpha reliability coefficient and exploratory factor analysis (EFA). If the Cronbach's Alpha coefficient of a factor falls between 0.7 and 0.8, it is considered acceptable, while values between 0.8 and 1 indicate good reliability (Hair et al., 1998)\(^{[6]}\).

**Exploratory Factor Analysis (EFA):** EFA is a technique belonging to the group of interdependence multivariate analysis techniques, meaning there are no dependent or independent variables; instead, it relies on the intercorrelation between variables. EFA is used to reduce a set of k observed variables into a set of F (F < k) meaningful factors. This reduction is based on the linear relationship of factors with primitive variables (observed variables). The principal components analysis method paired with variable rotation is the most commonly used approach. According to Hair et al. (1998)\(^{[6]}\), factor loading is an indicator to ensure the practical significance of EFA. Factor loading > 0.3 is considered the minimum threshold; factor loading > 0.4 is considered important; and factor loading > 0.5 is considered
practically significant. The conditions for exploratory factor analysis must meet the following requirements: Factor loading > 0.5
0.5 ≤ KMO ≤ 1: The Kaiser-Meyer-Olkin (KMO) coefficient is used to assess the appropriateness of factor analysis. A high KMO value indicates that factor analysis is appropriate.
Bartlett's test is statistically significant (Sig. < 0.05): This is a statistical test used to examine the hypothesis that variables are uncorrelated in the population. If this test is statistically significant (Sig. < 0.05), it indicates that the observed variables are correlated in the population.
Percentage of Total Variance > 50%: Indicates the percentage of variance of the observed variables. In other words, if the variance is 100%, this value indicates how much of the group of interrelated variables is explained by factor analysis and is presented as a few basic factors.
In this study, to understand the relationship between the influencing factors of entrepreneurial intention (independent variables) and entrepreneurial intention itself (dependent variable), the researcher utilized a multiple regression model.
Research Sample: The sample size is typically calculated using the formula \(n \geq 50 + 8p\), where \(n\) is the minimum required sample size and \(p\) is the number of independent variables in the model. Thus, according to the formula, with 5 independent variables in the model, the minimum required sample size is 90. Based on these considerations, the study distributed 300 survey forms, resulting in 220 valid responses.
Research Participants: Based on the scale construction and the research objectives, the survey targets undergraduate and graduate students at universities, as well as participants in entrepreneurship training programs within the geographical area of Thai Nguyen province.
Survey Methodology: The study employs a convenience sampling method to collect data. The author utilized a voluntary participation approach, encouraging respondents to answer voluntarily and providing the option to refuse participation at any time. The survey methods employed include telephone calls for explanation and sending Google Docs links via email, as well as face-to-face interviews. Additionally, the author emphasized the voluntary nature of participation, explained the confidentiality of information, and provided detailed instructions on how to answer the questions."

3. Research Results
3.1 Cronbach’s Alpha Test Results
To conduct factor analysis, it is necessary to first assess the reliability of the measurement scale through the Cronbach’s alpha coefficient and the total inter-item correlation coefficient. For measurement scales with a Cronbach’s alpha coefficient \(> 0.6\), they are considered acceptable, and variables with total inter-item correlation coefficients less than 0.3 will be excluded.
The research results indicate that the Cronbach’s Alpha coefficient for the measurement scale of the largest component is 0.858, and the smallest is 0.734. Thus, all Cronbach’s Alpha coefficients are \(> 0.6\), and the variables have inter-item correlations \(> 0.3\). Therefore, the variables meet the requirements for conducting exploratory factor analysis (EFA).

3.2 Results of Exploratory Factor Analysis (EFA)
The KMO (Kaiser-Meyer-Olkin) measure is 0.825, indicating that the data are suitable for conducting EFA. Additionally, we have a Bartlet's test of sphericity with a P-value of 0, suggesting that the variables are correlated within the overall dataset. Also, through exploratory factor analysis (EFA), we have an explained variance of 62.025%, meaning that the extracted factor explains 62.025% of the variation.

<table>
<thead>
<tr>
<th>Component Matrix</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI1</td>
<td>.783</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI4</td>
<td>.762</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI2</td>
<td>.751</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI3</td>
<td>.750</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: According to the calculations by the author
From the results, we can see that the observed variables have converged into a group, and all components are greater than 0.5. We name this factor group “Entrepreneurial Intention,” denoted by “EI.” Therefore, we have met the conditions to proceed with regression analysis.

Results of Regression Analysis

### Table 4: Regression Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.012</td>
<td>0.267</td>
<td></td>
<td>0.046</td>
<td>0.963</td>
</tr>
<tr>
<td>SC</td>
<td>0.209</td>
<td>0.043</td>
<td>0.235</td>
<td>1.913</td>
<td>0.000</td>
</tr>
<tr>
<td>SE</td>
<td>0.116</td>
<td>0.038</td>
<td>0.165</td>
<td>0.909</td>
<td>0.002</td>
</tr>
<tr>
<td>CR</td>
<td>0.263</td>
<td>0.054</td>
<td>0.269</td>
<td>1.870</td>
<td>0.000</td>
</tr>
<tr>
<td>EK</td>
<td>0.236</td>
<td>0.047</td>
<td>0.259</td>
<td>1.976</td>
<td>0.000</td>
</tr>
<tr>
<td>AC</td>
<td>0.179</td>
<td>0.041</td>
<td>0.251</td>
<td>1.404</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: According to the calculations by the author

- Through the table above, we observe that the variance inflation factor (VIF) is less than 2. Thus, there is no issue of multicollinearity.
- The test for changes in residual variance was conducted. In the study, the author used the Spearman test, and all independent variables have significance levels (Sig) greater than 0.05. Therefore, we can conclude that the residual variance remains constant.
- Also, based on the table, all independent variables are significant. This indicates that all independent variables influence entrepreneurial intention.

In Thai Nguyen province, there is a concentration of numerous universities and colleges. This area supplies highly skilled labor, fostering many entrepreneurial ideas among students. In 2023, there were 79 entrepreneurial ideas from students in Thai Nguyen province, spanning fields such as economics, healthcare, and business administration. These ideas reflect the entrepreneurial spirit, showcasing innovation in idea implementation and business planning.

To further promote entrepreneurship, Thai Nguyen province has issued several decisions aimed at supporting startups, including financial support, startup consulting, and scientific support. These initiatives serve as significant motivation for students in Thai Nguyen province to develop new entrepreneurial ideas, creating highly innovative products and services to meet societal demands in the coming years. Alongside students, Thai Nguyen University serves as a bridge to drive and develop the innovative entrepreneurship movement. It facilitates the search for and support of creative ideas, startup projects, and the development of the startup ecosystem by connecting various startup support resources such as local departments, enterprises, and investors. This significantly contributes to the development of students’ entrepreneurial ideas.

### 4. Conclusion

Through the research, it is evident that to embark on entrepreneurship, one must first have entrepreneurial intentions. These intentions are influenced by factors such as self-esteem, creativity, self-control, achievement orientation, educational aSEainment, and continuous learning.

Therefore, to enhance entrepreneurial intentions, the author proposes the following solutions:

1. **Self-esteem**: Self-esteem plays a significant role in both general life and entrepreneurial endeavors. It helps align thoughts and actions with societal values and ethical standards in business. Therefore, individuals aspiring to succeed in entrepreneurship need to cultivate and nurture their self-esteem. Managers should also focus on incorporating content related to fostering self-esteem in orientation programs, training sessions, and entrepreneurship platforms.

2. **Creativity**: Success in entrepreneurship requires creativity, which involves providing innovative products, processes, services, technologies, or business models to the market and society. Entrepreneurs should strongly apply innovative ideas with a different mindset to create new products and services that meet emerging customer trends in the global context.

3. **Self-control**: Successful entrepreneurship requires self-control for managing impulses and making rational decisions. To enhance self-control, individuals need exposure to real-life entrepreneurial experiences, providing opportunities for self-reflection, learning, and growth. This will enable aspiring entrepreneurs to gain valuable experience in the field.

4. **Achievement orientation**: Entrepreneurs need to nurture aspirations for success in business. From these aspirations, entrepreneurs can persevere through challenges, make sacrifices, and maintain confidence to continue their journey despite obstacles.

5. **Educational attainment and entrepreneurship education**: Educational qualifications significantly influence entrepreneurial outcomes by helping identify challenges and risks in the entrepreneurial process, enabling individuals to devise the best possible strategies for their ventures. Additionally, with globalization trends deepening, entrepreneurs need both technical knowledge and social knowledge. Through educational activities, individuals with entrepreneurial intentions can nurture their aspirations, supplement their expertise, and grasp market trends to best meet societal needs.

In conclusion, fostering self-esteem, creativity, self-control, achievement orientation, and a culture of continuous learning are essential for enhancing entrepreneurial intentions. By implementing these solutions, individuals with entrepreneurial aspirations can develop their ideas and contribute to economic and social development.

### 5. References


