Effects of Student Entrepreneurs' Perceptions on Environmental Factors and Internal Factors on Entrepreneurial Commitment

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ABSTRACT

Background and Objectives: Recently, there has been a notable increase in the number of student entrepreneurs in Thailand's entrepreneurial landscape. Understanding the factors that influence their commitment to entrepreneurship is crucial for fostering a thriving entrepreneurial ecosystem. The objective of this study is to investigate the influence of environmental and internal factors on the level of entrepreneurial commitment exhibited by student entrepreneurs in Thailand.

Methodology: This study employed a quantitative approach to investigate perceived educational support, structural support, informal network support, and formal network support as primary environmental factors. Additionally, internal factors such as attitude towards failure, perceived capability, and need for achievement were considered. The sample comprised 157 student entrepreneurs from various universities in Thailand, invited to participate via a tailored online questionnaire. The analysis was conducted using the data that was gathered from the participants. Descriptive and inferential statistics were utilized in order to derive significant insights from the data. Descriptive statistics were utilized to summarize the distribution of responses and the characteristics of the participants. To enhance comprehension of the interconnections among the variables and entrepreneurial commitment, a multiple regression analysis was performed.

Main Results: The investigation produced strong conclusions on how environmental and internal factors affect student entrepreneurs' dedication to their businesses. Perceived informal and formal network support were shown to be substantially ($p < 0.05$) linked with entrepreneurial commitment among the environmental factors. This demonstrates how crucial social and networking factors are in determining students' inclination toward entrepreneurship. Two internal factors showed a significant link ($p < 0.05$) with entrepreneurial commitment: the attitude toward failure and the need for achievement. These findings suggest that the psychological components of each individual student entrepreneur are a major determinant of their level of commitment.

Discussions: The results imply that student entrepreneurs' support networks play a critical role in determining how committed they are to their business ventures. Students are more likely to be committed to their businesses if they feel that their formal and informal networks encourage them strongly. These networks may offer guidance, materials, and accessibility to worthwhile opportunities, boosting their confidence and perseverance. Furthermore, an individual's mindset regarding failure and need for achievement are internal characteristics that significantly influence their level of entrepreneurial engagement. Students who have a strong drive for success and a positive outlook on failure are more likely to stick with their business ventures through obstacles and disappointments.

Conclusions: The study identifies key factors influencing Thai student entrepreneurs' commitment to entrepreneurship, emphasizing internal and environmental variables. It underscores the importance of enhancing cooperation networks and mentoring opportunities for student entrepreneurs. Policymakers and educational institutions should prioritize initiatives such as tailored entrepreneurial education programs that address psychological aspects like resilience to failure and the drive for achievement. Recognizing and addressing these factors could foster a more robust entrepreneurial ecosystem in Thailand, supporting the growth of student-led businesses. Further research exploring diverse variables is recommended to refine strategies for nurturing an entrepreneurial culture in the region.

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Introduction

Thailand has implemented the Small and Medium Enterprise Promotion Plan (SME) No. 13th (2023-2027) as its main economic policy, with a focus on driving small and medium enterprises (SMEs) through knowledge, creativity, innovation, and cultural identity. The plan emphasizes the application of information technology and the creation of new products and services to achieve inclusive growth. The government aims to support the development of SMEs at various stages, enabling them to compete globally and contribute to the future structure of the Thai economy (Chomphunuch et al., 2021).

To promote entrepreneurship, the government encourages both existing SMEs and startups that bring innovation and technology. The survival of traditional businesses is prioritized while nurturing emerging businesses. Entrepreneurship education is actively promoted across all age groups, and universities play a crucial role in driving government policies. Universities are urged to facilitate knowledge transfer and provide support, such as funding and activities, to students interested in entrepreneurship. This cultivates entrepreneurial competencies and contributes to the creation of "new economic warriors." (Sriwararom, 2015, p. 120).

The education sector, particularly universities, is recognized as a vital foundation for driving the economy. Universities are encouraged to shift their focus from traditional teaching-learning roles to becoming entrepreneurial universities that emphasize the practical application of knowledge. This transformation involves generating research that addresses the needs of target groups. By fostering an entrepreneurial mindset and becoming centers of innovation, universities can contribute to economic and societal development, aligning with the country's future progress. (Cheevapruk et al., 2018)

These efforts to promote SMEs, startups, and entrepreneurship align with the Thai government's vision of creating a dynamic and competitive economy. By fostering a culture of innovation and entrepreneurship, Thailand aims to leverage its knowledge-driven sectors to drive economic growth, enhance competitiveness in the global market, and build a prosperous future for the country.

Studies conducted abroad have examined the entrepreneurial decisions of university students and identified factors that influence their engagement in business activities. One key factor is entrepreneurial intention, which refers to students perceiving a career in business as their primary choice (Krueger, 2009). However, intention alone does not guarantee entrepreneurial behavior, as experiences and failures may deter individuals from pursuing entrepreneurship. The factor of entrepreneurial commitment acts as a binding force that motivates students to persevere in their entrepreneurial pursuits despite challenges or obstacles (Adam & Fayolle, 2016). Strong willpower, rather than mere intention, is crucial for predicting entrepreneurship (Ajzen et al., 2009).

Numerous factors influence student entrepreneurs' decision-making, according to a study on their new business establishments. These determinants include internal components like attitudes, perspectives, and abilities as well as external ones like social, economic, educational, and policy-related issues (Sulastri et al., 2021). It is critical to comprehend the degree of perception or opinion among businesses because it sheds light on their true wants and conditions. According to Wibowo et al. (2019) and Gelard and Saleh (2011), university student entrepreneurs develop new firms in large part due to factors like structural support, informal network support, educational support, and formal network support. Furthermore, attributes like attitude toward failure, perceived capability and the need for achievement have been shown to impact students' decisions to start new businesses (Chew et al., 2016; Indarti & Kristiansen, 2003; Politis & Gabrielsson, 2007). Developing student entrepreneurship in universities is crucial for fostering businesses that contribute value to the economy and society.

However, in Thailand, research on the factors influencing the commitment of university student entrepreneurs is limited, preventing a clear understanding of the success of startup business support policies and the emergence of a new generation of young entrepreneurs (Retrieved from ThaiLIS Digital Collection database: TDC, 2000-2022). Startup businesses face high risks, with statistics indicating that 75%-90% of startups failure (Cusumano, 2013; Geibel & Manickam, 2021). Moreover, the lack of sufficient knowledge, experience, and a clear business vision among student entrepreneurs leads to ineffective assistance and support from policymakers (Staniewski & Awruk, 2015).

Therefore, studying the factors that affect entrepreneurial commitment among college students in Thailand is crucial, although this area of research is relatively new and limited in scope. Despite many university students expressing an interest in entrepreneurship, a significant number fail to commit and fully dedicate themselves to building successful businesses. Investigating both environmental and internal factors that influence entrepreneurial commitment will provide valuable insights for policymakers aiming to support legitimate student entrepreneurship, benefit the economy, and create value for society.

Literature Review

Entrepreneurial Commitment

Becker (1960) characterizes committed individuals as those who engage in consistent lines of activities. Similarly, Meyer and Herscovitch (2001) define commitment as a "force" that binds individuals to their goals (p. 303). In the field of entrepreneurship, entrepreneurial commitment is closely linked to entrepreneurial intention, which directs a person's attention, actions, and goal setting towards entrepreneurial behavior (Joensuu-Salo et al., 2022; Vamvaka et al., 2020). It signifies a person's readiness and dedication to start a new business venture (Joensuu-Salo et al., 2022; Varamäki et al., 2015). Individuals with high levels of entrepreneurial commitment are more inclined to invest their time, energy, and resources into entrepreneurial activities and are more likely to establish their own firms (Liu et al., 2022). Fayolle and Liñán (2014) also define entrepreneurial commitment as "devoting one's time, energy, financial, intellectual, relational, and emotional resources to a project" (p. 665). In this context, commitment encompasses both goal intentions (involving intellectual, relational, and emotional resources) and actions (requiring time and energy). Initially, when individuals express an interest in entrepreneurial activities, they invest their intellectual, relational, and emotional resources. Subsequently, in the action phase, if they determine that their endeavors align with the business, they channel even more time and energy into their entrepreneurial pursuits. Bruyat and Julien (2001) particularly emphasizes the concept of commitment as a process intertwined with actions, where increased actions indicate higher levels of commitment. Thus, commitment can range from partial to total, depending on the extent of initiated actions.

In this study, we define entrepreneurial commitment as encompassing an individual's readiness, dedication, and willingness to invest their time, energy, and resources into entrepreneurial activities. It is closely related to entrepreneurial intention and plays a crucial role in determining whether an individual will take the necessary steps to start a new business venture. We use the assessment created by Adam and Fayoll (2015), which is based on the three-component commitment model of Allen and Meyer (1990), to assess the degree of entrepreneurial commitment. The affective, continuance, and normative components are all measured by this methodology. An emotional connection and attachment to an organization and its ideals are represented by the affective component. Continuance commitment is based on cost-avoidance and the belief that there are no viable alternatives. On the other hand, normative commitment has to do with moral issues. According to Meyer and Herscovitch (2001), these elements collectively contribute to an individual's commitment profile. They

represent desire, need, and obligation, respectively. Entrepreneurial commitment is a critical determinant of the success and sustainability of entrepreneurial ventures. To foster entrepreneurship and promote entrepreneurial success, it is crucial to understand the factors that influence entrepreneurial commitment. The level of commitment is influenced by a range of factors, including both environmental and internal factors.

Perceptions on Environmental Factors

Environmental factors encompass the external conditions and influences that impact entrepreneurial activities and ventures. These factors significantly shape the opportunities, challenges, and outcomes experienced by entrepreneurs. In this study, we examine four environmental factors, including perceived educational support, perceived structural support, perceived informal network support, and perceived formal network support (Fayolle & Gailly, 2015; Gelard & Saleh, 2011; Liao & Welsch, 2005; Turker & Sonmez Selcuk, 2009; Wibowo et al., 2019).

Perceived educational support encompasses a range of activities, resources, and services offered by educational institutions to nurture and support entrepreneurial aspirations. Numerous studies have explored the relationship between perceived educational support and entrepreneurial commitment, providing valuable insights into the potential impact of educational support on entrepreneurs' commitment levels (Turker & Sonmez Selcuk, 2009). Perceived structural support refers to how entrepreneurs subjectively evaluate the availability and adequacy of tangible and intangible resources, information, guidance, and assistance provided by external entities. This support can take various forms, including financial assistance, access to networks, government policies, and regulatory frameworks (Ambad & Damit, 2016). Perceived informal network support refers to the subjective perception of support received from informal social networks, including friends, family, colleagues, and parents. These networks often provide emotional, informational, and instrumental support to entrepreneurs, which can influence their commitment levels. In contrast, perceived formal network support refers to the perception held by entrepreneurs regarding the availability and effectiveness of supportive resources, such as mentoring, training programs, customers, suppliers, and access to networks, offered by formal institutions, including government agencies, business incubators, experienced consultant, and customers and suppliers (Gelard & Saleh, 2011; Wibowo et al., 2019)

Perceptions on Internal Factors

On the other hand, internal factors refer to the individual characteristics, traits, and resources that influence an entrepreneur's behavior, decision-making, and overall entrepreneurial success. These internal factors play a vital role in shaping an entrepreneur's mindset, capabilities, and commitment. In this study, we examine three internal factors, including attitude toward failure, perceived capability, and need for achievement (Cope, 2011; Indarti & Kristiansen, 2003; Politis & Gabrielsson, 2009).

Attitude toward failure refers to an individual's cognitive and emotional response to failure experiences. It encompasses beliefs, perceptions, and evaluations regarding failure and its implications. Dweck (2006) introduced the concept of a growth mindset, which suggests that individuals who embrace this mindset view failures as valuable learning opportunities. They perceive setbacks as chances to identify areas of improvement and knowledge gaps. In contrast, a fixed mindset tends to foster a fear of failure, discouraging risk-taking. Notably, the adoption of a growth mindset is closely linked to higher levels of academic and career achievement over time, as individuals with this mindset actively seek and thrive on challenges. In the context of entrepreneurship, one's attitude toward failure stands in stark contrast to the fear of failure, representing the inner apprehension that arises when individuals believe they

may not achieve a particular goal. Perceived capability, also referred to as self-efficacy, relates to individuals' assessments of their own ability to effectively perform entrepreneurial tasks and overcome challenges. This concept is rooted in an individual's self-perception of their skills and abilities, as originally proposed by Bandura in 1986. Self-efficacy reflects an individual's innermost thoughts about their preparedness to successfully undertake specific tasks. Substantial research in this field consistently underscores the central role of perceived self-efficacy in shaping human agency, as articulated by Bandura in 1989. Furthermore, it has been shown that individuals with heightened perceptions of self-efficacy related to a particular task are more likely to initiate and persist in pursuing that task, as noted by Bandura in 1992. Lastly, the concept of the need for achievement, initially introduced by McClelland (1961), is a fundamental psychological construct that pertains to an individual's aspiration to excel, tackle challenging tasks, and achieve success through personal efforts.

Effects of Environmental and Internal Factors Influence Entrepreneurial Commitment

From the available literature, there seems to be potential in merging environmental and internal factors within a conceptual model of entrepreneurial commitment.

Perceived Educational Support

The first environmental factor is perceived educational support. According to a number of studies, educational support plays a significant role in fostering entrepreneurial activities and intentions among students. Parnell et al. (1995) conducted research on university student entrepreneurs and found that perceived support from their educational institutions positively influenced their commitment to entrepreneurial endeavors. Trivedi (2016) emphasized the importance of entrepreneurial education within schools, highlighting its role in shaping entrepreneurial intentions. This view is further supported by Hattab (2014), who regarded entrepreneurship education provided by institutions, schools, universities, and postgraduate training programs as a crucial component of education. Gelaidan and Abdullateef (2017) conducted a study in Malaysia's College of Business and discovered a positive correlation between educational support and students' inclination towards entrepreneurship. This correlation was observed among students from diverse cultural backgrounds, including Malaysians, Chinese, Indians, and others. Additionally, Gelard and Saleh (2011) found that students at Accounting Management Colleges considered educational support to be a pivotal factor in developing the intention to start their own businesses. Similarly, in Turkey, PES (Perceived Educational Support) is seen as an important determinant in students' decisions to pursue entrepreneurship, as noted by Turker and Sonmez Selcuk (2009). Therefore, we propose that

H1: Perceived educational support has a positive effect on entrepreneurial commitment.

Perceived Structural Support

Moving on to the second factor, perceived structural support also plays a pivotal role. Turker and Sonmez Selcuk (2009) assert that in addition to the influence of educational support, structural support also plays a pivotal role in shaping individuals' decisions to embark on entrepreneurial ventures. This notion aligns with the finding of Abelson et al. (1982), which underscore the connection between structural support and entrepreneurial intentions and behaviors. In our contemporary landscape, entrepreneurship operates within a multifaceted framework influenced by various social, economic, political, and technological factors. While the current entrepreneurial environment is primarily shaped by economic and political mechanisms, these mechanisms are subject to governance by public, private, and non-

governmental sectors. Consequently, structural support can either present nascent entrepreneurs with opportunities or pose potential challenges. For instance, when barriers obstruct market entry, individuals may be less inclined to pursue their own businesses. Conversely, if they perceive the prevailing conditions as conducive and favorable, they are more likely to venture into entrepreneurship (Turker & Sonmez Selcuk, 2009). Similarly, Saeed et al. (2015) employed the term "perceived institutional support," which conveys a similar concept. In cases where the business environment is favorable, it tends to bolster the propensity for individuals to embrace entrepreneurship (p. 13). Therefore, we propose that

H2: Perceived structural support has a positive effect on entrepreneurial commitment.

Perceived Informal Network Support

The third factor, perceived informal network support, plays a crucial role in shaping entrepreneurial commitment. Birley and Stockley (2000) emphasized that entrepreneurs in the early stages of their entrepreneurial journey heavily rely on informal networks, including relatives and social contacts within their community, to secure the necessary resources for launching their businesses. Aldrich and Cliff (2003) underscored the pivotal role of family members in the initial phases of venture development, advocating for increased recognition of their significance within the entrepreneurship context. Families can serve as both financial and moral pillars for budding entrepreneurs, offering support in both professional and personal dimensions. This multifaceted assistance ultimately influences the entrepreneur's behavior (Anderson et al., 2005). Wibowo et al. (2019) further highlighted the importance of perceived support quality, including the relevance and usefulness of the information received, in positively impacting the establishment of student entrepreneurs' businesses. Therefore, we propose that

H3: Perceived informal network support has a positive effect on entrepreneurial commitment.

Perceived Formal Network Support

Lastly, perceived formal network support is also instrumental in shaping entrepreneurial commitment. According to Casrud and Johnson (1989), aspiring entrepreneurs not only rely on support from their immediate contacts but also draw upon a diverse range of potential relationships, including lawyers, banks, venture capitalists, accountants, professional advisors, scholars, consumers, suppliers, and trade unions, to transform their entrepreneurial ideas into profitable ventures. Greve (1995) argues that when entrepreneurs embark on their business ventures, they often possess limited knowledge of how to operate them effectively, necessitating assistance from established organizations. In this context, organization refers to institutions that offer incentives for various economic activities (Aidis et al., 2008). Kanyan et al. (2020) assert that formal networks are closely linked to entrepreneurial objectives, albeit with a weak yet positive impact on entrepreneurial intentions. These networks encompass banks, institutions, lawyers, economists, consultants, researchers, consumers, and suppliers who play a crucial role in helping entrepreneurs translate their concepts into profitable enterprises. These formal networks typically come into play when entrepreneurs initiate their businesses but lack the comprehensive knowledge necessary to implement their ideas and generate profits. Furthermore, Gelard and Saleh (2011) discovered a positive correlation between perceived support from formal networks and entrepreneurial intentions among university students. Therefore, we propose that

H4: Perceived formal network support has a positive effect on entrepreneurial commitment.

Attitude Toward Failure

Turning to internal factors influencing entrepreneurial commitment, attitude toward failure emerges as a significant factor. Liu et al. (2011) argue that some aspiring entrepreneurs may refrain from starting a business due to the various risks associated with business failure. Entrepreneurship involves not only the mobilization of financial resources, human capital, and equipment during the preparatory phase but also requires confronting numerous challenges and potential crises at any given moment. When individuals consider their own abilities and assess the potential risks of failure, the number of people willing to take the entrepreneurial plunge may significantly diminish. Thus, one's attitude toward failure plays a pivotal role in helping individuals navigate and mitigate these risks. Politis and Gabrielsson (2009) further assert that maintaining a positive attitude toward failure can prove to be a valuable asset for entrepreneurs. Such an attitude enables them to effectively cope with and glean valuable lessons from their mistakes, facilitating progress as they establish and manage new ventures. Therefore, we propose that

H5: Attitude toward failure has a positive effect on entrepreneurial commitment.

Perceived Capability

Perceived capability, specifically Entrepreneurial Self-Efficacy (ESE), is another influential factor. Studies by Chen et al. (1998) and Krueger et al. (2000), demonstrate its significance as a predictor of entrepreneurial intentions. Boyd and Vozikis (1994) have defined entrepreneurial self-efficacy as "a fundamental explanatory factor in determining the strength of entrepreneurial intentions and the likelihood of those intentions translating into entrepreneurial actions" (p. 70). Similarly, Krueger and Brazeal (1994) have posited that ESE is one of the key prerequisites for potential entrepreneurs. Furthermore, Saeed et al. (2015) have also affirmed the impact of entrepreneurial self-efficacy on entrepreneurial intention, which can subsequently lead to venture creation. Therefore, we propose that

H6: Perceived capability has a positive effect on entrepreneurial commitment.

Need for Achievement

Finally, the Need for Achievement plays a vital role in shaping entrepreneurial commitment. Numerous studies have indicated the significant role of the need for achievement in the process of venture creation (Çolakoğlu & Gözükara, 2016; Gürol & Atsan, 2006; Indarti & Krinstiansen, 2003). Furthermore, a study conducted by Akhtar et al. (2020) found that the need for achievement positively and significantly impacts entrepreneurial intentions when mediated by self-efficacy behavior. This suggests that individuals with a high need for achievement are more likely to harbor stronger intentions to become entrepreneurs, and their commitment to entrepreneurial goals is influenced by their belief in their own capabilities and self-efficacy. These empirical results offer support for the idea that the need for achievement plays a pivotal role in shaping one's level of commitment to entrepreneurial pursuits. Therefore, we propose that

H7: Need for achievement has a positive effect on entrepreneurial commitment.

Conceptual Framework

From the above discussion, the research hypotheses and proposed model can be developed as shown in Figure 1.

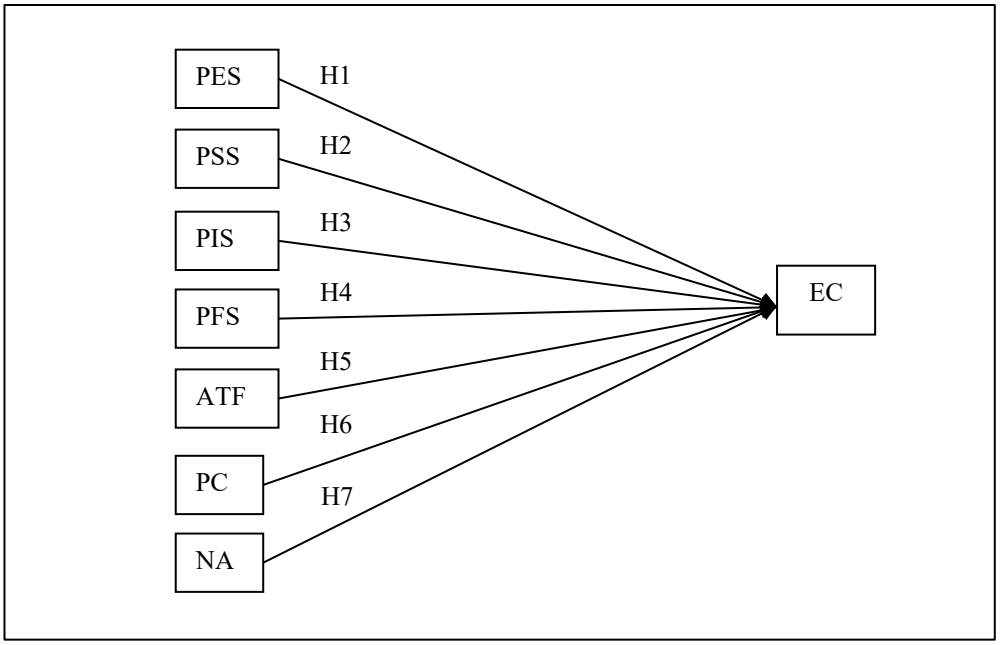

Figure 1 Proposed model and research hypotheses

Note: PES = Perceived educational support, PSS = Perceived structural support, PIS = Perceived informal network support, PFS = Perceived formal network support, ATF = Attitude toward failure, PC = Perceived capability, NA = Need for achievement EC = Entrepreneurial commitment.

Methods

This research employed a quantitative research design and utilized a survey methodology for data collection. The target population for this study consisted of Thai student entrepreneurs involved in innovation and technology-based business ventures at the undergraduate, master's, and doctoral levels. Due to the absence of a comprehensive database of student entrepreneurs in Thailand, it was challenging to determine the exact population size accurately. This is primarily due to the dynamic nature of student entrepreneurship, with new ventures starting each year and others discontinuing their entrepreneurial pursuits. To overcome this limitation, the researcher employed the GPower program, a specialized computational tool designed for sample size calculation (Faul et al., 2007). The program necessitates input parameters such as the effect size, significance level (α), statistical power (1-β), and the number of predictors. Adopting the default value recommended by the program, an effect size of 0.15 was utilized. A significance level (α) of 0.05 and a statistical power (1-β) of 0.95 were selected. The number of predictors, representing independent factors, was set at 7, corresponding to the seven independent factors in this study. The calculations yielded a required sample size of 153 participants. To account for potential incomplete responses, it is advisable to allocate a buffer of approximately 10-20% of the sample size (Anderson & Gerbing, 1984). Consequently, the final sample size was determined to be 180 participants.

The research sample consisted of undergraduate, master's, and doctoral students who were entrepreneurs enrolled in universities affiliated with the network of regional science parks in Thailand. This network comprises 16 universities, namely Chiang Mai University, Mae Jo University, University of Phayao, Naresuan University, Mae Fah Luang University, Uttaradit Rajabhat University, Phibunsongkhram Rajabhat University, Khon Kaen University, Mahasarakham University, Suranaree University of Technology, Ubon Ratchathani

University, King Mongkut's University of Technology Thonburi, Burapha University, Prince of Songkhla University, Walailak University, and Thaksin University (Pisansupong, 2014). A non-probabilistic sampling method was employed in this study, utilizing a purposive sampling approach based on pre-determined selection criteria. The criteria for sample selection were as follows: 1) individuals who were both entrepreneurs and university students, 2) those who had been operating technology and innovation-related businesses for a minimum of one month, and 3) individuals who had engaged in entrepreneurship-promoting activities within or outside the university. These criteria were aligned with the definition of the dependent variable in this study.

Data collection for this study involved the administration of an online questionnaire using Google Forms. The researcher contacted the Student Entrepreneurship Incubation Centers in all 16 universities within the Thailand Science Park network, providing them with comprehensive information and research details. Potential participants who met the predefined criteria were invited to take part in the study by completing the questionnaire. From April to September 2022, a total of 200 survey questionnaires were distributed, and 157 complete and valid survey responses were received and used for subsequent data analysis.

Questionnaire Development

This research article entailed the development of a self-assessment questionnaire comprising four sections, crafted based on an extensive literature review. The first section focused on gathering respondent profiles. The second section assessed environmental factors using items from Gelard and Saleh (2011) and Wibowo et al. (2019), which included perceived educational support (three items), perceived structural support (four items), perceived informal network support (five items), and perceived formal network support (four items). The third section explored internal factors, including attitude toward failure (adapted from Politis and Gabrielsson, 2008) with two items, perceived capability (adapted from Chew et al., 2016) with twelve items, and need for achievement (adapted from Indarti and Kristiansen, 2003) with four items. Finally, the fourth section examined entrepreneurial commitment using measures from Adam and Fayoll (2015), which covered affective commitment (five items), continuation commitment (four items), and normative commitment (five items). All items in sections 2 to 4 were assessed on a five-point Likert scale, with 1 representing ‘Strongly Disagree’ and 5 representing ‘Strongly Agree’.

To ensure the face validity of the questionnaire, a meticulous translation into the Thai language was conducted by native Thai translators. Furthermore, three academic professionals specializing in entrepreneurship rigorously examined and selected appropriate and relevant questions. The Index of Item Objective Congruence (IOC) was employed in this study as a statistical measure to evaluate the agreement between test items and a specified set of criteria or objectives. Out of the 48 items, 43 demonstrated IOC values ranging between 0.60 and 1.00. This range, surpassing the threshold of 0.5, signifies that the questionnaire is deemed appropriate according to the criteria established by Rovinelli and Hambleton (1977). The remaining 5 items, with an IOC value of 0.33, underwent careful revision based on feedback from the three academic professionals.

To evaluate the reliability of the measurement scales, a reliability test, specifically Cronbach's alpha, was conducted. The resulting Cronbach's alpha value of .893 demonstrated acceptable internal consistency (Cortina, 1993).

Data Analysis

There were 157 clean samples collected and preparing for analysis. The data analysis was carried out utilizing computer software (SPSS). To summarize the sample's characteristics, descriptive statistics such as frequency, percentage, and standard deviation were used. Multiple

regression analysis was used to investigate the relationship between environmental factors, internal factors, and entrepreneurial commitment. Changes in the dependent variable can be predicted using this statistical technique based on changes in the independent variables. The study used multiple regression analysis to examine the impact of external and internal factors on entrepreneurial commitment.

Results

The present study examined the demographics of the participants, such as their gender, age, current educational attainment, field of study, and the nature of their business activity. The results revealed a wide participant profile: 47.13% identified as female, 44.59% as male, and 8.28% were unwilling to disclose their gender. In terms of age distribution, the majority of participants (77.07%) were between the ages of 18 and 22, followed by the 22-26 age group (15.92%), and 7.01% were over the age of 26. The majority of respondents (81.53%) were pursuing bachelor's degrees, followed by master's degree students (16.56%), while a smaller minority (1.91%) were enrolled in doctoral programs.

The participant pool was diverse in terms of their fields of study, with the largest group studying engineering (27.39%). Business/management (22.29%), agricultural technology (12.10%), science (12.10%), and other disciplines (Fine and Applied Arts, Industry and Technology, Natural Resources, Medicine/Dentistry, Nursing, Information Technology/Digital Technology, Economics, and Business Communication) accounted for the remaining 26.12%.

In addition, the participants were largely involved in a variety of technology-driven business sectors. The most common industry was health tech (31.21%), followed by agriculture tech (22.29%), and food tech (20.38%). Furthermore, other business sectors such as FinTech, EdTech, PropTech, TravelTech, EnergyTech, Smart City Tech, FashionTech, CosmeticTech, and Metaverse accounted for 26.12% of participants' business involvement.

Effects of Environmental Factors and Internal Factors on Entrepreneurial Commitment

The empirical data were analyzed using multiple regression analysis in SPSS. Prior to incorporating the variables into the regression model, a thorough examination of the data was conducted to identify potential issues related to multicollinearity and normality. The correlation coefficients among the independent variables were all below 0.70, indicating no significant multicollinearity concerns. Additionally, the Variance Inflation Factor (VIF) values remained below the suggested threshold levels provided by Hair et al. (1998), further supporting the absence of multicollinearity issues in the dataset. Normality of the variables was checked by skewness and kurtosis, and this showed both skewness and kurtosis to be proper values as suggested by Hair et al. (2006). Table 1 presents the correlations, VIF, Skewness, and Kurtosis values for each variable.

The results of the multiple regression analysis, presented in Table 2, indicate a statistically significant relationship ($p < 0.05$) between four variables: perceived informal network support, perceived formal network support, attitude toward failure, and need for achievement, and their impact on entrepreneurial commitment. Notably, the variable with the greatest influence on entrepreneurial commitment was perceived informal network support (B = 0.203), supporting H3. This was followed by need for achievement (B = 0.109), perceived formal network support (B = 0.093), and attitude toward failure (B = 0.067), which support H7, H4, and H5, respectively.

Additionally, despite previous studies suggesting the effects of perceived educational support, perceived structural support, and perceived capability, this research did not find any significant impact on entrepreneurial commitment. Therefore, H1, H2, and H6 were not supported. The analysis revealed that the proposed model accounted for 46.7 percent of the

variation in the dependent variable. The model can be expressed as follows: Y (EC) = 2.210 + 0.203 (PIS) + 0.109 (NA) + 0.093 (PFS) + 0.067 (ATF).

Table 1. Pearson correlation analysis result

	PES	PSS	PIS	PFS	ATF	PC	NA	EC	VIF	Skew	Kur
PES	1								1.508	-0.931	0.773
PSS	0.405**	1							1.267	0.520	-0.151
PIS	0.198*	0.033	1						1.141	-1.772	3.724
PFS	0.420**	0.264**	0.280**	1					1.548	-0.436	0.153
ATF	0.231**	-0.016	0.277**	0.350**	1				1.246	-1.529	1.487
PC	0.431**	0.272**	0.152	0.452**	0.276**	1			1.246	-1.027	1.928
NA	0.336**	0.227**	0.159*	0.386**	0.205*	0.460**	1		1.550	-0.312	-0.461
EC	0.160*	-0.010	0.393**	0.393**	0.364**	0.286**	0.374**	1		-0.571	0.993

Note: * $p < 0.05$, ** $p < 0.01$

Table 2. Multiple regression analysis result

Independent variables	B	Std Error	Beta	t	Sig.
(Constant)	2.210	0.232		9.521	0.000
Perceived educational support (PES)	-0.038	0.028	-0.099	-1.352	0.178
Perceived structural support (PSS)	-0.036	0.025	-0.098	-1.451	0.149
Perceived informal network support (PIS)	0.203*	0.028	0.460	7.202	0.000
Perceived formal network support (PFS)	0.093*	0.042	0.165	2.220	0.028
Attitude toward failure (ATF)	0.067*	0.033	0.134	2.013	0.046
Perceived capability (PC)	0.051	0.058	0.065	0.878	0.381
Need for achievement (NA)	0.109*	0.033	0.234	3.358	0.001

Dependent variable = entrepreneurial commitment (EC), R = 0.683, R^2 = 0.467, Adj R^2 = 0.442
F = 18.633, sig = 0.000, n = 157

Note: * $p < 0.05$

Discussion and Conclusion

The objective of this study was to explore how student entrepreneurs' perceptions of environmental and internal factors influence their entrepreneurial commitment. The findings from the multiple regression analysis offer valuable insights into the connections between these factors, revealing key determinants of entrepreneurial commitment among student entrepreneurs. Building upon our results, the subsequent discussion will elaborate on the hypothesized relationships.

Discussion of Environmental Factors on Entrepreneurial Commitment

Hypothesis 1 is not substantiated by our study findings, indicating the absence of a significant influence of perceived educational support on entrepreneurial commitment. This suggests that the landscape of entrepreneurship education in the country may not be as comprehensive or widespread as in some other nations. It is possible that the content and delivery of entrepreneurship courses do not adequately address the unique needs and challenges faced by student entrepreneurs. This limited exposure to entrepreneurship education could potentially diminish the perceived impact of educational support, particularly considering that our study predominantly involved students from engineering backgrounds, which differs from the focus of Saengchai and Jermsittiparsert (2019) research on students from business schools, where entrepreneurship education played a pivotal role in promoting self-employment intentions.

Our results also indicate that Hypothesis 2 is not supported. Concerning perceived structural support, it is important to note that some student entrepreneurs may perceive formal support structures as bureaucratic and difficult to navigate. This perception might discourage them from actively seeking or fully utilizing such support. Instead, they may prefer more agile and flexible approaches to entrepreneurship that do not heavily rely on formal structures. Our findings are consistent with Detnakarin and Pongtongmuang's (2023) research, which found no significant impact of perceived structural support on the intention to start a business among Thai students due to insufficient resources in the environment and a lack of visible government support.

One key discovery in this study affirms the support for Hypothesis 3, highlighting a significant relationship between perceived informal network support and entrepreneurial commitment. This outcome suggests that student entrepreneurs who perceive robust informal support networks are more likely to demonstrate heightened levels of entrepreneurial commitment. This finding highlights the pivotal role of social networks and relationships within the entrepreneurial context, emphasizing the influence of friends, family, and parents in nurturing commitment among student entrepreneurs. This result aligns with the characteristics of Thai culture, which emphasizes collectivism. Consequently, it becomes imperative to raise parents' awareness about supporting their children in choosing an entrepreneurial career. These findings are consistent with prior research. Wibowo et al. (2019) also discovered a strong correlation between perceived informal network support and business creation. Similarly, Turulja et al. (2020) suggested that a robust network of family and friends offering support and encouragement can bolster individuals' commitment to entrepreneurship. Furthermore, Kanyan et al. (2020) affirmed in their study that informal networks heavily rely on close friends, family members, and mutual connections, which exert influence on the initiation of business endeavors.

Our results also demonstrate a statistically significant relationship supporting Hypothesis 4 between the perception of support from formal networks and entrepreneurial commitment among student entrepreneurs. Those who perceive strong support from formal networks, such as incubators, accelerators, and experienced consultants, tend to exhibit higher levels of commitment. This underscores the importance of networking programs and mentorship support in nurturing entrepreneurial commitment within the student population. In Thailand, formal networks often encompass entities like incubators, accelerators, and business development organizations, which offer valuable resources such as funding, office space, and mentorship. Student entrepreneurs who are part of these networks can leverage these resources, significantly enhancing their capacity to initiate and grow their ventures. Access to such resources bolsters their confidence and dedication to their entrepreneurial pursuits. Our findings align with Gelard and Saleh (2011) research, which highlights the impact of formal networks, including experienced consultants and entrepreneurship networks, on business

creation. Stam et al. (2014) also support our findings, emphasizing the pivotal role played by formal networks in nurturing entrepreneurial commitment, which in turn, influences firm performance.

Discussion of Internal Factors on Entrepreneurial Commitment

Additional findings highlight a significant and statistically supported relation affirming Hypothesis 5 between one's attitude towards failure and their commitment to entrepreneurial endeavors. Those who maintain a positive outlook on failure are more inclined to wholeheartedly commit to their entrepreneurial pursuits. This highlights the paramount importance of resilience and the capacity to perceive failures as invaluable learning opportunities along the entrepreneurial journey. Entrepreneurship inherently carries risks, often adorned with failures and setbacks on the road to success. Entrepreneurs who embrace failures as sources of valuable insights tend to exhibit greater adaptability and agility when confronting challenges. This adaptability becomes a pivotal trait in the context of Thailand, where entrepreneurship is burgeoning but remains marked by significant uncertainties and risks. Research conducted by Lin et al. (2018) emphasizes that failure encourages entrepreneurs to engage in introspection and extract lessons from their missteps, ultimately leading to a more rational and realistic self-assessment of their skills. This learning process, in turn, exerts a profound influence on the strategic decisions made by serial entrepreneurs in their subsequent ventures. Furthermore, in a similar vein, Politis and Gabrielsson (2009) found strong evidence indicating that prior start-up experiences correlate strongly with a more positive attitude towards failure.

Contrary to our initial expectations, Hypothesis 6 is not supported, as our study did not reveal any significant influence of perceived capability on entrepreneurial commitment among student entrepreneurs in Thailand. It appears that these students may have limited exposure to real-world entrepreneurial experiences, which could contribute to the development of their entrepreneurial skills and self-confidence. This lack of practical exposure might shape their perception of their own capabilities, creating a disparity between their self-assessment and their actual commitment to entrepreneurship. This finding aligns with the research conducted by Puapradit and Supatn (2021), which similarly found no direct significant effect of self-efficacy on Thai students' intentions to start a business. However, they identified an indirect effect of self-efficacy through work effort, highlighting the crucial role of diligence and effort in the entrepreneurial journey. Considering these insights, further research is warranted to delve deeper into these issues and explore potential solutions for enhancing entrepreneurship education and support for student entrepreneurs in Thailand. Addressing these challenges may necessitate a multifaceted approach, encompassing curriculum enhancements, more accessible and visible support structures, and opportunities for hands-on entrepreneurial experiences to bridge the gap between perception and reality.

Finally, Hypothesis 7 is supported. Another significant factor influencing entrepreneurial commitment is the need for achievement. This discovery underscores the pivotal role played by personal motivation and determination in shaping an entrepreneur's unwavering dedication to their pursuits. These findings align with research conducted by Akhtar et al. (2020), who observed that individuals driven by a strong need for achievement are more motivated to explore entrepreneurial opportunities and set ambitious goals for themselves. This heightened motivation and determination significantly contribute to their inclination to launch their own businesses. Furthermore, Soomro and Shah (2021) support these insights by revealing that the need for achievement plays a central role in fostering entrepreneurial intentions, particularly among commerce students. In the context of Thailand, Sukasame et al. (2008) provide further evidence, suggesting that variables associated with the need for achievement can reliably predict the success of Thai e-commerce entrepreneurs. Thai culture places significant emphasis

on success and achievement, with individuals demonstrating a strong need for achievement, which often garners admiration and respect in Thai society. This cultural value motivates student entrepreneurs to set ambitious goals and exert relentless effort in their pursuit, ultimately resulting in higher levels of commitment to their entrepreneurial endeavors.

In summary, this research enhances our comprehension of the variables that impact the level of commitment exhibited by student entrepreneurs towards their business creations. This study points out the importance of perceived informal network support, need for achievement, perceived formal network support, and attitude toward failure. Additionally, it questions the commonly held beliefs about the influence of perceived educational support, perceived structural support, and perceived capability. The aforementioned findings offer significant insights for educators, institutions, and politicians who are involved in fostering and facilitating the development of future entrepreneurs.

Recommendation

Based on the findings of this study, we propose a comprehensive approach to strengthen and reinforce the commitment of student entrepreneurs. Building upon the findings of Hypotheses 3 and 4, policymakers and educational institutions should prioritize cultivating both informal and formal networks. This involves actively promoting mentorship, fostering peer collaboration, and facilitating access to experienced consultants in incubation centers. To augment commitment through networking, stakeholders can organize events that bring together informal networks, such as student entrepreneurs and alumni, for sharing business experiences or establish business clubs within universities for students interested in business creation. Additionally, for formal networks, initiatives like bringing experienced consultants to advise student entrepreneurs or creating internship programs that connect students with business development organizations can be instrumental.

Considering the findings from Hypothesis 5, it is crucial to cultivate a positive attitude towards failure through targeted programs and curriculum components. Providing training on resilience in the face of failure can help students embrace setbacks as valuable learning experiences. Teaching them to rebound from challenges and perceive them as opportunities for growth, rather than hindrances to commitment, is essential. Additionally, creating sharing sessions, where student entrepreneurs in university discuss their experiences, including failures in business creation, is also of paramount importance.

Regarding Hypothesis 7, recognizing the significance of the need for achievement as a motivating factor is crucial. Stakeholders can foster commitment by offering recognition and awards through business contest events such as startup camps, that celebrate outstanding entrepreneurial achievements with various accolades and honors. Acknowledging the commitment and success of student entrepreneurs can serve as inspiration for others to pursue their entrepreneurial aspirations.

Furthermore, it is essential to highlight that this research did not uncover significant impacts on entrepreneurial commitment concerning perceived educational support, perceived structural support, and perceived capability. Despite these non-significant findings, we underscore the importance of continued exploration and enhancement of these factors, as they hold the potential to significantly contribute to fostering student commitment to entrepreneurship. Policymakers and educational institutions should persist in their efforts to improve educational support systems, such as enhancing business courses or increasing accessibility to co-working spaces in universities. Strengthening structural support available to student entrepreneurs, such as streamlining bureaucratic funding systems, remains crucial. Additionally, efforts should be directed towards enhancing students' capabilities through targeted training and resources that expose student entrepreneurs to the real-world dynamics of business. While these factors may not have demonstrated statistical significance in this study,

they might still possess untapped influence in encouraging and nurturing student commitment to entrepreneurship. Their ongoing development should remain a priority in supporting student entrepreneurial pursuits.

Future research

Expanding on the findings of this study, future research should delve deeper into unraveling the complexities of entrepreneurial commitment. An essential focus lies in exploring how the interplay between formal and informal networks can be optimized to enhance student entrepreneurial commitment. Investigating the specific attributes and behaviors of mentors, peers, and consultants that contribute most effectively to commitment could yield actionable insights for mentorship and networking programs. Additionally, studying other specific networks, such as the impact of industrial-university networks or supplier and customer networks, can offer valuable insights into supporting student entrepreneurs. Furthermore, research should extensively explore the role of resilience and failure acceptance, examining how tailored interventions and educational approaches impact students' ability to rebound from setbacks, especially when managing businesses while still enrolled in university. This could shed light on the challenges faced by students and how they navigate through such situations, contributing to a more comprehensive understanding. Additionally, more detailed examinations of the link between recognition and commitment can help establish which forms of recognition, such as awards or honors, are most motivating for student entrepreneurs. For instance, studying the specific forms of rewards that encourage students to pursue business success can provide valuable insights. Moreover, longitudinal studies tracking students throughout their entrepreneurial journey can offer a comprehensive understanding of how commitment evolves over time, informing the development of effective long-term support mechanisms.

While shedding light on crucial aspects of student entrepreneurial commitment, it is essential to acknowledge the limitations of this study. Future research should address these limitations by employing more extensive and diverse samples to ensure generalizability across different contexts and demographics. Additionally, exploring the nuances of perceived educational support, structural support, and capability development is crucial, considering our study did not find significant impacts in these areas. Priority should be given to in-depth investigations into the specific components within these categories that may influence commitment, as well as evaluating the effectiveness of different interventions. Furthermore, future research should consider the potential influence of unmeasured variables and external factors on commitment, such as market conditions, government policies, or technological trends, to provide a more comprehensive understanding of the multifaceted nature of student entrepreneurial commitment. Lastly, examining how institutional policies and practices can be improved to better support and nurture entrepreneurial commitment, considering the diverse needs of student entrepreneurs, should be a focus of future research efforts.

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