Entrepreneurship in Thailand: A Panacea to Economic Growth?

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Abstract

The present study provides insights into entrepreneurship in Thailand by (1) investigating Thailand's entrepreneurial environment over the past two decades, (2) examining the contribution of entrepreneurship to employment and growth, and (3) recommending policy implications to foster a more robust entrepreneurial ecosystem and economic growth. By analyzing data from the Global Entrepreneurship Monitor, the World Bank, National Economic and Social Development Board, and the Bank of Thailand, findings indicated that Thailand had conductive environment for doing business resulting in the highest level of entrepreneurial activities in the world. Entrepreneurship significantly stimulated growth. However, job creation as a result of entrepreneurship was not significant. Thai's entrepreneurs initiated their small-scale businesses with modest financial investments and lack of innovation. Due to the deficiency in innovation, expertise, and financial resources, Thailand have encountered challenges in transition toward innovation-driven economy. Resources and budget should be allocated to enhance innovation and R&D, rather than building infrastructure. Network and collaboration that facilitates the linkage between R&D and business enterprises must be established. Finally, the entrepreneurship education program should be incorporated into the primary and secondary school curriculum to nurture entrepreneurship ecosystem and foster economic growth.

Keywords: Entrepreneurship, Growth, Employment, Policy, Economic development

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Introduction

For decades, scholars and policy makers (e.g. Ahlström et al., 2019; Neumann, 2020; García-Lillo et al., 2023) have endeavored to examine the influences of entrepreneurship on an economy. Undeniably, entrepreneurship played a crucial role in creating new employment opportunities, fostering innovation, enhancing the competitive environment, resulting in economic growth and development. Nonetheless, previous studies (e.g. Gomes et al., 2022; Stoica et al., 2020) have revealed that the contribution of entrepreneurship to economic growth and development was not universal- it varied across economies contingent upon the country's stage of economic development and the nature of entrepreneurs' activities. Although there exist numerous studies on entrepreneurship, the majority of them have studied on the global level, with fewer studies investigating specific entrepreneurial environment of individual countries (i.e. Thailand) and its impacts on respective economies. According to the study of Global Entrepreneurship Monitoring (GEM), Thailand's exhibited the highest level of entrepreneurial activity among the participating countries over the two decades (see example in figure 1 and figure 2). This renders Thailand worthy of further study or consideration as a case study. However, the academic studies on the unique characteristics of Thai's entrepreneurship and their influences on economic development have been limited. To fill this gap, the present study aimed at providing insights into entrepreneurship in Thailand by analyzing the current situation and provide policy implication to improve entrepreneur eco-system and foster economic growth.

Objectives

The objectives of the present research include:

1. To investigate the entrepreneurial environment in Thailand.
2. To examine the contribution of entrepreneurs to employment and growth in Thailand.
3. To provide policy recommendations to encourage the emergence of new entrepreneurs and strengthen entrepreneurs' ecosystem in order to foster a more robust economic growth and development.

In the next section, first, literature review and data from the Global Entrepreneurship Monitor (GEM), Bank of Thailand (BOT), National Economics and Social Development Board

(NESDB), and the World Bank were analyzed to assess the Thailand's entrepreneurial environment. Second, regression analysis was utilized to examine the influences of entrepreneurship on employment and economic growth. Finally, the results from the first and the second section were analyzed to provide recommendations to nurture entrepreneur ecosystem, hence foster economic growth and development.

Literature Review

The Entrepreneurial Environment in Thailand

Thailand has been considered as a country that provides a conductive environment for entrepreneurs. According to the World Bank data, Thailand's ease of doing business score has increased significantly from 71.94 in 2015 to 80.09 in 2019, with the rank the 21st out of 190 countries around the world (see table 1). With less procedure, time, and cost required to register for starting a new business, the starting business score in Thailand was evidently high as 90.4 compared to the average score of 83.9 in East Asia and Pacific regional. Procedure, time, and cost of dealing with construction permits, getting electricity, and registering for property of Thailand has deemed advantageous for conducting business with the score of 77.3, 98.7, and 69.5 respectively relative to 70.0, 75.1, and 57.5 of average countries in East Asia and Pacific regional. In addition, Thailand's corporate governance and transparency in safeguarding against the misused of corporate assets by directors have demonstrated a favorable business environment. Thailand's protection of minority investor right scored was 86.0, which was higher than those of average East Asia and Pacific countries of 49.7 and rank in the 3rd place among 190 countries around the world. Moreover, tax payment, credit information system, time and cost required to export the product, time and cost required to resolve a commercial dispute and insolvency have also provided a supportive environment in do business with the score of all components above those of average score of East Aia and Pacific regional (see Table 2).

Table 1 Ease of Doing Business Score from 2015 to 2019

		2015	2016	2017	2018	2019	Ranking (2019)
ASEAN	Thailand	71.94	72.80	78.45	79.52	80.09	21
	Malaysia	78.61	78.27	78.77	81.34	81.47	12
	Vietnam	62.60	65.29	66.98	68.57	69.77	70
	Singapore	84.89	85.44	85.57	85.84	86.20	2
ASIA	Japan	77.53	77.94	78.01	78.04	78.00	29
	China	62.28	63.79	64.20	73.30	77.28	31
	South Korea	83.09	83.97	83.97	83.96	84.00	5
EUROPE	Germany	79.50	79.55	79.35	79.35	79.71	22
	Poland	76.93	77.68	77.86	76.93	76.38	40
	United Kingdom	83.34	83.34	83.22	83.55	83.55	8
USA	United States of America	83.59	83.59	83.59	83.57	84.00	6

Note. This table shows ease of doing business score of the selected countries. The score ranged from 0 to 100, with 100 present the best performance. From *World Bank's "Ease of doing business" ranking*, by World Bank Open Data, n.d., World Bank Group. (https://data.worldbank.org/indicator/IC.BUS.EASE.XQ)

Table 2 Components of Ease of Doing Business Index in 2020

	Thailand	East Asia and Pacific (Regional Average)
Starting a business	92.4	83.9
Dealing with construction permits	77.3	70.0
Getting Electricity	98.7	75.1
Registering property	69.5	57.5
Getting credit	70.0	58.0
Protecting minority investors	86.0	49.7
Paying Taxes	77.7	73.6
Trading across borders	84.6	71.6
Enforcing Contracts	67.9	53.0
Resolving insolvency	76.8	40.9

Note. This table shows the score of 10 factors affecting ease of doing business. From *Doing Business 2020,* by World Bank Group, 2020. (https://doi.org/10.1596/978-1-4648-1440-2)

With a conductive environment, Thailand has consistently displayed a remarkable high level of entrepreneurial activity relative to other Asian countries, Europe and the United

States. According to the survey of Global Entrepreneurship Monitor (GEM), the average total early-stage entrepreneurial score (TEA) from 2002 to 2018 of Thailand was 19.45 indicating that about 19.45 percent of adult population (age 18-64) was nascent entrepreneurs who have been involved in setting up and managing businesses for less than 42 months (see table 3). The average score of established business activity (EBA) was 22.83 indicating that 22.83 percent of Thai adult population have owned and managing businesses for more than 42 months (see table 3). Thailand's level of entrepreneurial activity has been highest among the GEM participating countries over the two decades (see figure 1 and figure 2).

Table 3 Entrepreneurial Activity in Thailand

	2002	2005	2006	2007	2011	2012	2013	2014	2015	2016	2017	2018	Average
TEA	18.9	20.74	15.2	26.87	19.51	18.94	17.66	23.3	13.74	17.24	21.62	19.68	19.45
EBA	13.28	14.1	17.42	21.35	30.11	29.69	28.02	33.06	24.61	27.5	15.18	19.58	22.83
Motivational Index	n.a.	n.a.	n.a.	n.a.	3.53	4.04	3.63	4	4.42	3.5	7.9	3.56	4.32
Female/Male TEA	0.95	0.87	0.87	0.93	1.16	1.19	0.96	0.9	1.16	0.83	0.86	0.96	0.97
Female/Male Opportunity-Driven TEA	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.89	0.99	0.9	0.9	0.98	0.99	0.94
Innovation	n.a.	n.a.	n.a.	n.a.	22.94	19.57	20.07	24.51	19.02	17.1	29.29	17.8	21.29
Business Services Sector	4.74	4.55	6.92	2.88	7.02	7.54	7.69	5.72	4.2	9.12	6.35	4.19	5.91
High Job Creation Expectation	9.49	17.73	11.51	3.98	15.18	12.15	14.17	6.66	8.8	9.5	29.56	19.13	13.16
High Status Good Career Choice	n.a.	77.71	76.28	81.76	79.11	79.12	74.83	71.11	69.39	73.6	74.48	80.87	76.21
	n.a.	88.03	84.29	87.15	77.01	75.67	74.52	73.6	71.5	73.7	74.72	80.1	78.21

Note. This table shows the score of entrepreneurs' activities in Thailand. Data acquired from questionnaire designed by GEM administered to a minimum of 2000 respondents in Thailand. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-a, (https://www.gemconsortium.org/data/key-aps)

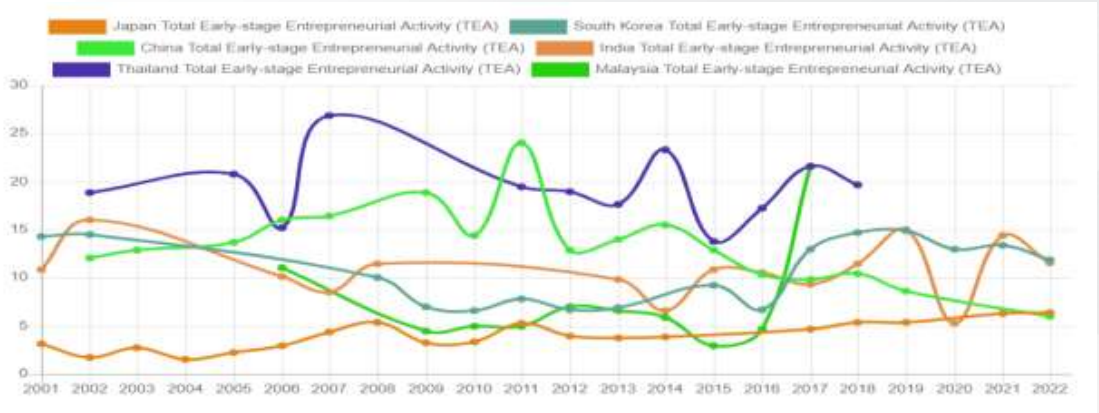

Figure 1 Total Early-Stage Entrepreneurial Activity (TEA) by Countries

Note. This figure shows the percentage of the respondents aged 18-64 who are either a nascent entrepreneur or owner-manager of a new business (TEA) over the year 2001 to 2022. Adapted from *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-b, (https://www.gemconsortium.org/data)

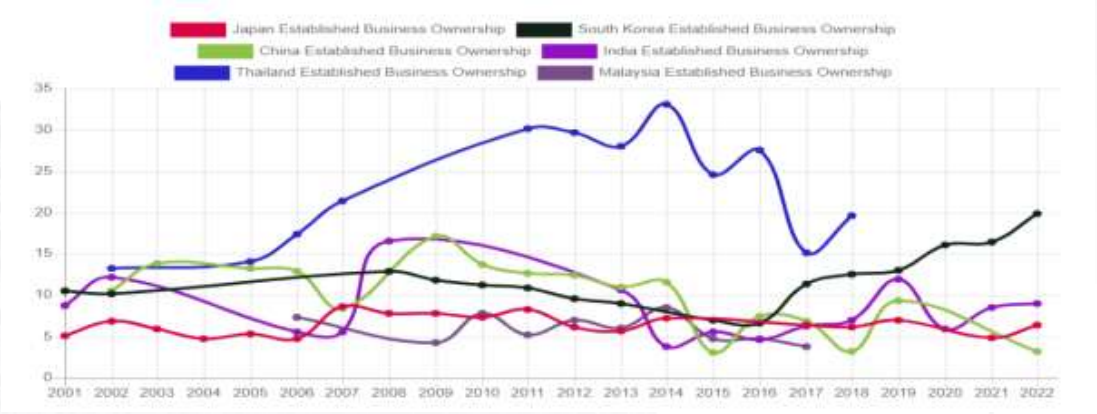

Figure 2 Established Business Activity (EBA) by Countries

Note. This figure shows the percentage of the respondents aged 18-64 who are currently an owner-manager of an established business for more than 42 months (EBA). Adapted from *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-c, (https://www.gemconsortium.org/data)

The considerable level of entrepreneur activity in Thailand has predominantly influenced by Thai's socio-cultural norm. Thai society perceived entrepreneur as favorable career path attributing it to high social status. The survey of GEM from 2002 to 2018 indicated that Thailand exhibited higher score than other participation countries in the perception of

entrepreneur as a good career choice and high status (see figure 3). On average, 78.21 percent of Thai adult population agreed that being an entrepreneur is a desirable career choice and 76.21 percent of adult population regards entrepreneurs as high social status (see table 3).

Figure 3 Entrepreneur is a Good Career Choice by Countries

Note. This figure shows the percentage of the respondents aged 18-64 who agree with the statement that in their country, most people consider starting a business as a desirable career choice. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-d, (https://www.gemconsortium.org/data)

Regarding the motivation to start a new business, entrepreneurs can be categorized into two types: (1) opportunity-driven entrepreneurs and (2) Necessity-driven entrepreneurs. Opportunity-driven entrepreneurs are those who startup their business when they recognized a lucrative opportunity and utilize their skills and motivation to exploit this opportunity. Necessity-driven entrepreneurs are those who are encouraged to startup their business because of economic situation, such as being unemployed or lack of necessary skills to find appropriate jobs in the established firms (*Global Entrepreneurship Monitor*, 2002). Thailand exhibited high number of opportunity-driven entrepreneur relative to other countries (see figure 4) with an average motivational index of 4.32 over the year 2011-2018 indicating that Thai's entrepreneurs who started their business with opportunity driven was about 4.32 times higher that those who startup with necessity driven (see table 3). Data from GEM also indicated that individuals in the upper income level were more likely to start their business

when they recognized a lucrative opportunity whereas individuals in the lower income level tended to start their business when they face difficulty in earing income.

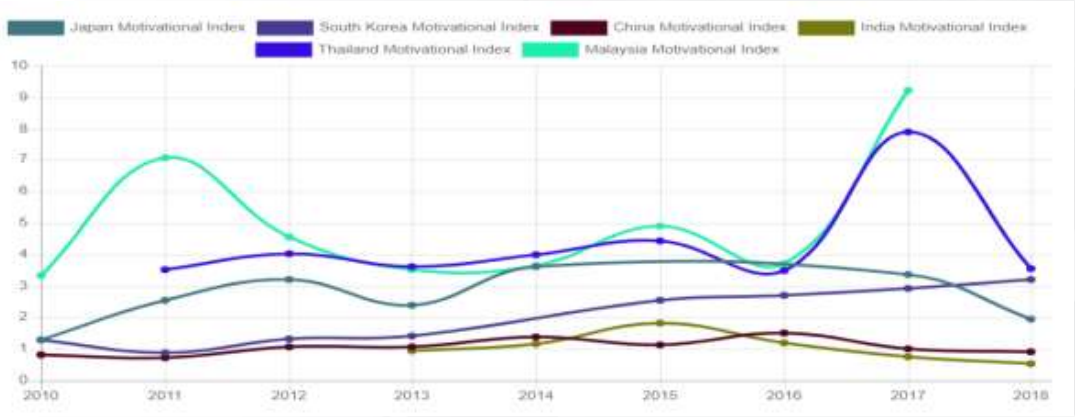

Figure 4 Motivational Index by Countries (Opportunity TEA/Necessity TEA)

Note. This figure shows the percentage of the respondents who are involved in TEA that are opportunity-motivated, divided by the percentage of TEA that is necessity-motivated. Opportunity-motivated entrepreneurs are those who see good opportunities to start a firm, while necessity-motivated are who start business because of lacking other employment options. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-e, (https://www.gemconsortium.org/data)

Unlike most of the countries that male was more actively participate in entrepreneurial activities, Thailand had a relatively high number of female entrepreneurs participating in total early state entrepreneurial activities (see figure 5). The average score of female/male TEA was 0.97 indicating that the female entrepreneurs in Thailand had involved in entrepreneurial activities as high as male (see table 3). Despite the high level of total early-stage entrepreneurial activity (TEA) among females, the number of opportunity-driven female entrepreneurs was relatively low. Thailand exhibited lower female/male opportunity driven TEA score than other countries (see figure 6). High female TEA score coupled with low female opportunity driven score indicated that female in Thailand had less opportunity to be employed. They might be unable to find suitable jobs and were compelled to start their businesses because of economic difficulties.

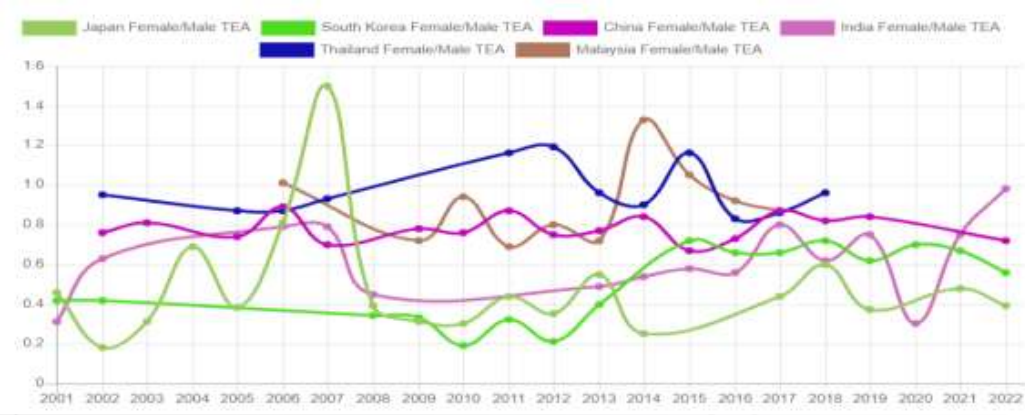

Figure 5 Female/Male TEA by Countries

Note. This figure shows the percentage of female 18-64 respondents who are either a nascent entrepreneur or owner-manager of a 'new business', divided by those of male. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-f, (https://www.gemconsortium.org/data)

Figure 6 Female/Male Opportunity Driven TEA by Countries

Note. This figure shows the percentage of females involved in TEA who (i) claim to be driven by opportunity as opposed to finding no other option for work; and (ii) who indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income, divided by those of male. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-g, (https://www.gemconsortium.org/data)

Regarding the business sector index, the business sector in which entrepreneurs operate their businesses reflects the evolution of a country's economic development from (1) factor-driven, (2) efficiency-driven, to (3) innovation-driven economies. First, factor-driven economies are nations whose competitive advantages are primarily derived from factors

endowments such as natural resources and unskilled labor. Entrepreneurship in these countries predominantly focuses on self-sufficiency agriculture and extraction activities. Second, efficiency-driven economies are nations whose competitive advantages derived from efficient production process and product quality. Entrepreneurship in these countries primarily engages in mining, construction, and manufacturing sectors. Third, innovation-driven economies are nations whose competitive advantages rely on knowledge-intensive businesses and innovation. Innovation-driven entrepreneurs are involved in business professional services, financial services, real estate services, information and communication, and technology sector (*Global Entrepreneurship Monitor Thailand*, 2012). The Business service sector index (see table 3), which showed percentage of TEA that involves in business service sector, financial intermediation and real estate, administrative service, professional service, and information and communication sector, has been considered as an indicator of innovation-driven economies. Thailand's business service sector index was low relative to other countries, i.e. Japan, South Korea, and China (see figure 7) with only an average of 5.91 percent operated in business service sector (see table 3), while more than 60 percent of TEA were engaged in manufacturing sector and small consumer-oriented business, such as retail trade and restaurant. Thailand has remained entrenched in an efficiency-driven economy over the past two decades. The primary obstacle which impeded Thailand's transition towards an innovation-driven model was a deficiency in fostering innovation.

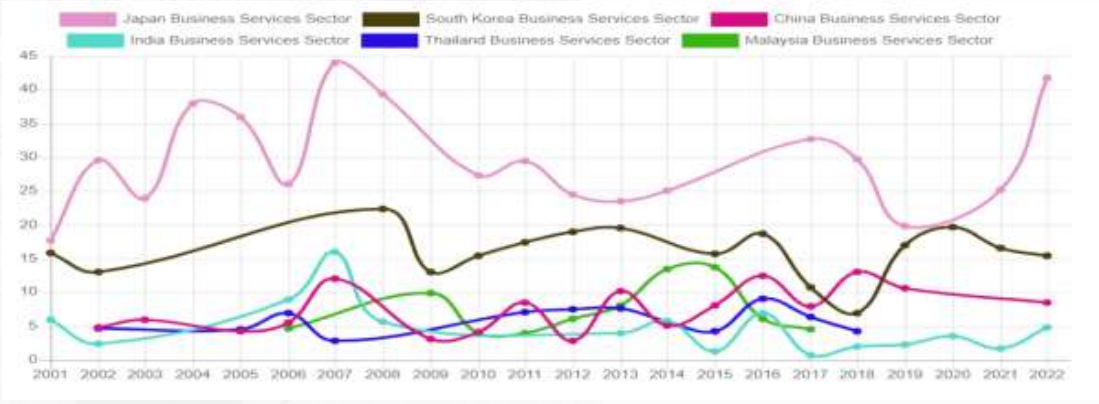

Figure 7 Business Service Sector by Countries

Note. This figure shows the percentage of those involved in TEA in the 'Business Services' sector - Information and Communication, Financial Intermediation and Real Estate, Professional Services or Administrative Services, as defined by the ISIC 4.0 Business Type Codebook. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-h, (https://www.gemconsortium.org/data)

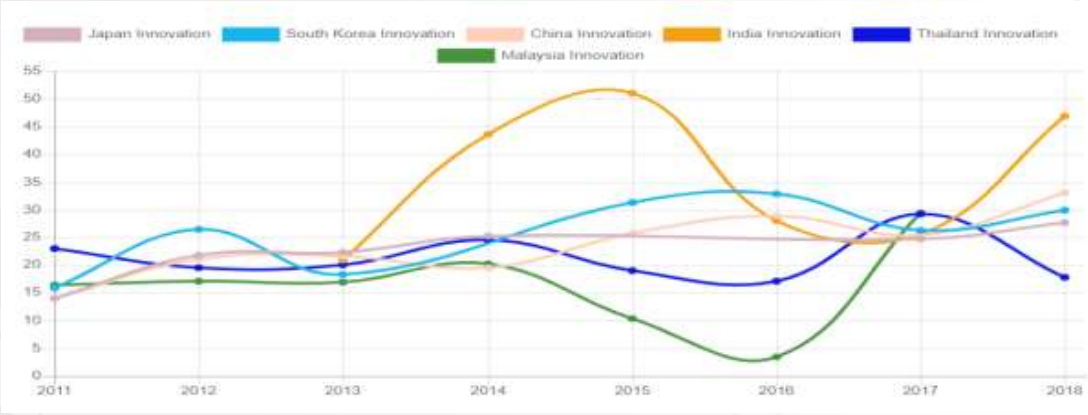

Figure 8 Innovation by Countries

Note. This figure shows the percentage of respondents involved in TEA who indicate that their product or service is new to at least some customers and that few (or no) businesses offer the same product. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-i, (https://www.gemconsortium.org/data)

Innovation is a crucial element associated with entrepreneurship. Although Thailand has shown exceptionally high levels of entrepreneurial activity, the level of innovation associated with entrepreneurship in the country only ranked average among the countries participated in the GEM research project (see example in figure 8). Only about 21.29 percent of nascent entrepreneurs indicated that they offered innovative or new products or services to customers. Thai entrepreneurs tended to prioritize replication over innovation in their entrepreneurial endeavors. They offered products or services already familiar to the market and were hesitant to diversify options for customers. Their hesitance to embrace innovation might be attributed to constrained financial resources or limited investment capabilities, given that a significant number of Thai entrepreneurs start their businesses on a small scale with low financial investment.

Regarding job creation, despite the high levels of entrepreneurial activity, job creation in Thailand was comparatively low when compared to other countries (see figure 9). According to GEM survey from 2002-2018, less than 20 percent of Thai entrepreneurs indicated that they created 6 or more job within 5 years (see table 3). This finding indicated that Thai' entrepreneurship was not significantly influenced employment levels. Most of Thai entrepreneurs initiated their businesses with modest financial investments and operated on a small scale.

Figure 9 Job Creation Expectation by Countries

Note. This figure shows the percentage of respondents involved in TEA who expect to create 6 or more jobs in 5 years. From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-j, (https://www.gemconsortium.org/data)

Finally, regarding the factors influencing the emergence of entrepreneurs and entrepreneur ecosystem, the ease of access to physical resources, land, utilities, transportation and communication has been the major strength fostering entrepreneurial activities in Thailand over the two decades (see figure 10). On the contrary, Thailand's basic school entrepreneurial education has been the major factors impeding entrepreneurs' activities over the two decades (see figure 10). In addition, R&D transfer has been recognized as one of the constraints of Thailand's entrepreneurship for decades. The linkages between national research and business enterprise were still limited. A mechanism should be established to incorporate national research and development into enterprises' practices, thereby creating new commercial opportunities that are accessible to SMEs. Moreover, the deficiency in government support and financial support has been indicated by experts over the decades as factors hindering the development of entrepreneurship in Thailand. Addressing these issues was imperative to bolster the entrepreneurial ecosystem.

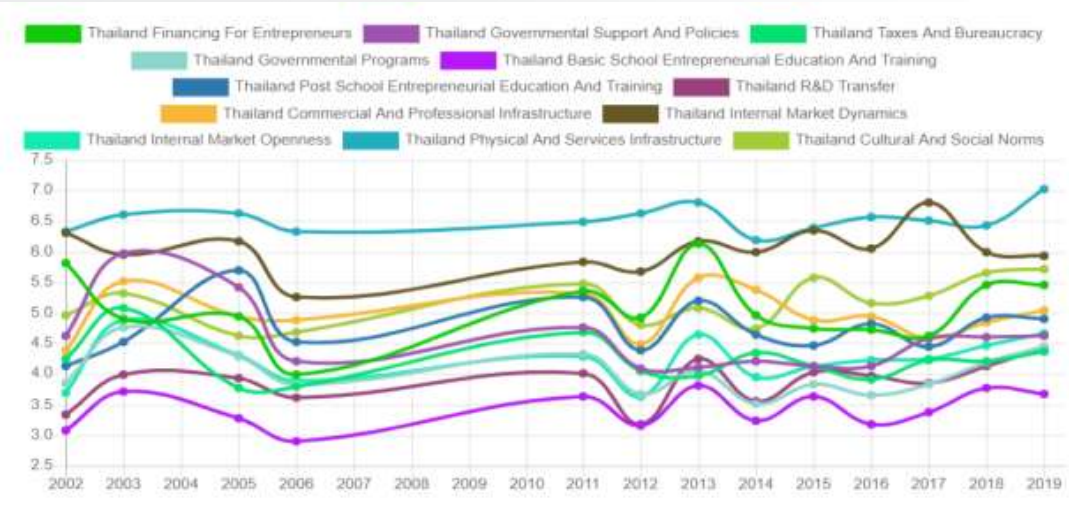

Figure 10 Strengths and Weaknesses of Thailand's Entrepreneurship

Note. This figure shows nine factors identified by GEM that enhance (or hinder) new business creation in a given country (i.e. Thailand). From *Entrepreneurial behavior and attitudes* [Data Set], by Global Entrepreneurship Monitor, n.d.-k, (https://www.gemconsortium.org/data)

Hypotheses

Examining the influence of entrepreneurship on the Thai economy is crucial. This section empirically tested the contribution of entrepreneurship to employment and economic growth.

Entrepreneurship and Employment

Entrepreneurship has been considered as a crucial driver for job creation or employment generation. van Praag and Versloot (2008) conducted a thorough review of 57 high quality studies during the year 1997 to 2008 and concluded that entrepreneurship was significantly contributing to employment generation. The empirical studies of Baldwin (1996) and Mueller et al. (2007) has confirmed the significant positive influence of startup firms on employment growth in Canada and Great Britain, respectively. In addition, Yoshiko, Amjad and Masayosh (2022) found a significant effect of entrepreneurship on employment creation in Japan. A 1 unit increased in entrepreneurship development resulted in 0.875 units increased employment creation in Japan. Given the robust evidence supporting the influence of entrepreneurship on employment, the following hypothesis was formulated.

H1: Entrepreneurship is positively influenced number of employments in Thailand.

Entrepreneurship and Economic Growth

Entrepreneurship has played a vital role in fostering innovation, enhancing the competitive environment, raising the productivity of firms and economies, resulting in economic growth and development (Carree & Thurik, 2010; Cumming et al., 2014; Kritikos, 2014). Due to factors such as habits, tradition, or entrenched routines, incumbent firms are less likely to innovate and change their existing practices. Startup or new entrepreneurs, in contrast, are often seek for new opportunities, convert these opportunities into innovative products or services, resulting in a greater product variety, lower prices of goods and services for customers, and intensify competition among firms. This competitive environment ultimately enhances productivity and fosters growth. Although entrepreneurship has disproportionate influences on economic growth contingent upon the types of entrepreneurs and the state of a country's economic development, positive influences of entrepreneurship on economic growth has been evidenced by previous empirical studies. Cumming et.al. (2014) examined the effect of entrepreneurship on GDP per capital using three different datasets and found that entrepreneurship positively and significantly influenced GDP per capita when using the World Bank and the Compendia dataset. Stoica et al. (2020) examined the contribution of three types of entrepreneurships (i.e. early-stage, opportunity-driven, and necessity-driven) on economic growth of 22 European countries during the year 2002 to 2018. Results indicated that all three types of entrepreneurs were positively and significantly contributed to economic growth. Given the robust evidence, therefore, the following hypothesis was formulated.

H2: Entrepreneurship is positively influenced economic growth in Thailand.

Methodology

The present study collected data from various sources. Quarterly data on macroeconomic variables, i.e. gross domestic product, from the year 2012 to 2023 were gathered from the National Economic and Social Development Board. Data on the number of employed person and number of entrepreneurs (or number of newly registered firms) were gathered from the Bank of Thailand database. The effects of entrepreneurship on employment generation and growth were examined using the following OLS regression model:

$$\ln Y_i = b_0 + b_1 \ln X_i + e_i$$

To test the effect of entrepreneurship on employment generation, in model 1, Y_i represented the number of employed person in the period i, X_i represented number newly registered company in Thailand in period i. To test the effect of entrepreneurship on growth, in model 2, Y_i represented Thailand's gross domestic product in the period i and Xi represented number newly registered company in Thailand in period i. and e_i represented the error term.

Results

Table 4 and 5 displayed results from regression analysis on the influence of entrepreneurship on the number of employments. Results indicated that the growth on number of newly registered entrepreneurs was not significantly influenced the growth in number of employed person (b=0.025, t=1.388, p > 0.05). This result was not surprising. It was consistent with the survey of GEM which indicated that Thai entrepreneurship was not significantly influenced employment generation.

Table 4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.203[a]	.041	.020	.02029

Note. a. Predictors: (Constant), Ln_entre b. Dependent Variable: Ln_Emp

Table 5 Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t value	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.307	.176		58.554	.000
	Ln_entre	.025	.018	.203	1.388	.172

Note. a. Dependent Variable: Ln_Emp

Table 6 and 7 displayed results from regression analysis on the contribution of entrepreneurship to economic growth. Results indicated that the growth on number of newly registered entrepreneurs was positively and significantly influenced the growth in real gross domestic product (b= 0.210 t= 3.221, p < 0.05). The growth in number of newly registered entrepreneurs accounted for 18.7% of the variation in real GDP growth.

Table 6 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.433[a]	.187	.169	.07332

Note. a. Predictors: (Constant), Ln_entre b. Dependent Variable: Ln_RGDP

Table 7 Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.684	.636		19.945	.000
	Ln_entre	.210	.065	.433	3.221	.002*

Note. a. Dependent Variable: Ln_RGDP *Level of significance 0.05

Conclusion

The results from hypothesis testing had confirmed the contribution of entrepreneurship to Thailand's economic growth. Entrepreneurship accounted for 18.7% of the variation in Thailand's growth rate. Entrepreneurship increased economic activities and competition, resulting in higher productivity and growth. However, the contribution of entrepreneurship to employment generation was not significant. This may result from the structure of business firms in Thailand. Most of the entrepreneurs in Thailand start their business with small scale with less number of employment generation. The result of this hypothesis testing was consistent with the survey from Global Entrepreneurship Monitor from 2002-2018 which indicated less than 20 percent of Thai entrepreneurs indicated that they created 6 or more job within 5 years. Employment creation as a result of newly registered firms was comparatively low when compared to other countries, i.e. Japan, South Korea, and China.

Discussion

The unique characteristics of entrepreneurship in Thailand deserves greater attention from academicians and practitioners. Thailand has provided a conductive entrepreneurial environment for doing business resulting in the highest level of total early-stage entrepreneurial activity (TEA) and established business activity (EBA) in the world over the two decades. High entrepreneurial activities have driven economic activities and significantly stimulated growth. While the effects of entrepreneurship on growth were significant, they

were not yet at a satisfactory level. Findings from regression analysis indicated that entrepreneurship accounted for only 18 percent of economic growth, indicating that there was room for further expansion of its impact. In addition, despite the highest entrepreneurial activity, job creation and value added created were not significant. Most of Thai's entrepreneurs initiated their small-scale retail businesses (e.g. retail trade, restaurant, and hotel) with modest financial investments and lack of innovation and technology. Due to the deficiency in technology, expertise, financial, and human resources, Thai's entrepreneurs have encountered challenges to expand their business into more sophisticated activities. Percentage of entrepreneurs that involved in knowledge-based and innovation-based sector (such as financial intermediation, professional service, software and application development, and information and communication sector) were relatively low compared to other developed countries and emerging economies. Thailand has faced challenges in transition toward innovation-driven economy, thus, remained entrenched in an efficiency-driven economy over the past two decades.

Recommendation

To promote entrepreneurial eco-system, enhance transition to innovation-based economy, and foster economic development, the following issues should be addressed. First, budget allocation should be shifted from infrastructure development towards supporting innovation and research and development (R&D). Over the two decades, Thai government have endeavored to invest and excelled in developing infrastructure. Undeniably, infrastructure development has been instrumental in boosting entrepreneurial activity. However, relying solely on physical infrastructure is inadequate. The government ought to prioritize innovation for nurturing the entrepreneurial ecosystem and driving economic growth. Allocation of more budget to subsidize research and development is an initial measure to foster innovation. Although the significance of R&D and innovation has been recognized, with various constraints, the government expenditure on R&D was relatively low compared to those of developed countries. Thailand's expenditure on R&D (as a percentage of GDP) was less than 1 percent prior to 2017, notably increased to 1.3 percent in 2020, and target to increase to 2 percent by the year 2027. Despite an endeavor to raise R&D expenditure to 2 percent, it remains relatively low and slow compared to other countries. According to data from the World Bank, most of the developed countries in Europe, Australia, Japan, and South Korea had R&D expenditure higher than 3 percent in the

year 2021. Allocating the budget to R&D is a long-term investment that must be done promptly to realize future benefits.

In addition to budget allocation, a mechanism that establishes a network and collaboration that facilitates the linkage between national R&D and business enterprises must be initiated. The insufficient transfer of national R&D to small and medium enterprises has hindered entrepreneurs from seizing new opportunities or engaging in more sophisticated businesses. Despite the presence of government agencies (e.g. National Innovation Agency (NIA) or National Science and Technology Development Agency (NSTDA)) responsible for R&D and innovation, the linkages between these government agencies and business enterprises are still limited. The programs, such as incubators can be instrumental to establish linkage, collaboration, and transfer of R&D into business practices. Additionally, the government can encourage networking and collaboration by facilitating opportunities for entrepreneurs, government, academicians, and research organizations to socialize, collaborate and exchange ideas.

Third, the availability of financial support is a crucial factor in promoting entrepreneurial innovation. According to the GEM survey, experts and entrepreneurs indicated that the deficiency financial support was one of the factors hindering the development of entrepreneurship in Thailand. With limited financial resources, Thai entrepreneurs are compelled to start with small-scale operations, making it challenging to scale up and innovate new products or services. With modest financial resources and innovation, the transition towards more sophisticated businesses activities becomes difficult. Government can assist fostering innovation through providing information regarding the sources of equity and loans from private and public sector for entrepreneurs to access. Furthermore, offering funding, grants, loans, or tax incentives for entrepreneurs investing in R&D can be an effective measure to enhance innovation.

Finally, the deficiency in incorporating business knowledge and entrepreneur mindset to the primary and secondary school level requires more attention. Findings from the GEM survey indicated that one of the weaknesses of Thailand' entrepreneurial system was the lack of basic school entrepreneurial education and training. Developing entrepreneurial abilities requires a diverse and various set of skills which must be cultivated from a young age. The ministry of education should integrate entrepreneurial education into primary and secondary schools. The project-based entrepreneur courses should be included in the curriculum development to enhance positive attitude and knowledge of business operations.

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