



## The Southeast Asian Nations' Entrepreneurial Ecosystem from the Global Entrepreneurship Index (GEI) Perspective

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**Abstract:** The entrepreneurial ecosystem is an interactive, country-level, and multi-element system that include at least 14 pillars or elements (Global Entrepreneurship and Development Institute (GEDDI) Report, 2018). The entrepreneurial system has evolved into ecosystem services and management that would generate high impact entrepreneurship. The study is limited to the Global Entrepreneurship Index (GEI) data culled by GEDI from the Global Entrepreneurship Monitor (GEM) Adult Population Survey for the individual data and various agencies for the institutional data. The GEI framework revolves around 3 sub-indices that serve as platform for the 14 pillars of the entrepreneurial ecosystem: entrepreneurial attitudes, abilities and aspirations. The use of the GEI data tool as well as correlation bivariate analysis served as the platform to determine the Southeast Asian (SEA) nations' GEI with the Philippines benchmarking with other 9 countries included in the GEI data. It was found that the Southeast Asian nations that had higher GEI scores than the Philippines are strongest in human capital and process innovation (except for Brunei) while common weakest point is in technology absorption (except for Singapore). It is notable that Human Capital score across the SEA nations have significant and strong associations with GEI, entrepreneurial abilities and aspirations and with both individual-level and institutional-level data. As the weakest ecosystem pillar among majority of the SEA nations except for Singapore, technology absorption is an entrepreneurial ability that has to be honed and invested with resources. The Philippines should nourish its entrepreneurial ecosystem with resources devoted to the mix of entrepreneurial attitudes, abilities and aspirations with institutional regulations and policies.

**Key Words:** entrepreneurial ecosystem, attitude, abilities, aspirations, innovation

### 1. INTRODUCTION

One of the most vital engine of economic growth in the Philippines is the practice of entrepreneurship as it helps alleviate poverty by empowering the poor

through venture creation that stimulate production and innovation. The country is regarded as one of APEC's fastest-growing economies with a projected 6.7% gross domestic product (GDP) growth rate heavily relying micro, small and medium enterprise (MSME) growth over the next two years (Survey of



Entrepreneurs and MSMEs, 2018). Despite the projected GDP growth, the Philippines is still behind its neighboring countries such as Singapore, China and Malaysia who have stronger entrepreneurship ecosystem based on Global Entrepreneurship Development Institute (GEDI). The Philippines ranked 84<sup>th</sup> out of 137 economies lagging behind Singapore (27<sup>th</sup> place), China (43<sup>rd</sup>) and Malaysia (58<sup>th</sup>). The Philippines' rank can be attributed to the low firm birth rate that stand at 300 firms for every 1 million working age population compared to other countries (World Bank, 2018). The Global Entrepreneurship Index (GEI) reported that developing countries are becoming hotbeds of business innovation due to transition of developing economies from centralized to market economies. Entrepreneurship plays a role in all development stages and is a process that continues over many years. Opportunity entrepreneurs are needed to create both the technology for new products and the markets where people will buy them.

### ***1.2. Entrepreneurship, Innovation and Economic Development***

The Global Entrepreneurship and Development Institute (GEDI) recognized that from the time of Schumpeter the concepts of entrepreneurship and innovation have been intertwined with economic development. Thus, GEDI developed the Global Entrepreneurship Index (GEI) which became an important tool for countries to accurately "assess and evaluate their ecosystem to create more jobs".

The 2018 GEI subscribes to Acs, Szerb and Autio's (2018) research that defines ecosystem services as the abundance or endowment of particular key factors of production or resources while ecosystem management is the manner in which economic activity is configured, or organized, within geographic space.

### ***1.3 Entrepreneurial Ecosystem Elements***

The ecosystem services and management and the role of entrepreneurship in bringing them to life is the *entrepreneurial ecosystem*. In the GEI, entrepreneurial ecosystems are composed of sub-systems (pillars) that are aggregated into systems (sub-indices) that can be optimized for system performance at the ecosystem level. The GEI (GEI Report, 2018) is a tool that analyze entrepreneurial ecosystem based on: 1) entrepreneurship is fundamentally an action undertaken and driven by agents on the basis of incentives; 2) the individual action is affected by an institutional framework conditions; and 3) entrepreneurship ecosystems are complex, multifaceted structures in which many elements interact to produce systems performance, thus, the index method needs to allow the constituent elements to interact.

The GEI 2018 Technical Index defined country-level entrepreneurship as "the dynamic, institutionally embedded interaction between entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations by individuals, which drives the allocation of resources through the creation and operation of new ventures." A four-level index composed was built composed of: (1) variables, (2) pillars, (3) sub-indices, and, finally, (4) the super-index. All three sub-indices composed of entrepreneurial attitudes, abilities and aspirations (also called 3As) contain several pillars, which can be interpreted as the quasi-independent building blocks of this entrepreneurship index. The 3As stand on 14 pillars, which contains an individual and an institutional variable that corresponds to the micro- and the macro-level aspects of entrepreneurship.

### ***1.4 Research Problem/s***

The 2018 GEI Report highlighted that it focuses on "opportunity entrepreneurship which is positively correlated with economic growth". In addition, the report espoused that entrepreneurs envision scalable, high-growth businesses. The 2018 GEI Report also observed the relationship between government regulation and necessity and opportunity



entrepreneurs where regulation holds back replicative (necessity) entrepreneurs but does not have the same impact on opportunity entrepreneurs. As a conclusion, the 2018 GEI report claims that entrepreneurs are the bridge between invention and commercialization: invention without entrepreneurship stays in the university lab or the R&D facility. Based on the GEI 2018 tool, the following research questions will be addressed:

1. Which of the 14 pillars of the entrepreneurship ecosystem is/are found to be significantly associated with the 2018 Global Entrepreneurship Index (GEI)?
2. What should the Philippines' *public and private sectors' support mechanism for start-ups and technology commercialization, do to contribute to the entrepreneurship ecosystem?*

### ***1.5 Theoretical Framework***

The 2018 GEI Report, where nascent and new entrepreneurs served as respondents from the Global Entrepreneurship Monitor Adult Population Survey (GEM APS), indicated that they are in the process of launching a new venture. These entrepreneurs found at the core of the system have varying entrepreneurial attitudes, abilities and aspirations which will collectively influence entrepreneurial intention. As the entrepreneurs perceive and recognize opportunities, trial and error process occurs as they validate the product or service idea (whether in the form of invention or innovation). The process of validation happens amidst the entrepreneurial conditions composed of soft conditions (such as social norms and cultural preferences) that determine who will pursue opportunities. Entrepreneurial conditions also stem from government regulations, research and development, education, infrastructure, financial sector and the corporate sector.

The Global Entrepreneurship Index (GEI) measures both the quality of entrepreneurship in a country and the extent and depth of the supporting entrepreneurial ecosystem.

## **2. METHODOLOGY**

As an exploratory-correlational research, this study makes use of descriptive and correlational research design to address the research questions on which pillars of the ecosystem are significantly correlated with the Global Entrepreneurship Index (GEI).

From the GEI Technical Index Report (2018), the index incorporated both individual-level and institutional/environmental variables. All individual-level variables are from the GEM survey. The individual variables for 35 countries were estimated using nearby and similar countries' GEM Adult Population Survey data. The institutional variables are obtained from various sources such as World Economic Forum 2015-2016 or 2016-2017 Global Competitiveness Report (GCR) survey.

The 2018 GEI Report complemented individual variables with other widely used relevant data from Transparency International (Corruption Perception Index), UNESCO (tertiary education enrollment, GERD), World Economic Forum (infrastructure, regulation, scientific institutions, availability of scientists, business sophistication, technology absorption and technology transfer capability, staff training, market dominance, venture capital), United Nations (urbanization), The Heritage Foundation and World Bank (economic freedom, property rights, labor freedom), the World Bank (taxation, good governance), the Observatory of Economic Complexity (economic complexity), OECD (country risk), and the Venture Capital & Private Equity Country Attractiveness Index (depth of capital market). The 2018 GEI Report applied the most recent institutional variables available on January 31, 2017.

GEDI also has in its website (<https://thegedi.org/tool/>) an interactive data explorer tool to generate comparison across the Philippines and the Southeast Asian nations with GEIs ranked higher than the Philippines. The tool also prescribed which pillar should the Philippines put its resources on.



### 3. RESULTS AND DISCUSSION

#### 3.1 Comparative GEI scores of the Philippines and SEA nations

The radar graph in Figure 1 shows the Philippines benchmarked against SEA nations with higher GEI scores. Singapore had highest scores in all pillars except for networking and opportunity perception (Malaysia's strongest pillars) and startup skills (Philippines' strongest pillar).

SEA nations with GEI scores at par and slightly lower than the Philippines. Thailand with GEI score higher than the Philippines had highest scores for opportunity recognition, and process innovation. Thailand and Indonesia are both strongest in cultural support, as Indonesia had strongest networking among the four SEA nations under comparison. All four SEA nations had almost similar human capital scores. Vietnam had strongest pillar scores for risk capital and technology absorption. Philippines and Thailand had almost identical scores for high growth and opportunity start up; while Philippines and Vietnam had similar scores for internationalization.

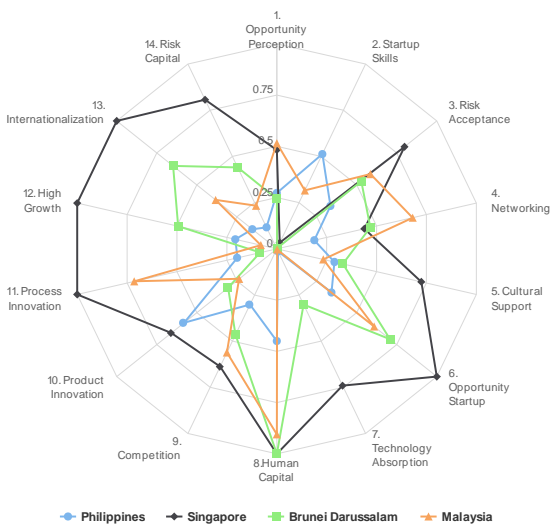


Figure 1. comparative GEI scores of ASEAN countries (higher GEI scores than the Philippines)

The Philippines was dominant in startup skills, risk acceptance and product innovation among the four SEA nations.

SEA nations with lower GEI scores than the Philippines include Lao PDR, Cambodia and Myanmar. The Philippines dominated in startup skills, risk acceptance, product and process innovation, high growth and internationalization. Opportunity perception was identical between Philippines and Myanmar. Risk capital was the strongest pillar for both Lao PDR and Myanmar while Lao PDR had the highest networking score among the four SEA nations under comparison. To improve the GEI score, the Philippines should allocate more resources to technology absorption, risk capital and internationalization.

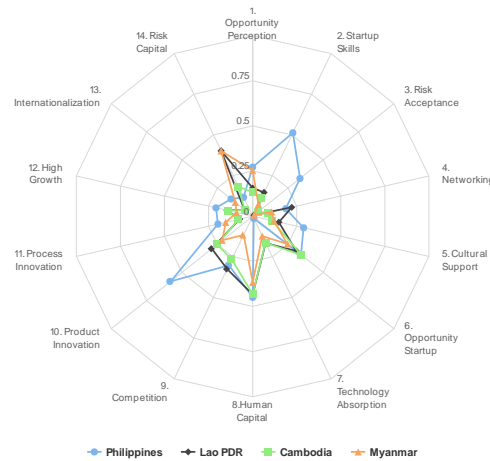


Figure 2. comparative GEI scores of ASEAN countries (lower than Philippines' GEI score)

#### 3.2 Correlation of Southeast Asian (SEA) Nations' GEI and the 14 Pillars

From Table 1, the GEI scores across SEA nations are significantly and strongly associated with all pillars except for startup skills, networking, and product innovation



It is notable that Human Capital score across the SEA nations have significant and strong associations with GEI, entrepreneurial abilities and aspirations and with individual and institutional variables. However, entrepreneurial attitudes were not found to be significantly correlated with human capital as attitude is about the general feelings involved in recognizing opportunities, knowing entrepreneurs personally, endowing entrepreneurs with high status, accepting the risks associated with business startups, and having the skills to launch a business successfully

As weakest ecosystem pillar among majority of the SEA nations except for Singapore, technology absorption is an entrepreneurial ability that has to be honed and invested with resources. According to the GEI 2018 Report, the modern knowledge economy requires information and communication technologies (ICT) to attain economic development. Grouped under the institutional variable in the GEI, Tech Absorption, is a measure of a country's capacity for firm-level technology absorption, as reported by the World Economic Forum. However, based on the correlation analysis, technology absorption is significantly and positively correlated with individual variables in the GEI. Individual-level data such as opportunity perception, skills and the like are associated with technology absorption due to the inherent ICT sophistication required of an innovative entrepreneur.

It is notable that across the Southeast Asian nations, the Philippines emerged with the highest score in startup skills and product innovation. However, based on the correlational analysis, these pillars are not found to be significantly associated with GEI scores among the SEA nations. Opportunity startup, instead, is found to be significantly associated with the GEI score among the SEA nations. GEI 2018 Report defines this as "a measure of startups by people who are motivated by opportunity but face red tape and tax payment".

#### 4. CONCLUSIONS

To be at par with Singapore which led the SEA nations in the 2018 GEI scores, the GEI interactive data tool pointed towards increase in resources, the Philippines should nourish its entrepreneurial ecosystem with resources devoted to the mix of entrepreneurial attitudes, abilities and aspirations with institutional regulations and policies. Both the government and the public sector have been continuously introducing and implementing programs that help entrepreneurship bridge innovation and economic development.

The GEI 2018 Report advocates an entrepreneurial ecosystems that would support innovative, productive, and rapidly growing new ventures. The ecosystem should be composed of interactive elements/pillars which need to be in sync in order for innovative and high-growth firms to prosper. These firms need skilled employees, specialized advice and support, access to finance, business premises and a supportive regulatory framework.

Strengthening the entrepreneurial ecosystem in the Philippines can be done by public private partnerships, banks, universities, foundations, governments and aid agencies. Just like how, the Global Entrepreneurial Ecosystem Roadmap (GEER), the Philippines should also focus on (1) identifying the holes in the global entrepreneurship ecosystem (2) laying out a roadmap for how to fill in the holes and (3) measuring progress. The goal of a well-functioning ecosystem is to improve the chances of success for entrepreneurs all over the world.

#### 5. ACKNOWLEDGMENTS

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**Table 5. Correlation Matrix Southeast Asian Nations GEI and the 14 Pillars**

		1. Opportunity Perception	2. Start up Skills	3. Risk Acceptance	4. Network-ing	5. Cultural Support	6. Opportu-nity Startup	7. Techno-logy Absorp-tion
ATT	r	0.861**	0.293	0.863**	0.695*	0.753*	0.678*	0.436
	p-value	0.001	0.411	0.001	0.026	0.012	0.031	0.208
ABT	r	0.603	-0.516	0.78**	0.343	0.741*	0.9***	0.881***
	p-value	0.065	0.127	0.008	0.333	0.014	0.000	0.001
ASP	r	0.748*	-0.224	0.796**	0.431	0.874***	0.817**	0.863**
	p-value	0.013	0.533	0.006	0.214	0.001	0.004	0.001
GEI	r	0.82**	-0.214	0.861**	0.474	0.842**	0.889**	0.8**
	p-value	0.004	0.553	0.001	0.166	0.002	0.001	0.005
Institutional	r	0.924***	-0.058	0.939***	0.713*	0.78**	0.837**	0.607
	p-value	0.000	0.874	0.000	0.021	0.008	0.003	0.063
Individual	r	0.187	-0.194	0.471	-0.140	0.775	0.560	0.794**
	p-value	0.606	0.592	0.169	0.700	0.009	0.092	0.006

		8.Human Capital	9. Competi-tion	10. Product Innova-tion	11. Process Innova-tion	12. High Growth	13. Internationaliza-tion	14. Risk Capital
ATT	r	0.497	0.553	0.379	0.643*	0.577	0.656*	0.513
	p-value	0.144	0.097	0.280	0.045	0.081	0.039	0.129
ABT	r	0.914***	0.846**	0.045	0.742*	0.87**	0.904***	0.799**
	p-value	0.000	0.002	0.902	0.014	0.001	0.000	0.006
ASP	r	0.81**	0.869**	0.342	0.761*	0.9***	0.834**	0.862**
	p-value	0.004	0.001	0.334	0.011	0.000	0.003	0.001
GEI	r	0.822**	0.878***	0.288	0.785**	0.888**	0.858**	0.754*
	p-value	0.004	0.001	0.420	0.007	0.001	0.001	0.012
Institutional	r	0.701*	0.82**	0.226	0.88***	0.705*	0.803**	0.594
	p-value	0.024	0.004	0.530	0.001	0.023	0.005	0.070
Individual	r	0.635*	0.397	0.551	0.130	0.81**	0.647*	0.787**
	p-value	0.049	0.256	0.099	0.720	0.004	0.043	0.007

*Note.* Significant at \* p < .05, \*\* p < .01, \*\*\* p < .001

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