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Fostering Academic Entrepreneurship for Economic Development: Challenges, Frameworks, and Strategies in ASEAN

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ABSTRACT: The economies of ASEAN countries have experienced growth, but many find themselves stuck in the "middle-income trap" for an extended period. Overcoming this trap is crucial as it is linked to issues such as limited job opportunities and unstable income, especially in Southeast Asia. To avoid this trap, promoting innovation is recommended, with the startup ecosystem seen as a key driver of economic growth since the 2010s. Accelerating business development through startup promotion has become a benchmark for achieving economic development. Encouraging entrepreneurship, particularly through startups, plays a significant role in boosting economies. Academic entrepreneurship, involving students, governments, and private enterprises, has emerged as an important approach. However, middle-income ASEAN economies, especially in the lower-middle-income bracket, face challenges in promoting academic entrepreneurship due to resource, funding, and connection limitations. To address this, a conceptual framework was developed to understand the theoretical relationship between the economic development stage and entrepreneurship through startups. Panel data analysis using natural logarithmic data revealed that entrepreneurship via startups is a significant predictor and a substantial factor in promoting economic development. Building on the panel data analysis results, a strategic framework for promoting economic development through entrepreneurship via startups was formulated through qualitative analysis. This involved integrating insights from academic entrepreneurship policies and the current development conditions in six selected middle-income ASEAN economies, along with the status of the startup ecosystem. Notably, there is a need for further development in financial and educational support to encourage young university students to establish companies in collaboration with governments and enterprises. Tailoring startup policies to the development status of each country is desirable.

KEYWORDS: ASEAN, Startups, Middle-income Trap, Academic Entrepreneurship, Strategic Management Frameworks

I. INTRODUCTION

Globally acknowledged, "ASEAN" stands for the Association of Southeast Asian Nations, established by the Bangkok Declaration in 1967. Founding members include Thailand, Indonesia, Singapore, the Philippines, and Malaysia, with Brunei joining in 1984 and Vietnam, Cambodia, Laos, and Myanmar added later. As of 2022, ASEAN comprises 10 member countries (MOFA, 2022). Notably, the ASEAN Economic Community (AEC) was officially formed through a signing ceremony in Kuala Lumpur on November 22, 2015. The AEC aims to enhance liberalization in capital, labor, and services, coupled with significant infrastructure development to improve connectivity across the region, anticipating further economic development in ASEAN.

Despite these positive developments, challenges lie ahead for ASEAN's future. Unexpected global issues, such as the impact of the new coronavirus since early 2020 and Russia's invasion of Ukraine in 2022, have created immeasurable effects on the world economy. ASEAN countries, currently categorized as middle-income economies, face the historical risk of falling into the "middle-income trap (MIT)," where development stagnates. In the era of globalization, success is not guaranteed by following past development experiences. Without effective responses to each country's development challenges, progress to a higher stage remains at risk.

Innovation, defined as a "new approach" or "novelty," involves integrating fresh mechanisms, technologies, and practices to create innovative market value (Christensen, 2019). It is recognized as a source of economic growth for nations (Schumpeter, 1977). To establish innovation infrastructure, combining "human resources," "financial support," "research and development expertise," and "market expansion" is crucial for efficiently fostering the capability to generate new products and services (OECD,

2023). Particularly, the startup ecosystem is expected to expedite economic growth as an innovation driver, with the promotion of startups being a benchmark in economic development since the 2010s (Kato, 2022).

Promoting entrepreneurship through startups is a significant catalyst for boosting economies. Academic entrepreneurship (Shane, 2004) has emerged as a major avenue for students, governments, and private enterprises to establish companies. However, middle-income ASEAN economies, especially in the lower-middle-income bracket, face challenges in promoting academic entrepreneurship through startups due to resource, funding, and connection limitations. Therefore, further exploration of the perspective of promoting startups through entrepreneurship is necessary to suggest fundamental strategies for business and economic progress, particularly in middle-income ASEAN economies. This study aims to contribute by formulating suggested development strategies to overcome the MIT, serving as a public-policy change to upgrade income status in Southeast Asia through academic entrepreneurship via startups, linking to social problems.

II. LITERATURE REVIEW

Literature review is composed of "Economic Outlook in ASEAN," "Innovation for Economic Development," "Startups for Driving Innovation," "Middle-income Trap in ASEAN," and "Entrepreneurship for Startups Promotion," accordingly.

A. Economic Outlook in ASEAN

ASEAN, which stands for the Association of Southeast Asian Nations, was established in 1967 through the "Bangkok Declaration" as an international organization. The founding members were Thailand, Indonesia, Singapore, the Philippines, and Malaysia, totaling five nations. Brunei joined in 1984, followed by four countries on the Indochina Peninsula: Vietnam, Cambodia, Laos, and Myanmar. Currently, ASEAN comprises 10 member countries (MOFA, 2022). A recent development occurred on November 22, 2015, with the signing of the ASEAN Economic Community (AEC) establishment in Kuala Lumpur. The AEC's creation led to the liberalization of capital, labor, and various services, accompanied by enhanced regional infrastructure and connectivity, raising expectations for further ASEAN economic development.

Table 1. The Trend of GNI per capita (Atlas Method, US$) in East and Southeast Asia

Region / Country / Year	1989	1995	2001	2007	2013	2019	2021	2022
East Asia								
China	320	540	1,010	2.510	6,740	10,310	11,930	12,850
Japan	27,470	42,570	37,380	39,310	48,850	41,970	43,450	42,440
Republic of Korea	5,380	11,820	11,950	23,440	26,980	33,830	35,110	35,990
Southeast Asia								
Cambodia	n.a.	240	310	590	960	1,560	1,580	1,700
Indonesia	520	980	710	1,580	3,710	4,070	4,170	4,580
Lao P.D.R.	210	350	300	610	1,600	2,520	2,510	2,360
Malaysia	2,330	4,120	3,570	6,540	10,600	10,960	10,710	11,780
Myanmar	40	90	140	280	1,190	1,300	1,170	1,210
Philippines	800	1,170	1,170	1,710	3,140	3,770	3,550	3,950
Singapore	10,320	23,630	22,130	36,010	54,470	58,910	63,000	67,200
Thailand	1,350	2,740	1,960	3,490	5,610	7,080	7,090	7,230
Vietnam	220	250	400	840	2,200	3,340	3,590	4,010
World	4,089	5,243	5,471	8,345	10,832	11,505	12,055	12,804

Note: "n.a." stands for missing data

***Source*:** Based on the *World Development Indicators* (2023), author made.

Analyzing the per capita Gross National Income (GNI) of ASEAN countries (Table 1), in 1989, only Singapore, Thailand, and Malaysia exceeded $1,000 USD. By 2000, the Philippines joined, and in the 2010s, Indonesia, Vietnam, and Laos also surpassed this milestone. In 2015, all ASEAN countries had per capita GNI exceeding $1,000 USD, moving out of the low-income category, typically defined as "less than $1,085 USD" based on the World Bank's income criteria (2023). Specifically, Malaysia exceeded $10,000 USD in 2012, and Thailand surpassed $5,000 USD, both reaching the upper-middle-income category ($4,096 to $12,695 USD). In 2022, Singapore reached the high-income category, while Thailand, Malaysia, and Indonesia achieved upper-middle-income status, and the Philippines, Vietnam, Myanmar, Laos, and Cambodia fell into the lower-middle-income category.

An additional significant external factor for the ASEAN economy is the shift in the international environment following the Plaza Accord. Subsequent to this agreement, Japanese companies invested foreign direct capital (FDI) in Thailand, Malaysia, and

Indonesia due to the yen's rapid appreciation. They actively transferred machinery industries, including home appliances and automobiles, from Japan to ASEAN. This triggered a successful transition for many advanced ASEAN countries (Singapore, Thailand, and Malaysia) from import substitution to export-oriented industrialization. Tran (1999) analyzed the situation until the mid-1990s, demonstrating that ASEAN, particularly in the machinery industry, had fully integrated into the dynamic division of labor in East Asia. The ASEAN Free Trade Area (AFTA) was established in January 1993, and in 2010, a comprehensive trade agreement with China, the Economic Cooperation Framework Agreement (ACFTA), was launched to reduce tariff barriers and expand intra-regional trade and investment mutually. Through these agreements, there has been a high level of economic liberalization, including the complete elimination of tariffs on goods within the ASEAN region, aiming for further long-term economic growth.

Table 2. Human Development Index in Asia (2022)

No.	Country	HDI Rank	HDI Score
1	Singapore	12	0.939
2	Japan	19	0.925
3	Republic of Korea	19	0.925
4	Malaysia	62	0.803
5	Thailand	66	0.800
6	China	79	0.768
7	Indonesia	114	0.705
8	Vietnam	115	0.703
9	The Philippines	116	0.699
10	Bangladesh	129	0.661
11	India	132	0.663
12	Lao P.D.R.	140	0.607

***Source*:** UNDP (2023)

Table 3. Ease of Doing Business in Asia (D/B 2020)

No.	Country	EDB Rank	EDB Score
1	Singapore	2	86.2
2	Republic of Korea	5	84.0
3	Malaysia	12	81.5
4	Thailand	21	80.1
5	Japan	29	78.0
6	China	31	77.9
7	India	63	71.0
8	Vietnam	70	69.8
9	Indonesia	73	69.6
10	The Philippines	95	62.8
11	Lao P.D.R.	154	50.8
12	Bangladesh	168	45.0

***Source*:** *World Development Indicators* (2023)

Additionally, a crucial set of statistical data is provided by the UNDP (2023), which introduced the Human Development Index (HDI). This index incorporates life expectancy, secondary education enrollment rates, and GNI per capita, aligning with Sen's "Capability Approach" (Sen, 1999, p.5). The HDI underscores the importance of gauging poverty beyond individual income and globally ranks nations based on their index scores (UNDP, 2023). Notably, there exists a substantial disparity in the HDI figures within Southeast Asia; certain economies like Singapore, Malaysia, and Thailand secure higher rankings, whereas others, including Bangladesh, India, Indonesia, Vietnam, Lao P.D.R., and the Philippines, are clustered below the 110th position in 2021 (refer to Table 2).

Furthermore, the World Bank (2023) offers another significant metric for evaluating business development through the Ease of Doing Business Index (EDBI). This index gauges the ease of conducting business at regional or national levels, ranking economies on a scale of 1 to 190 based on their overall ease of doing business scores. A higher rank (lower numerical value) signifies a more favorable regulatory environment for business activities (World Bank, 2022). Similar to the trend observed in the Human Development Index (HDI), Table 3 illustrates that in 2020, countries like the Philippines, Cambodia, Lao P.D.R., and Myanmar held rankings below 100, whereas Singapore, Malaysia, and Thailand secured positions within the top 50, as sourced from the World Bank for the year 2020. Intriguingly, despite India falling into the lower-middle-income category, it maintained a relatively higher rank of 63rd in 2020.

B. Middle-income Trap in ASEAN

Gill and Kharas (2007) established a classification of global economies into high, middle, and low-income groups and introduced the concept of the Middle-Income Trap (MIT) in 2006. The MIT characterizes a prolonged struggle to progress from low and middle-income stages to higher levels of prosperity. Notably, Southeast Asian economies like Vietnam, Indonesia, and the Philippines have grappled with remaining in the lower-middle-income category for over two decades, facing challenges in elevating per capita income. The income trends in Southeast Asia since 1987 are depicted in Table 4. Initially, the four

economies labeled as low-income in 1987 (Indonesia, Vietnam, India, and China) have advanced to at least the Lower-Middle-Income (LMIE) threshold. China, in particular, attained Higher-Middle-Income (HMIE) status since 2010, boasting an annual economic growth rate exceeding 10% for the past 15 years. Moreover, certain LMIEs in 1987 (Malaysia and Thailand) achieved HMIE status in 1992 and 2010, respectively. As a result, by 2021, Southeast Asia included several LMIEs and HMIEs, indicating an improvement in its income status.

Tran (2016) presented a developmental framework progressing through low-income, middle-income, and high-income stages, outlining four income groups: low, lower-middle, higher-middle, and high-income economies. The author proposed strategies to overcome the MIT by addressing two syndromes: the Lower-Middle-Income Trap (LMIT) and the Higher-Middle-Income Trap (HMIT). Recommendations included enhancing development institutions and stimulating capital-investment growth to escape LMIT, while focusing on total factor productivity (TFP) and human resource development to overcome HMIT (Tran and Karikomi, 2019). The Asian Development Bank (2017) identified factors contributing to the MIT, such as unfavorable demographics, low economic diversification, inefficient financial markets, inadequate infrastructure, low innovation, weak institutions, and an insufficient labor market. In contrast, essential conditions promoting economic development encompassed infrastructure, industrialization, efficient financial markets, a robust labor market, governance, social welfare, and political institutions (ADB, 2017; Allen, 2012; Otsuka, 2020). When examining factors contributing to the MIT in Southeast Asia, researchers frequently emphasized the significance of promoting industrialization for economic development.

Table 4. The Trend of Income Level Transition in East, Southeast, and South Asia

Countries in East Asia	Income stage in 1987	Years to be lower-middle Income	Years to be higher-middle Income	Income stage in 2023	Years to stay under MIT
Malaysia	LM	1987	1992	HM	31
Thailand	LM	1987	2010	HM	13
Indonesia	L	2003	2021	HM	20
Philippines	LM	1987	-	LM	36
Vietnam	L	2009	-	LM	14
China	L	1997	2010	HM	26
India	L	2007	-	HM	16

Note: L = Low income, LM = Lower-middle income, HM = Higher-middle income.

Source: Referencing from Karikomi (2017), author updated and revised.

Tran (2016) outlined the prerequisites for ASEAN countries to enhance their future status. According to the analysis, lower-middle-income nations should concentrate on implementing reforms and improving the efficiency of resource allocation, while upper-middle-income countries should give priority to enhancing their human resources and advancing their comparative advantage structure through the promotion of science and technology. Additionally, Tran and Karikomi (2019) investigated the prolonged stagnation experienced by many emerging nations in the middle-income stage, commonly known as the MIT. They analyzed the barriers obstructing progress to a higher level and underscored policy considerations crucial for overcoming these challenges. The authors highlighted the significance of transitioning to a more value-added industrial structure for catch-up industrialization. They cautioned against "premature de-industrialization," where a shift from manufacturing to the low-productivity service industry could result in prolonged economic stagnation. The policy challenges identified for addressing this stagnation aligned with those outlined by Tran (2016).

To escape the MIT, one of the most effective solutions for ASEAN economies is to foster innovation across industries through digitalization. Digitalization involves converting information and data into a format understandable by computers and electronic devices. This process commonly entails the transformation from analog to digital format, converting information like text, images, audio, and video into digital data easily stored, transmitted, edited, and analyzed using computers (Lib Consulting, 2023). For instance, digital cameras store photos as digital images, facilitating easy editing and sharing on computers. Driven by advancements in information technology, digitalization enables efficient management, sharing, and processing of data. It not only enhances business processes and communication but also sparks innovative changes in various industries and fields, leading to the creation of new business models and services. Particularly, Information and Communication Technology (ICT), a comprehensive term for technologies enabling the collection, processing, transmission, sharing, and storage of information (NTT, 2023), plays a vital role. These technologies support efficient data and information management, communication, and are believed to offer numerous benefits to individuals, organizations, and society as a whole. ICT is widely employed in various

domains, including personal life, business, government, and education, closely linked to digitization. The development of ICT is anticipated to bring advantages such as swift access to information, knowledge sharing, and efficient business processes to modern society. Baldwin (2018) notes that the reduction in service linkage costs through ICT in international task outsourcing creates opportunities for the economic development of developing countries, fostering the transfer of knowledge from advanced nations. Importantly, Hara and Hashi (2023) demonstrated that the impact of ICT advancement on manufacturing and service industries in Southeast Asia varies by development stage, providing insights into tailored ICT utilization strategies for each stage of development.

C. Innovation for Economic Development

According to Christensen (2019), innovation is the integration of new systems, technologies, and practices to create novel value in the market. Schumpeter (1977) introduced the concept of "creative combination," involving the merging of existing goods or services to generate new societal value. Sudo (2018) later consolidated Schumpeter's five types of innovation into two categories: (A) innovation related to exploring new products and markets and (B) innovation related to enhancing existing production and distribution processes. Sudo emphasized the increasing importance of process innovation for efficiency improvement due to relatively stagnant economic growth rates.

The theoretical explanation of economic growth, which refers to the expansion of overall value and production activities in a country or region, is based on Solow's (1956) residual model. This model suggests that economic growth sources include qualitative factors like technological advancement and human capital, represented as the residual term (α) in endogenous growth theory. Subsequent developments by Romer (1986) and Lucas (1988) formed the first wave of endogenous growth theory, demonstrating how innovation enriches these residual elements. The second wave, led by Romer (1990) and Grossman and Helpman (1991), introduced the intentional Research and Development (R&D)-driven endogenous innovation model. Recent studies, such as Linton and Warsh (2007), underscore the role of a knowledge-based economy in driving economic growth.

Key factors explaining how innovation drives economic growth include increased investment, enhanced productivity, knowledge accumulation and sharing, improved competitiveness, and the development of new markets and value. Innovation sparks enthusiasm for new ideas or technologies, leading to increased investment, the emergence of new businesses, and enhanced productivity. It also contributes to knowledge accumulation and exchange, improves competitiveness, and creates new markets and value through the introduction of fresh concepts and technologies.

NEDO (2020) outlines a three-fold framework for innovation, considering perspectives from "Input, Output, to Outcome." "Input" involves business activities related to innovation generation, while "Output" refers to the introduction of products or services with new value. "Outcome" signifies societal changes and economic growth resulting from business promotion. From this perspective, innovation enhances economic vitality, generates opportunities, boosts productivity and competitiveness, and drives sustainable economic growth. Strengthening the innovation infrastructure is crucial, with corporate innovation activities, collaboration with educational institutions, research organizations, talent acquisition, government grants, and institutional support being essential components.

D. Startups for Driving Innovation

Startups are defined as companies with the capacity for substantial growth by creating new value or services, irrespective of their size or stage (Baldridge and Curry, 2022). Key characteristics of startups include innovation, scalability, and problem-solving. Essentially, startups are established with the primary goal of fostering innovation, rapidly expanding their businesses within a short timeframe, and addressing challenges through the introduction of new ideas and projects to the market (Kato, 2022). Baldridge and Curry (2022) underscore the benefits of startups, including significant autonomy, flexibility, and speed.

To delve into how startup companies secure funding, once a startup validates market acceptance of its idea, it initiates a funding round known as the "seed round." As the company continues to grow, it may undertake additional funding rounds such as Series A, B, and C. In these rounds, funds are raised from venture capitalists and major investors, which are then utilized for product development, marketing, and the implementation of growth strategies. Other funding options encompass support from angel investors and funding through IPOs or acquisitions, but participation in a seed round is common (Kato, 2022).

The process of business development for startups involves eight significant steps to generate revenue. Beginning with the conceptualization of ideas, rooted in university research results, technology, and concepts, the development of a practical business concept serves as the starting point. Once an idea is formulated, the second step involves creating a comprehensive business plan, encompassing market analysis, competitive analysis, revenue models, growth strategies, and funding plans. Building a suitable team is the third step, with the recruitment or collaboration of members possessing expertise in business,

technology, marketing, and finance being critical. The fourth step involves developing a prototype and demonstrating product design and features, especially for technology-based startups. The fifth step emphasizes safeguarding the originality of ideas or technology through intellectual property rights like patents, trademarks, and copyrights. Funding, considered a pivotal factor for startup growth, is the sixth step, involving the persuasion of investors based on the business plan to secure necessary funds. After securing funds, the seventh step involves executing growth strategies, encompassing market implementation, product development, customer acquisition, and marketing activities. The confirmation of market acceptance and the objective of scaling up become crucial at this stage. Lastly, in the eighth step, startups explore partnerships with universities, other companies, and government agencies, seeking opportunities for technology licensing, joint research, and market entry to achieve sustained corporate growth. Through these processes of fundraising and business development, startups are deemed to have a significant economic impact in terms of entrepreneurial competitive advantage, innovation, and employment. Notably, well-known U.S. companies like Facebook, Google, Uber, and Twitter began as small organizations and rapidly evolved into industry giants, underscoring the substantial effects of startups (Kato, 2022). Consequently, many countries have intensified efforts to promote startups since 2017, recognizing the importance of economic development through innovation by startups.

Regarding the relationship between venture capital and startups, a noteworthy example from the U.S. involves universities investing in venture capital (V/C), which then invests in startups. Successful profits from these startups return to the university, and the cycle continues as the university reinvests in V/C, which subsequently invests in more startups. This cyclic pattern is prevalent in the U.S., with university endowments constituting a significant portion of the substantial funds that invest in venture capital (Nishimura, 2023). In summary, startups contribute to promoting economic activity by receiving support from universities and venture enterprises, fostering innovation within a short period, and aiming for sustained corporate growth. Additionally, in the United States, the government often provides financial assistance until the products or services of startup companies are released to the market (NEDO, 2020).

Table 5. The Trend of the Startups in South and Southeast Asian Economies from 2015 to 2023

			The Number of Startups	
Country	Income Level	State of Startups Development	2015	2023
Cambodia	Lower-middle Income	Infancy	4	16
Lao P.D.R.	Lower-middle Income	Infancy	1	2
Myanmar	Lower-middle Income	Infancy	13	48
Philippines	Lower-middle Income	Fast-Growing	40	330
Vietnam	Lower-middle Income	Growing	56	134
Indonesia	Higher-middle Income	Frontier	78	2,479
Malaysia	Higher-middle Income	Fast-Growing	57	315
Thailand	Higher-middle Income	Growing	33	171
Singapore	High Income	Frontier	370	1,098

Note: Startups with over $1 million funding raised.

***Source*:** Based on ASEAN and UNCTAD 2022 (2022) and DataIndonesia.id (2023), author summarized.

Table 5 outlines the startup trends in ASEAN economies, revealing a significant surge, particularly in Malaysia, Thailand, the Philippines, and Vietnam. The count of startups in ASEAN securing funding exceeding $1 million almost tripled, escalating from 652 in 2015 to 4,603 in 2023, with Singapore and Indonesia contributing to over 75 percent of these startups. Even emerging economies such as the Philippines, Thailand, Vietnam, along with the "Infancy" status economies of Cambodia, Lao P.D.R., and Myanmar, are experiencing a growth in startups, albeit at a smaller scale. Notably, several economies, including Malaysia and the Philippines, witnessed a substantial increase in the number of startups, surpassing 300 in 2023 compared to less than 50 startups in 2015, categorizing them as “Fast-Growing.” Thailand and Vietnam have elevated the number of startups to approximately 150, classifying them as “Growing.” Lastly, Indonesia experienced a remarkable surge in the number of startups, reaching 2,479 in 2023 compared to 78 in 2015, earning the classification of “Frontier,” along with Singapore.

Table 6. The Plans and Purposes of the Startups Promotion, mainly in ASEAN Economies.

Country	A Summary of Startups Promotion Plans and Purposes from the National Governments' Development Plans and other sources
Cambodia	Doing a study to develop industrial parks for SMEs to promote linkages between foreign enterprises and domestic enterprises in the context of regional integration (Royal Government of Cambodia, 2016)
Indonesia	The Ministry of Investment and the Indonesia Investment Coordinating Board (BKPM) collaborate with various partners, including Gojek and the Ministry of State-Owned Enterprise, to assist SMEs in their internationalization efforts. Indonesia Eximbank offers financial support to export-focused SMEs and their global initiatives, aiding in the expansion of their businesses. There are two types of funding options available: (i) domestic financing, encompassing areas like working capital, export financing, investment export financing, and supplier bill purchasing; and (ii) overseas financing, covering aspects such as overseas investment financing, overseas project financing, and buyer's credit. 3.The Bandung Institute of Technology has introduced the SME Application to promote the digitization and global expansion of Indonesian SMEs. Businesses joining this platform can analyze products and markets using provided data, and SMEs receive coaching and training from the Institute. (ASEAN and UNCTAD, 2022)
Lao P.D.R.	To include the subject of entrepreneurship into the general, vocational, and higher education To stimulate young people to consider business careers To create incubators for management and technological application Training for those who are interested in startups To increase the women to become entrepreneurs To Accelerate franchise businesses (ASEAN (2012); Lao P.D.R. Government (2022))
Myanmar	To promote private sector investments by removing the remaining restrictions for FDI in rice milling industry and legal and regulatory obstacles to enhance the role of the private sector in providing products (Myint et al., 2016)
Philippines	1. To expand business opportunities for Startups and MEMEs through investment, financial improvement, production network, and improvement in productivity, efficiency, and resiliency (NEDA, 2021). 2. To accelerate support for the MSMEs' digitalization and the development of startups. (NEDA, 2023)
Vietnam	1. To support at least 20 000 female entrepreneurs in starting businesses, providing them with training and support in the process. 2. To finance students' startup ideas in all universities. 3. To establish the National Innovation Center (NIC) in 2019 for providing various types of support, e.g.) networking opportunities, working space, mentorship programs, and funding. 4. The eligible companies can have their corporate income tax rate at 10% for the first 4 years, and a 50% tax reduction in the next 9 years. (Asia Perspective (2022); Vietnam Government (2022))

***Source*:** Based on Hara (2023, p.58), author revised and updated.

Meanwhile, an examination of development plans reveals that Cambodia, Indonesia, Lao P.D.R., Myanmar, the Philippines, and Vietnam, particularly in the Lower-Middle-Income Economies (LMIEs), have official national development strategies to promote startups (see Table 6). Despite limited progress in the number of startups, Lao P.D.R. has specific plans, albeit constrained by budget limitations. Cambodia and Myanmar lack dedicated plans due to a lack of awareness about the significance of startups for sustainable economic development. In contrast, Vietnam has implemented four plans focusing on human resource development and business incubation. The Philippines, as outlined in the 2021 Philippine Development Plan (PDP), emphasizes a strategic framework for expanding startups and Micro, Small, and Medium Enterprises (MSMEs) to improve the business environment and facilitate ease of doing business for income level upgrades (NEDA, 2021). A review of the updated PDP for 2023 indicates a continued emphasis on promoting startups and micro, small, and medium-sized enterprises (MSEs) through digitalization (NEDA, 2023). Lastly, Indonesia has experienced a substantial increase in the number of startups over the past eight years, growing from 78 enterprises to 2,479 enterprises. This growth is attributed to support for entrepreneurs, including backing from local banks, governmental financial assistance, and support from research institutes to promote digitization and global expansion of local enterprises.

E. Entrepreneurship for Startups Promotion

Entrepreneurship denotes the process of recognizing, initiating, and overseeing a business venture or startup, typically involving the generation or extraction of economic value coupled with an element of risk. It encompasses the capacity and willingness to develop, organize, and manage a business enterprise for profit, alongside associated uncertainties. Entrepreneurs, as innovators, establish and operate new businesses, assuming financial risks with the expectation of making a profit. They confront challenges, identify opportunities, devise solutions, and influence market trends.

Entrepreneurial pursuits frequently entail innovation, where the entrepreneurial mindset integrates various skills, striking a balance between comprehending business operations and fostering innovation. Successful entrepreneurs exhibit traits like curiosity, creativity, and a capacity for calculated risk-taking. Entrepreneurship extends to social entrepreneurship, which centers on creating products and services that address social needs without the primary aim of profit. In essence, entrepreneurship involves the process of launching and managing a business venture, often entailing risk and innovation, with the objective of creating economic value and turning a profit. The significance of entrepreneurship, particularly in the context of fostering startups in the digitalization era, lies in its capacity to drive innovation, economic growth, job creation, and societal impact. Digitalization positively influences entrepreneurial activity, leading to sustainable competitiveness. Dabbous, Barakat, and Kraus (2023) conducted an evaluation of the impact of digitalization on entrepreneurial activity and sustainable competitiveness, revealing its positive effects. This study incorporated digitalization as a major disruptive factor shaping contemporary life, demonstrating its positive impact on entrepreneurial activities and sustainable competitiveness. Connectivity, Internet usage, and digital integration emerged as primary components affecting sustainable competitiveness, while digital skills and digital public services held less significance. Digital entrepreneurship involves the creation and pursuit of entrepreneurial opportunities through technological platforms, contributing to economic growth, job creation, and innovation. Entrepreneurship, including digital entrepreneurship, is recognized as a key pillar for economic growth, job creation, and innovation (Antoniazzi and Smuts, 2020). In summary, entrepreneurship, especially in the digitalization context, plays a crucial role in driving innovation, economic growth, job creation, and societal impact. It facilitates the creation of new business opportunities, leverages technological platforms, and fosters a culture of innovation within organizations, contributing to sustainable competitiveness and economic development.

Entrepreneurship education assumes a crucial role in cultivating entrepreneurial intentions and skills among students, thereby contributing to economic development, job creation, and societal progress. Porfírio et al. (2022) underscored the positive influence of entrepreneurship education on students' entrepreneurial attitudes, course relevance, engagement with teachers, applied learning, and perception of contributing value to communities. Additionally, Ferrarin (2023) highlighted that entrepreneurship education aids in developing real-life skills such as problem-solving, critical thinking, teamwork, and resilience. This, in turn, increases the likelihood of students starting a business and attaining higher income. Entrepreneurship education encourages action-based learning, crucial for instilling an entrepreneurial mindset, resonating with students through diverse components like writing, building, and public speaking (Ferrain, 2023). Ultimately, entrepreneurship education proves instrumental in nurturing entrepreneurial intentions, skills, and mindsets among students, contributing to economic development, job creation, and the cultivation of real-life skills essential for success in the modern workforce.

Higher education provides an environment conducive to nurturing entrepreneurs. OECD (2008) examined the current role of higher education institutions in teaching entrepreneurship and transferring knowledge and innovation to enterprises. The analysis covered key issues, approaches, and trends across various countries, encompassing experiences from the most entrepreneurial universities in North America to advanced European models and emerging practices in Central and Eastern Europe. Entrepreneurship engagement in higher education is rapidly expanding and evolving, requiring proper support and development. The need to expand existing entrepreneurship efforts and introduce creative and effective approaches is emphasized, building on best practices highlighted globally (Mitra and Manimala, 2008). This insight offers inspiration for those in higher education seeking to enhance their entrepreneurship teaching and knowledge-transfer activities, as well as for policymakers aiming to provide suitable support initiatives and frameworks. However, the level of collaboration between research and business, as well as the promotion of commercialization, varies depending on the stage of development (Hara, 2023).

Since the 21st century, "academic entrepreneurship" refers to companies leveraging ideas and resources from universities to establish new businesses, serving as agents in fulfilling the university's mission of "implementing research results into society" (Hasegawa, 2019). The concept traces its origin to the work of the American scholar Shane in 2004. University-based startups are more likely to generate innovation compared to regular companies, primarily due to the technical significance they possess. Strong connections with universities provide individuals such as university professors and students, who have produced research

results, along with well-equipped research facilities, numerous opportunities to utilize human resources and research infrastructure (Shane, 2004). Entrepreneurship education assumes a crucial role in the economic development of the ASEAN region. Numerous Southeast Asian countries have invested in entrepreneurship education through programs and training, especially in higher learning institutions. Research underscores the importance of entrepreneurship education in addressing unemployment and underemployment, emphasizing the need for a skill-based education system and the development of awareness about entrepreneurship to create an entrepreneurial environment conducive to economic development. Governments in the region are initiating alternative development strategies aimed at reducing unemployment, redistributing economic opportunities, and revitalizing entrepreneurship education, recognizing its pivotal role in economic development.

While the ASEAN economy has experienced economic development through startups in the era of digitalization, challenges persist in promoting startups. Despite government support and openness to foreign investment, entrepreneurs in ASEAN encounter ground-level realities that complicate business operations. Challenges include hurdles related to land, licenses, and various approvals. Infrastructure inadequacies, such as poorly developed roads, insufficient power supply, urban issues, and water shortages, further compound these challenges (Otsuka, 2020). In summary, entrepreneurs in ASEAN face challenges related to regulatory hurdles, infrastructure limitations, and economic and political factors. Successfully

III. PROBLEM STATEMENTS

A. Identification of Study Gaps

Facilitating the growth of entrepreneurs who drive innovation is imperative for a nation's economic advancement, with startups serving as the cornerstone of this pursuit. This holds true not only for OECD countries but also for other developing nations, where the expansion of new products and services, coupled with employment promotion, can be realized through startups. Particularly in middle-income countries within the ASEAN region, the creation of an environment and institutional infrastructure to foster startups becomes pivotal and of significant importance. Additionally, while higher education plays a role in nurturing entrepreneurs, it is crucial to establish strategies for promoting ventures and startups within universities. Hara (2022) underscored the significance of increasing the enrollment rate in tertiary education, as well as secondary education, for middle-income ASEAN economies to avoid the MIT and promote industrialization through long-term human capital investment. Despite this, there is a notable dearth of research on the theoretical relationship between entrepreneurship and economic development in middle-income ASEAN countries, especially in the context of assessing whether startups can contribute to economic development in the developing world, as identified in previous studies.

Subsequently, leveraging the outcomes of this empirical analysis, an evaluation will be conducted to assess the disparity between academic entrepreneurship, particularly through the promotion of startups, in the development strategies of ASEAN countries and the actual challenges faced in development. Notably, Xavier et al. (2015) constructed a conceptual framework representing the impact of entrepreneurship on economic development, but economic development stages were not considered in the framework, and the context of academic entrepreneurship was overlooked. In addressing these gaps, the analysis aims to identify practical challenges for formulating more effective strategies. Thus, this paper endeavors to create a strategic framework relevant to economic development policies through entrepreneurship, with a specific focus on expediting the growth of startups.

B. Research Purposes

The objective of this paper is to make a contribution to economic development in the ASEAN region by conducting an empirical analysis using panel data. The analysis will focus on examining the impact of entrepreneurship, particularly through startups, on GDP per capita. This study takes into consideration the various stages of development and aims to formulate a theoretical framework on entrepreneurship, with a specific emphasis on the promotion of startups.

C. Research Questions (RQs) and Hypotheses

RQ1. Will entrepreneurship through startups promotion affect the GDP per capita in ASEAN, taking into account the different stages of development?

-H_0: Entrepreneurship through startups promotion cannot significantly affect enhancement in the GDP per capita in ASEAN.

-H_1: Entrepreneurship through startups promotion can significantly affect enhancement in the GDP per capita in ASEAN.

RQ2. How should the gap between academic entrepreneurship promotion for development strategies in ASEAN countries and the actual development challenges be closed with the aims of extracting practical challenges for formulating more effective strategic management?

IV. FRAMEWORKS

A. Theoretical Frameworks on the Relationship between Entrepreneurship and Economic Development

Theoretical framework denotes a comprehensive collection of concepts formulated by scholars to illustrate the connection between key variables, particularly in the context of quantitative research (Dickson et al., 2018). In the specific context of contributing to economic development, particularly through the promotion of startups in developing nations, the theoretical framework encompasses two main perspectives: economic development and the status of entrepreneurial growth.

Drawing on key concepts such as the "turning point" (Lewis, 195) and "take-off" (Rostow, 1956), Tran (2016) developed a framework that progresses through low-income, middle-income, and high-income stages, theoretically conceptualizing these stages based on four income groups. The author explored strategies to overcome the Middle-Income Trap (MIT), distinguishing between the lower-middle-income trap (LMIT) and the higher-middle-income trap (HMIT). For the LMIT, the proposed solution involved improving development institutions and creating room for capital-investment growth, while overcoming the HMIT required enhancing total-factor productivity (TFP) and investing in human resource development (Tran, 2016).

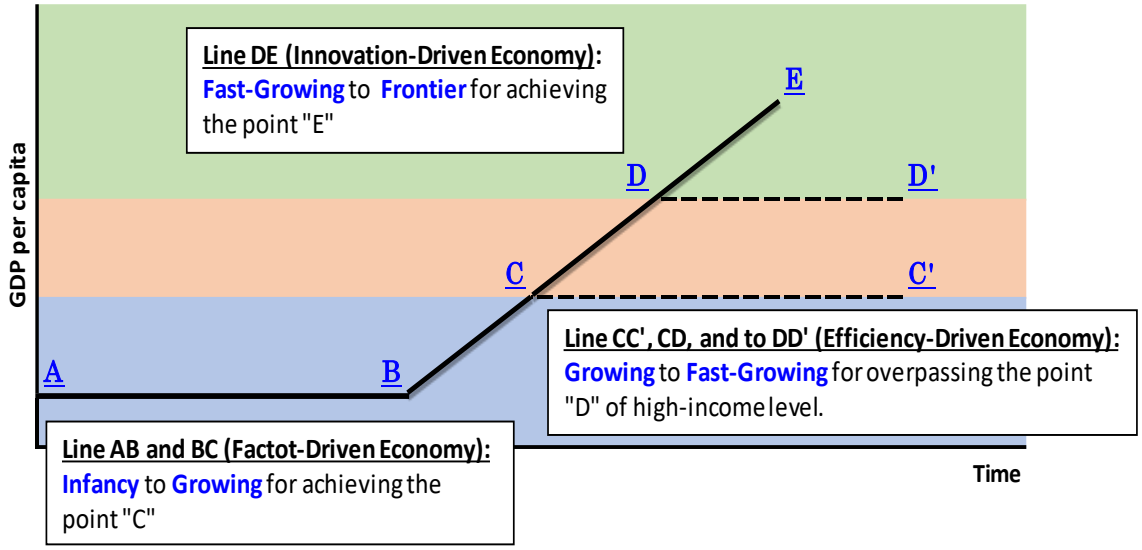

Figure 1. A Theoretical Framework on Development Stages of an Economy and Entrepreneurship through Startups

Source: Based on Ács and Naudé (2011), Tran (2016), ASEAN and UNCTAD (2022), and Hara (2023), author updated.

The ASEAN Investment Report introduced a framework categorizing stages as "infancy," "growing," "fast-growing," and "frontier." Additionally, Ács and Naudé (2011) proposed a conceptual framework based on a country's development level, identifying three groups: "Factor-driven economy," "Efficiency-driven economy," and "Innovation-driven economy," each with specific focus areas for promoting entrepreneurship at different developmental stages. Combining insights from Ács and Naudé (2011), Tran (2016), ASEAN, and UNCYAD (2022), a new framework emerges. Figure 2 illustrates the relationship between economic development stages and entrepreneurial development status by income levels, akin to Tran's (2016) model. The blue-highlighted Line AB and BC represent the low-income stage as a "factor-driven economy," transitioning from "Infancy" to "Growing" (Figure 1). The maroon-highlighted Line CC’ depicts the shift from "Growing" to "Fast-Growing," an "efficiency-driven economy," aimed at overcoming the LMIT. Finally, the green-highlighted Line C-D and DD’ symbolize the progression from "Fast Growing" to "Frontier," an "innovation-driven economy," culminating in escaping the HMIT. This framework clarifies the relationship between economic development and entrepreneurial growth status, serving as a basis for understanding the impact of opening businesses on GNI in the context of MIT.

B. Conceptual Frameworks on the Strategic Management Framework of Startups Promotion

The second aspect concerns the perspective of academic entrepreneurship strategies in middle-income ASEAN countries for promoting economic development. Various frameworks can be considered to formulate a strategic framework for the promotion of startups in this context. Firstly, the Global Entrepreneurship Monitor (GEM) developed a conceptual framework representing the relative impact of entrepreneurship on national economic development. The framework assumes that national economic growth results from individuals' personal capabilities to identify and seize opportunities, influenced by environmental factors affecting decisions to pursue entrepreneurial initiatives (Xavier et al., 2014). This conceptual model, dynamically evolving

to incorporate advances in understanding the entrepreneurship process, emphasizes the complex feedback system, explicitly outlining relationships between social values, personal attributes, and entrepreneurial activity. It recognizes entrepreneurship as part of a feedback system mediating the effect of national framework conditions on job creation and economic or social value creation. Entrepreneurial activity is shaped by an individual's perception of an opportunity, capacity to act, and distinct environmental conditions, benefiting the environment through social value and economic development (Xavier et al., 2014).

Additionally, the framework proposed by Hara, Karikomi, and Hashi (2023) for the development strategy of middle-income ASEAN countries and the analytical framework presented by the WWP (2022) for strategic development are relevant. Recognizing the concentration of both low-middle-income and high-middle-income countries in ASEAN, it is crucial to formulate separate strategies for each income stage due to significant variations in development and industrial levels. The essential components required to build an academic entrepreneurship strategy need identification. Following the approach by Hara and Hashi (2023), the task of promoting digitalization is divided into two main categories: Implementation and Formation. In the former, "Analysis," "Current Strategies," and "Challenges" are listed, while in the latter, "Execution" and "Management & Evaluation" are established. The categorization aligns with the theory by Ács and Naudé (2011) on startups promotion status: infant, growing to fast-growing, and frontier. This setting allows the extraction of information on the policy status and challenges of entrepreneurship via startups in the GDP per capita of ASEAN countries from documents issued by governments and international organizations.

V. METHODOLOGY

A. Data-Collection

The research objective is to formulate a strategy for economic development by enhancing academic entrepreneurship through the promotion of startups in middle-income ASEAN countries, taking into account the analytical framework described previously. To address RQ1 quantitatively, an analysis was conducted to examine whether entrepreneurship contributes to economic development. The methodological approach involved panel data analysis to explore the impact of entrepreneurship, specifically via startups, on the GDP per capita of middle-income ASEAN countries. Data were collected over a 17-year period from 2004 to 2020, encompassing 31 countries, including 11 ASEAN countries and 20 advanced countries. This resulted in approximately 527 data points, with information primarily sourced from the World Bank's World Development Indicators (WDI, 2023) and United Nations statistical data. The dependent variables included the GDP per capita, while the independent variable was the broadband utilization rate. Controlled variables, such as the capital formation rate, labor force participation rate (individuals aged 15 to 64), the Human Development Index, and the Rate of Opening a Business, were incorporated into the analysis, as presented in Table 7.

For RQ2, qualitative analysis will be conducted, considering the categorization of middle-income countries into low-middle-income and high-middle-income groups. Strategies for each income stage will be examined, with a particular focus on the GDP per capita. Comprehensive assessments of strategic challenges and desired directions for each industry will be undertaken. A literature review on entrepreneurship via startups promotion policies for upgrading the GDP per capita of six lower-middle-income ASEAN economies will guide the development of strategic management proposals. Consequently, 12 sources will be utilized for this research effort.

Table 7. Variables of Quantitative Analysis:

Type	Variables	Definition	Expected Direction
DV	GDP per capita (US$)	Gross Domestic Product per capita with US$ Atlas Method (WDI, 2023).	N/A
IV	Startups	Score of Starting a Business based on Database year of 2020 (WDI, 2023)	(+)/(-)
CV	Capital	Capital stock by domestic savings (WDI (2023); OECD (2023)).	(+)
CV	Labor	Labor force participation rate for ages 15+, total (%) (WDI, 2023)	(+)
CV	Digitalization	Fixed-broadband subscriptions referred to as fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s divided by population and multiplied by 100 (ICT, 2023)	(+)
CV	Human Capital	Human Development Index (HDI) is used to see the development status from the perspectives of health, education, and income (UNDP, 2023)	(+)

Note: DV (Dependent Variable), IV (Independent Variable), and CV (Controlled Variable)

Source: Author

B. Methodology

To address RQ1, a mixed-method approach was employed, combining elements of quantitative and qualitative research. This approach was chosen to provide a more comprehensive understanding, leveraging the strengths of both methods, including generalizability, contextualization, and credibility (George, 2021). The mixed-method approach is particularly beneficial when investigating complex phenomena like the performance of online education, where a singular quantitative or qualitative analysis may not suffice.

Given the multifaceted nature of educational performance influenced by various factors, an explanatory sequential design was chosen. This design involves conducting quantitative data collection and analysis first, followed by qualitative data collection and analysis to provide additional insights and context.

The procedural steps to answer RQ1 are outlined as follows:

The initial phase involves a quantitative analysis examining the relationship between entrepreneurship achieved through startups and economic development in middle-income countries. The focus is on determining if entrepreneurship contributes to the growth of GDP per capita, a key driver of economic development. Growth models, including the traditional Cobb-Douglas production function, Solow's (1956) residual model, and the Total Factor Productivity (TFP) framework, were employed. Drawing inspiration from previous studies (Nguyen et al., 2022, Hara, 2023, Hara and Hashi, 2023), Pooled Ordinary Least Squares (POLS) models, Fixed Effect Models, and Random Effect Models were applied to investigate the impact of entrepreneurship on the GDP per capita over a 17-year period (from 2004 to 2020). The Cobb-Douglas production function, following the methodologies of the mentioned studies, was utilized in the analysis.

$$Y_{it} = A_{it}K_{it}^{\alpha 2}L_{it}^{\alpha 3} \quad (1)$$

In the given equation, "Y" represents the total production, "K" denotes the input of capital, and "L" stands for labor. The superscripts indicate the output elasticities of capital and labor, while subscripts "(i)" and "(t)" represent individual items and time periods, respectively. To facilitate analysis, Equation (1) was transformed into a logarithmic form, presenting a linear regression equation, expressed as follows:

$$lnYit = lnAit + \alpha 2 lnKit + \alpha 3 lnLit \quad (2)$$

where applying the format provided in Equation (2) above, each indicator is substituted accordingly. In this context, "MFC/SVC" denotes the GDP per capita, respectively. "K" represents Capital (Gross Capital Formation Rate), "L" stands for Labor (Labor Force Participation Rate), and the remaining factor "A" signifies Total Factor Productivity (TFP), elucidating output growth influenced by other production factors. The specific equation derived by substituting these indicators is as follows:

$$GNIit = \alpha 2 Capitalit + \alpha 3 Laborit + Ait \quad (3)$$

Additionally, these elements are commonly known as "omitted factors." Two parameters, α2 and α3, play a role in elucidating the responsiveness of output concerning "K" and "L," respectively. In light of this, TFP can be calculated using the subsequent formula:

$$A_{it} = \alpha + \alpha 4 HDI_{it} + \alpha 5 ICT_{it} + \alpha 6 STU_{it} + \varepsilon_{it} \quad (4)$$

The provided estimation formula is derived from Solow's residual model (1956), wherein factors beyond labor and capital, such as technology and human capital, contribute to economic growth. Using "HDIit" as a proxy variable for the Human Development Index (representing human capital) and "ICTit" for ICT diffusion, α1 represents a constant, and α4 and α5 signify the responsiveness of output to HDIit and ICTit. εit represents the error term, and α6 corresponds to "Startups," emphasizing entrepreneurship for sustainable economic development. An essential assumption is that ICT diffusion is linked to TFP growth and enhances GDP per capita. Subsequently, by substituting (4) into (3), the final regression model is articulated as follows:

$$GNI_{it} = \alpha + \alpha 2 Capital_{it} + \alpha 3 Labor_{it} + \alpha 4 HDI_{it} + \alpha 5 ICT_{it} + \alpha 6 STU_{it} \varepsilon_{it} \quad (5)$$

In terms of econometric methodologies, we applied estimation techniques such as Pooled Ordinary Least Squares (POLS), Fixed Effects Models, and Random Effects Models to assess the influence of entrepreneurship on economic development in ASEAN, drawing on established analytical frameworks and methods from existing literature. Building on Solow's residual analysis, this study considered the contributions of technology and human capital investment to economic growth, using ICT and HDI as variables distinct from capital (K) and labor (L) in the model. Additionally, the rate of opening a business, representing the promotion of startups, was incorporated as a factor contributing to economic growth.

Panel data analysis, a statistical method widely used in various research fields, was employed, particularly effective when handling data spanning different time points and involving multiple observational units (such as individuals, companies,

countries, regions, etc.). After conducting panel data analysis using the provided estimation formula in (5), we will transition to qualitative analysis. This qualitative analysis aims to formulate strategies for promoting entrepreneurship through startups, with a specific focus on innovation, to enhance the GDP per capita of ASEAN countries. This involves comparing and refining strategic proposals tailored to middle-income ASEAN countries, taking into account their unique developmental strategies.

In turn, for RQ2, based on the results of the aforementioned panel data analysis, I transitioned to qualitative analysis. The approach for conducting this analysis involves constructing academic entrepreneurship through startups, to enhance the GDP per capita in ASEAN economies. This will be done by comparing and developing strategic proposals for middle-income ASEAN countries while considering their respective strategies.

As previously mentioned, middle-income countries are subdivided into low-middle-income and high-middle-income categories. For RQ2, the focus will primarily be on examining strategies for the lower-middle-income stage, as these countries constitute the largest share within ASEAN and addressing their economic challenges is of utmost importance. Additionally, recognizing variations among ASEAN countries, a comprehensive assessment of strategic challenges and preferred directions will be conducted for each industry. I conducted a literature review, consulting 12 sources, to investigate academic entrepreneurship policies for promoting economic development with a focus on the six middle-income ASEAN countries. The findings from this research will inform the development of strategic management proposals.

VI. STUDY RESULTS

C. For RQ1

The panel data analysis results for the impact of entrepreneurship via startups on the GDP per capita in ASEAN are presented in Tables 8.

Table 8. Study Results of Panel-Data Analysis

	Pattern A		Pattern B	
	Random 31 Economies including ASEAN		11 Economies in ASEAN	
	Pooled OLS Model		Fixed-Effect Model	
	Coefficient	Std. Error	Coefficient	Std. Error
const	2.10890	1.67794	12.7274	3.87712 ***
Capital	−0.533093	0.131688 ***	−0.176832	0.112371
Labor	0.63751	0.362997 *	−0.598799	0.863957
ICT_Broadband	0.12120	0.0165367 ***	0.0138	0.00753208 *
HDI	4.15218	0.262182 ***	5.7223	0.490672 ***
StartingaBusiness	1.64209	0.11824 ***	0.2185	0.0858298 **
R_2:	0.82208		0.61819	
rho	-0.04733		0.844648	
No. of observations	442		144	
No. of Cross-Sectional Units	31		11	
Duration of observations	2004 - 2020		2004 - 2020	
F test	F(30, 406)	0.570007	F(10, 128)	191.4
(Pooled vs. Fixed)	Prob.	0.96851	Prob.	6.58E-72
Breusch-Pagan test	Chi2(01)	3.35759	Chi2(01)	396.105
(Pooled vs. Random)	Prob.	0.066896	Prob.	3.88E-88
Hausman test	Chi2(05)	8.45323	Chi2(05)	23.4849
(Fixed vs. Random)	Prob.	0.132963	Prob.	0.000272613

Note. *p <0.1 ** <0.05 ***p <0.01

***Source*:** Author

Table 8 incorporates data spanning 17 years (2004 to 2020) for 31 countries, including both advanced economies and ASEAN countries (Australia, Brunei Darussalam, Cambodia, Canada, China, Denmark, France, Germany, Hong Kong, Iceland, India, Indonesia, Italy, Japan, South Korea, Laos, Malaysia, Myanmar, Netherlands, New Zealand, Norway, the Philippines, Portugal, Singapore, Sweden, Thailand, Timor-Leste, the United Kingdom, the United States, and Vietnam). The analysis employs two different patterns: A. an analysis of 31 countries randomly including high-income, ASEAN, and other economies, and B. an analysis of only 11 ASEAN economies. Pattern A utilizes the Pooled Ordinary Least Squares (POLS) model, showing a statistically significant positive impact of entrepreneurship through startups on GDP per capita (coefficient: 1.64209, R^2: 0.822076).

For Pattern B, which focuses on 11 ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, and Vietnam), the Fixed-Effect model was employed. It revealed a statistically significant positive impact of entrepreneurship on GDP per capita at a 5% level (coefficient: 0.218494, R^2: 0.618187). The rejection of the null hypothesis (H_0) in favor of the alternative hypothesis (H_1) suggests that startups' investments contribute significantly to the GDP per capita in ASEAN's 11 countries.

The consolidated interpretation of the panel data analysis results for both Pattern A and B indicates positive and statistically significant coefficients for GDP per capita in both sets of countries. This suggests that entrepreneurship through startups plays a crucial role in enhancing GDP per capita in ASEAN and other economies, pointing towards the potential for future economic development in the region through strategic investments in startups.

The observed statistical significance in the analysis results for ASEAN's 11 countries alone can be attributed to the considerable variation in the effects of entrepreneurship through startups on GDP per capita within ASEAN. This variation is particularly evident due to the diverse developmental stages among ASEAN countries, encompassing both low-middle-income and high-middle-income nations. Therefore, the promotion of entrepreneurship through startups, tailored to the specific developmental stage, is deemed essential in ASEAN, particularly in the context of long-term economic development and escaping the MIT.

D. For RQ2

The panel data analysis revealed diverse impacts of entrepreneurship through startups, particularly within ASEAN countries, highlighting the necessity for tailored entrepreneurship strategies aligned with each country's economic and industrial circumstances. This is crucial, especially in the context of expanding academic entrepreneurship through startups. Consequently, it is acknowledged that entrepreneurial strategies should align with the respective stages of development. Therefore, qualitative analysis becomes essential to gain deeper insights into this matter. The qualitative analysis, building on the panel data results for ASEAN's 11 countries, recognizes the statistical significance of GDP per capita. However, this significance is attributed to the presence of various countries in ASEAN at different developmental stages, including low-middle-income, high-middle-income, and high-income nations. This leads to substantial variability in the effects of startups' investment on economic development within ASEAN. In light of these outcomes, the qualitative analysis plays a crucial role in addressing the specific challenges and strategies needed to boost GDP per capita within ASEAN's middle-income countries. Philip (2022) emphasizes the importance of constructing frameworks in qualitative analysis, which involves combining ideas, findings, and concepts from various sources to develop hypotheses. In this research, the study not only demonstrates statistical significance regarding entrepreneurship via startups investment and its impact on GDP per capita in ASEAN but also delves deeper to extract challenges specific to each country's income level. Subsequently, it offers a concrete framework for startups' investment strategies tailored to the respective levels of development, contributing significantly to the region's development and generating new insights in the field of development economics. Figure 9 presents a summarized framework for promoting sustainable economic development through escaping the MIT in ASEAN's middle-income countries. Drawing primarily from the strategic management framework (SGM) presented by WWP (2019) and Hara and Hashi (2023), the strategic framework categorizes challenges related to digitalization promotion into "Policy Implementation" and "Policy Formation." The former includes "1. Analysis," "2. Current Measures," and "3. Challenges," while the latter encompasses "4. Implementation" and "5. Management & Evaluation." The framework aligns with the economic development stages of ASEAN's middle-income countries, categorized into Infancy, Growing to Fast-Growing, and Frontier, based on a framework proposed by Ács and Naudé (2011). Given the varying socioeconomic development stages, the framework emphasizes the need for tailored digitalization policies to enhance economic progress, in line with the study by Hara, Karikomi, and Hashi (2023). Notably, the most crucial aspect within "Policy Implementation" is considered to be "3. Challenges." In taking a look at the analysis, for countries in the infancy stage, including Cambodia, Lao P.D.R., and Myanmar, which are at the entry level of lower-middle income, the focus is on increasing capital through investment, especially in basic infrastructure, education, and business institutions (highlighted as "1. Analysis"). Current strategies include stimulating young people, particularly university students, to consider entrepreneurship courses ("2. Current

Strategy"). Challenges include shortages of high-skilled labor due to insufficient investment in human capital, basic infrastructure, and unfavorable business environments. In response, suggested policies include expanding infrastructure and basic education, supporting local SMEs with Official Development Assistance (ODA), improving government policy transparency, and promoting skill-based education. Feedback and control mechanisms ("5. Control and Feedback") are essential for monitoring outcomes and management improvement, emphasizing transparency and commitment in economic development. This qualitative framework aims to address the unique challenges and opportunities at each developmental stage, providing a nuanced approach to promoting academic entrepreneurship and sustainable economic development in ASEAN's middle-income countries.

In the context of countries transitioning from growing to fast-growing status, particularly in the Philippines and Vietnam, both at lower-middle-income levels with longer spans and expected to reach higher-middle-income status in the near future, the imperative is to boost capital through investment, especially in basic infrastructure, education, and business institutions.

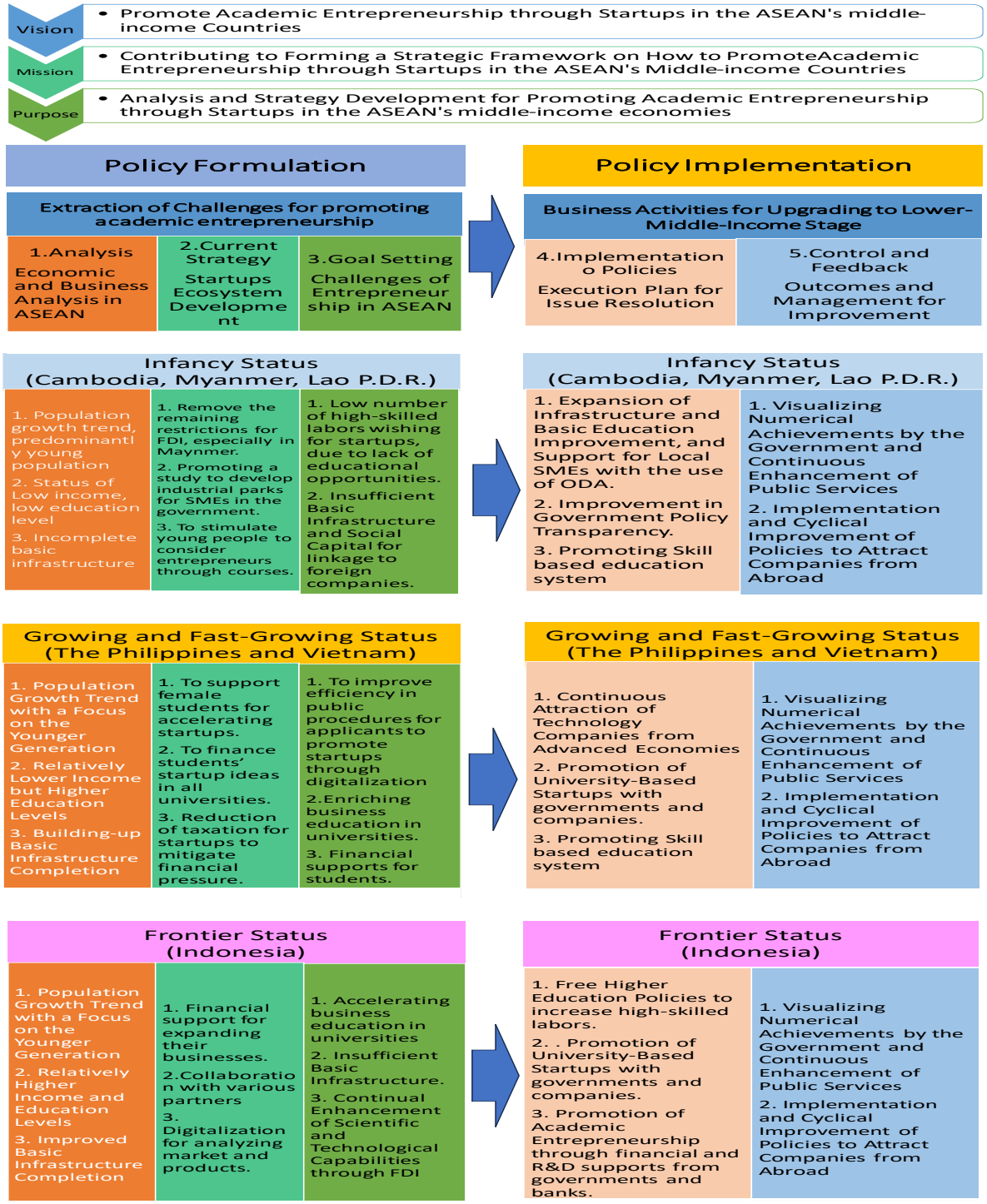

Table 9. Study Result of Qualitative Analysis (A Suggested Strategic Management Framework for Academic Entrepreneurship)

***Source*:** Referencing WWP (2019) and Hara and Hashi (2023), author made.

This analysis is highlighted in the "1. Analysis" stage (orange) in Table 5. Insight into current academic entrepreneurship strategies ("2. Current Strategy," green) reveals key points, such as supporting female students for accelerating startups, financing students' startup ideas across all universities, and reducing taxation for startups to alleviate financial pressure. Based on this analysis, the "3. Goal Settings" stage (deep green) is established, emphasizing efficiency in public procedures for applicants through digitalization, enriching business education in universities, and providing financial support for students.

Similar to the infancy status, as these economies are at the lower-middle-income level due to insufficient investment in capital, particularly human capital for basic education, increasing high-skilled labor is paramount. Streamlining and rationalizing public procedures for entrepreneurs to establish their companies more efficiently is essential. Notably, the Philippines faces challenges with time-consuming business opening procedures due to repetitive document checks (Hara, 2023). To address these challenges in the "Policy Implementation" platform, suggested policies include continuous attraction of technology companies from advanced economies through foreign direct investment, promoting university-based startups with governments and companies, and further materializing a skill-based education system. The need for continuous monitoring and improvement is stressed through "5. Control and Feedback."

Moving to frontier status, exemplified by Indonesia at the entry level of higher-middle-income status, the country has increased capital through investment in basic infrastructure, education, and business institutions ("1. Analysis" stage, orange). Insights into current academic entrepreneurship strategies ("2. Current Strategy," green) include financial support for expanding businesses, collaboration with various partners, and digitalization for analyzing markets and products. The "3. Goal Settings" stage (deep green) underscores the acceleration of business education in universities, addressing insufficient basic infrastructure, and continual enhancement of scientific and technological capabilities through foreign direct investment.

Unlike the other two statuses, Indonesia, being a higher-middle-income country in 2021 (World Bank, 2023), has addressed minimum development conditions in education and infrastructure. However, there is a need to improve science and technology levels for higher capital and productivity in the long run (Tran, 2016). Basic infrastructure development is essential for cultivating a high-tech industry, and university education should be improved to facilitate easier establishment of businesses by students. The "Policy Implementation" platform recommends free higher education policies to increase high-skilled labor through scholarships or funding by governments or companies, promotion of university-based startups with governments and companies, and promotion of academic entrepreneurship through financial and R&D support from governments and banks.

CONCLUSIONS

A. Interpretations of this Study

This study addressed two research questions and interpreted the findings as follows:

Firstly, as for the RQ1 regarding the impact of startups promotion on GDP per Capita in ASEAN, quantitative analysis, particularly panel data analysis, was employed to assess the influence of entrepreneurship through startups on economic development. The results indicated positive and statistically significant effects of startups investment on GDP per capita when considering both ASEAN and advanced countries collectively (Table 8). Similarly, focusing solely on ASEAN's 11 countries also revealed statistically significant results. These findings suggest that startups investment contributes to improving GDP per capita, implying potential future development through startups investment in ASEAN. The hypothesis that the impact of startups on GDP per capita varies according to the economic development stage holds true. The theoretical framework depicting the development stages and entrepreneurship through startups, as shown in Figure 1, is deemed justifiable, pending further validation in extended studies.

Secondly, as for the RQ2 on bridging the gap in academic entrepreneurship promotion and development challenges in ASEAN, building on the findings from the first challenge, qualitative analysis was employed to offer greater specificity regarding current challenges and strategies for promoting academic entrepreneurship in middle-income ASEAN countries. A strategic management framework was developed, categorizing middle-income economies into infancy, growing to fast-growing, and frontier stages. Specific strategies were proposed for each stage, addressing developmental challenges such as infrastructure development, human capital investment, and business environment improvement. The framework underscores the importance of aligning development policies with each country's unique circumstances and economic capacity. For example, economies at infancy and growing to fast-growing stages were advised to prioritize closing policy gaps between governmental policies and actual development issues, while the frontier status economy (Indonesia) was encouraged to focus on academic entrepreneurship promotion through collaborations with governments, enterprises, and foreign direct investment, emphasizing innovation for further economic development.

B. Study Limitations

This research has three remaining limitations:

Firstly, the study underscores the need for research activities that align more closely with the actual state of academic entrepreneurship through startups in middle-income ASEAN countries. While theoretical research is valuable, addressing policy issues in development economics requires a practical approach. Future research may benefit from conducting field surveys to better capture on-the-ground realities.

Secondly, the study did not thoroughly explore strategies for increasing entrepreneurs. Enhancing academic entrepreneurship, particularly through university education, is crucial for promoting innovation in collaboration with governments and enterprises. The role of universities, including the development of relevant courses and the promotion of entrepreneurship among students, should be a focal point for further research.

Finally, the study suggests the need for ongoing improvement and diversification of research approaches through collaborative efforts. While the research adopted a mixed analysis approach, future studies could gain new insights by constructing fresh analytical frameworks from various perspectives. Actively collaborating with researchers from diverse fields and practitioners can enhance research capabilities and introduce novel perspectives. Regular discussions and idea exchanges with external collaborators are seen as beneficial for advancing research in development economics.

C. Recommendations

This research highlights three key implications:

Firstly, within the framework outlined in Table 9, a critical implication is the significance of identifying challenges and subsequently aligning them with a clear vision, mission, and objectives. This alignment, when shared with policymakers and stakeholders, is essential for formulating effective development policies. The study underscores that the lack of coherence between identified challenges and the overarching vision can impede the formulation of successful development policies. Public servants in middle-income ASEAN countries are advised to consider this aspect in their policymaking processes.

Secondly, the study emphasizes the need to further consider political, social, and cultural aspects when examining development issues. Notably, social institutions dominated by oligarchy, particularly in connection with rural landed elites, pose unique challenges in Southeast Asia. Political challenges in middle-income ASEAN economies can be intricate and sensitive, requiring scholars and practitioners to approach business issues from political-economic perspectives. Recognizing and addressing these factors is crucial for a comprehensive understanding of the development landscape.

Finally, the research underscores the benefits of employing a mixed-method approach, enabling scholars and practitioners to gain insights into the realities of the developing world and make more realistic suggestions through comprehensive analyses. The collection of raw data from local perspectives contributes to a nuanced understanding of actual needs. The study recommends that scholars consider adopting mixed methods or engage in research collaborations with peers to enhance the robustness of their methodologies.

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CONFLICT OF INTEREST

The author has no conflict of interest in the submitted document.

REFERENCES

1) Allen, R. C. (2011). Global economic history: A very short introduction. Oxford University Press.
2) Antonizzi, J. and Smuts, H. (2020). "The Characteristics of Digital Entrepreneurship and Digital Transformation: A Systematic Literature Review." Responsible Design, *Implementation and Use of Information and Communication Technology*. doi.10.1007/978-3-030-44999-5_20.
3) ASEAN Secretariat and the United Nations Conference on Trade and Development. (2022). ASEAN Investment Report 2022Pandemic Recovery and Investment Facilitation. URL: https://asean.org/wp-content/uploads/2022/10/AIR2022-Web-Online-Final-211022.pdf

4) Asia Perspective. (2022)."Vietnam's Promising Startup Market" URL: https://www.asiaperspective.com/vietnam-startups/
5) Association of Southeast Asian Nations. (2012). "Small & Medium Enterprises Development Policies in Laos." pp.35-36.
6) Baldridge, R and Curry, B. (2023). "What is a Startup? The Ultimate Guide" Forbes. URL: https://www.forbes.com/advisor/business/what-is-a-startup/
7) Baldwin, R. (2018). The Great Convergence: Information Technology and the New Globalization. Nikkei Publishing Inc.
8) Christensen, C.M., Efosa Ojomo, and Karen Dillon. (2019). *The Prosperity Paradox: How Innovation can Lift Nations out of Poverty*, Harper Collins, New York, U.S.A.
9) Dabbous, A., Barakat, K.A., and Kraus S. (2023). "The impact of digitalization on entrepreneurial activity and sustainable competitiveness: A panel data analysis" *Technology in Society Vol. 73*. pp.1-13. https://doi.org/10.1016/j.techsoc.2023.102224
10) Dataindonesia.id. (2023). "There are 4,603 Startups in ASEAN as of May 26, 2023, the most in Indonesia" URL: https://dataindonesia.id/internet/detail/ada-4603-startup-di-asean-per-26-mei-2023-indonesia-terbanyak
11) Ferrarin, E. (2023). "How can schools foster an entrepreneurial mindset in students?" Informa. URL: https://www.k12dive.com/news/how-schools-foster-entrepreneurial-mindset-students/640525/
12) Frey, C.B. and Osborne, M.A. (2017). The future of employment: How susceptible are jobs to computerisation? Technological Forecasting and Social Change, Vol.114, pp.254-280, ISSN 0040-1625. https://doi.org/10.1016/j.techfore.2016.08.019
13) Grossman, G.M. and Helpman, E. (1991). *Innovation and Growth in the Global Economy*. MIT Press.
14) Ha, H. and Chuah, C.K.P. (2023), "Digital economy in Southeast Asia: challenges, opportunities and future development", Southeast Asia: A Multidisciplinary Journal, Vol. 23 No. 1, pp. 19-35. https://doi.org/10.1108/SEAMJ-02-2023-0023
15) Hanushek, E.A. (2021). For long-term economic development, only skills matter. *IZA World of Labor*. URL: https://wol.iza.org/articles/for-long-term-economic-development-only-skills-matter
16) Hara, M. (2022). "Educational Factors Predicting Middle-Income Trap in Southeast Asia." *The Journal of East Asian Educational Research. Vol.13*(5). Institute of East Asian Education. URL: https://www.ioeae.com/_files/ugd/7b35bc_d86462961787407ea9466b7846bd9fd6.pdf
17) Hara, M. (2023). "A Startups Promotion Strategy for Overcoming Lower-Middle-Income Trap in Southeast Asia," *Business Breakthrough University Review Vol.9* (1). pp.52-66. ISSN 2188-5478.
18) Hara, M. (2023). "A Startups Promotion Strategic Study for Overcoming Lower-Middle-Income Trap in Southeast Asia". *Global Journal of Business and Integral Security, Vol.1*. URL: https://www.gbis.ch/index.php/gbis/article/view/151
19) Hara, M., Karikomi, S., and Hashi, T. (2023). A Global Study on Development Issues for Middle-income Economies in the ASEAN. *Global Journal of Business and Integral Security, Vol.1*. URL: https://www.gbis.ch/index.php/gbis/article/view/168
20) Hara, M. and Hashi, T. (2023). "Digitalization for Economic Development in the ASEAN: Challenges and Strategies." *European Economic Letters (EEL)*. Vol. 13. No.4. URL: https://www.eelet.org.uk/index.php/journal/article/view/664
21) International Telecommunication Union. (2023). "Fixed-broadband subscriptions" https://datahub.itu.int/data/?c=701&i=19303
22) Ito, A. (2020). Digital Emerging Economies - Leapfrogging the North or rise of surveillance societies? Chuokoron-Shinsha.
23) Japan External Trade Organization. (2020). "A Research Report: Survey on Information and Communication Technology (ICT) in Thailand" URL : https://www.jetro.go.jp/world/reports/2020/02/7ee74cf687df5911.html
24) Karikomi, S. (2017). "A Theoretical Study on Sustainability in Middle-income Economies." *Graduate School of Social Sciences Review. Vol.25*. Waseda University. pp.101-112.
25) Kato, M. (2022). Economics of Startups. Yuhikaku Publishing.
26) Koh, S. Y., & Priyarsono, D. S. (2020). Digital Economy: Policy, Institutions, and Transformation in ASEAN. Journal of Southeast Asian Economies, Vol.37. No.3, 337-357.
27) Kurniawati, M.Y. (2022). "Analysis of the Impact of Information Communication Technology on Economic Growth: Empirical Evidence from Asian Countries", Journal of Asian Business and Economy Studies. Volume 29. Issue 1. pp. 2-18. https://doi.org/10.1108/JABES-07-2020-0082
28) Lao P.D.R. Government. (2022). *9th Five-Year National Socio-Economic Development Plan (2021-2025)*. pp.28-29.

29) Lee, JD., Lee, K., Meissner, D., Radosevic, S., and Vonortas, N. (2021). The Challenges of Technology and Economic Catch-up in Emerging Economies, Oxford University Press. https://doi.org/10.1093/oso/9780192896049.001.0001
30) Lib Consulting. (2023). "The Differences between IT and Digitalization" URL: https://www.libcon.co.jp/column/difference-between-it-and-digitalization/
31) Linton, J. and Warsh, S. T. (2008). "A Theory of Innovation for Process-Based Innovations such as Nanotechnology" *Technological Forecasting and Social Change Vol.75*. No.5. pp.583-594. URL: https://doi.org/10.1016/j.techfore.2007.02.005
32) Lucas, R. E. Jr. (1988). "On the Mechanics of Economic Development" *Journal of Monetary Economics, Vol.22.* pp.3-42. Elsevier Science Publishers. URL: https://www.parisschoolofeconomics.eu/docs/darcillon-thibault/lucasmechanicseconomicgrowth.pdf
33) Ministry of Foreign Affairs of Japan. (2022). "ASEAN," Asia. URL: https://www.mofa.go.jp/mofaj/area/asean/index.html
34) Ministry of Economic, Trade, and Industry of Japan. (2020). 2020 White Paper on International Economy and Trade. URL: https://www.meti.go.jp/report/tsuhaku2020/pdf/2020_zentai.pdf
35) Mitra, J., and Manimala, M.J. (2008). "Chapter 2: Higher Education's Role in Entrepreneurship and Economic Development" Entrepreneurship and Higher Education. pp.45-73. URL: https://read.oecd-ilibrary.org/education/entrepreneurship-and-higher-education/higher-education-s-role-in-entrepreneurship-and-economic-development_9789264044104-4-en#page1
36) Myint, N, Badiani-Magnusson, R., Woodhouse, A., Zorya, S. (2016)."Growing Together: Reducing Rural Poverty in Myanmar." World Bank. pp. 8-11.
37) National Economic and Development Authority. (2021). "09c: Expanding Access to Economic Opportunities in I&S for Startups, MSMEs, and Cooperatives." Philippine Development Plan 2017-2022.
38) National Economic and Development Authority. (2021). "Chapter 6: Revitalize Industry." Philippine Development Plan 2023-2028, p.148. URL: https://pdp.neda.gov.ph/wp-content/uploads/2023/07/Chapter-06.pdf
39) Nguyen, H.P., Huynh, A.N.Q., Reisach, U., and Kim, X. L. T. (2022). "How does Japanese ODA contribute to economic growth of ASEAN Economies?" Journal of International Economics and Management. Vol.22. No.2. https://doi.org/10.38203/jiem.022.2.0049
40) NTT Communications. (2023). "What is ICT?" ICT Business Online URL: https://www.ntt.com/bizon/glossary/e-i/ict.html
41) Ohno, K. (2010). "For avoiding the middle-income trap: Capacity-building of the industrial policy-making in Vietnam." URL: https://www.grips.ac.jp/vietnam/KOarchives/doc/JS06_proactive.pdf
42) Organisation for Economic Co-operation and Development. (2008). Entrepreneurship and Higher Education
43) Panigrahi, A. and Joshi, V. (2015). "Entrepreneurship Education and Economic Development: An Indian Perspective." Conference Proceedings of Eleventh Biennial Conference by Entrepreneurship Development Institute of India, Ahmedabad., URL: https://ssrn.com/abstract=2578943
44) Perkins, D. (2013). East Asian development: Foundations and strategies. The Edwin O. Reischauer Lectures.
45) Philip, M. (2022). "Five Simple Steps When Constructing a Conceptual Framework." *My Assignment Help*. https://myassignmenthelp.com/blog/conceptual-framework/
46) Porfírio, J., Carrilho, T., Jardim, J. and Wittberg, V. (2022). "Fostering Entrepreneurship Intentions: The Role of Entrepreneurship Education." *Journal of Small Business Strategy. Vol.32*(1). DOI:10.53703/001c.32489
47) Romer, P.M. (1986). "Increasing Returns and Long Run Growth" Journal of Political Economy. Vol. 94, No. 5., pp. 1002-1037. The University of Chicago Press.URL: http://www.jstor.org/stable/1833190
48) Romer, P.M. (1990). "Endogenous Technological Change." Journal of Political Economy. Vol. 98, No. 5, pp. S71-S102. The University of Chicago Press.URL: https://web.stanford.edu/~klenow/Romer_1990.pdf
49) Shane, S. (2004). *ACADEMIC ENTREPRENEURSHIP University Spinoff and Wealth Creation.* UK and Northampton, MA, USA: Edward Elgar.
50) Shionoya Y., Nakayama, I., and Tohata, S. (1977). *Theories on Economic Development*. Iwanami Books. Tranlated into Japanese from Schumpeter, J. A. (1926). *Theorie der wirtschaftlichen Entwicklung : Eine Untersuchung Über Unternehmergewinn, Kapital, Kredit, Zins und den Konjunkturzyklus*, 2. Aufl., Berlin: Duncker und Humblot, 1997.
51) Solow, R. M. (1956). "A Contribution to the Theory of Economic Growth" The Quarterly Journal of Economics, Vol. 70, No. 1. MIT Press. pp. 65-94. URL: http://www.jstor.org/stable/1884513
52) Tran V.T. (2016). The New Horizon of the ASEAN Economies and Japan – The New Development Phase in Each Economy. Bunshindo Publishing.

53) Tran, V. T. and Karikomi, S. (2019). *Middle-income Trap*. Keiso Shobou.
54) United Nations Conference on Trade and Development (UNCTAD). (2020). Digital Economy Report 2020. UNCTAD Publications.
55) United Nations Development Programme. (2023). Data Downloads. https://hdr.undp.org/data-center/documentation-and-downloads
56) Vietnam Government Portal. (2022). "Socio-Economic Development Plan for 2021-2025"
57) World Bank. (2019). The Digital Economy in Southeast Asia: Strengthening the Foundations for Future Growth. URL: https://documents1.worldbank.org/curated/en/328941558708267736/pdf/The-Digital-Economy-in-Southeast-Asia-Strengthening-the-Foundations-for-Future-Growth.pdf
58) World Bank. (2023). World Development Indicators 2022. http://wdi.worldbank.org/tables
59) World of Work Project. (2019). "The Strategic Management Framework: A Simple Look" URL: https://worldofwork.io/2019/03/strategic-management-framework/
60) Xavier, S.R., Guelich, U., Kew, P., Nawangpalupi, C, and Velasco, A. (2014). "ASEAN Regional Entrepreneurship Report 2014/15 Driving ASEAN Entrepreneurship: Policy Opportunities for Inclusiveness and Sustainable Entrepreneurial Growth" Kuala Lumpur: [Collaboration with International Development Research Centre (IDRC), University Tun Abdul Razak (UNIRAZAK), Global Entrepreneurship Research Association (GERA) and GEM research teams of Vietnam, Indonesia, Philippines, Singapore, Thailand and Malaysia]. URL: https://idrc-crdi.ca/sites/default/files/sp/Documents%20EN/gem-asean-regional-report-2014-2015.pdf