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Comparison of Entrepreneurial Ecosystems of South Korea, Thailand, and Vietnam

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Kata Kunci
Ekosistem Kewirausahaan; Analisis Komparatif; Korea Selatan; Thailand; Vietnam

Abstrak
Penelitian ini melakukan analisis komparatif ekosistem kewirausahaan di Korea Selatan, Thailand, dan Vietnam dengan menggunakan data Global Entrepreneurship Monitor untuk mengkaji komponen-komponen ekosistem utama. Investigasi ini mengungkap kesenjangan besar dalam tingkat kematangan ekosistem di antara negara-negara tersebut dengan menggunakan analisis korelasi parsial Pearson antara elemen-elemen ekosistem wirausaha. Dengan mengidentifikasi variasi yang berbeda dalam karakteristik ekosistem dan aktivitas kewirausahaan, penelitian ini mengusulkan rekomendasi kebijakan yang ditargetkan untuk memperkuat kerangka pengembangan *startup* dan usaha mikro, kecil dan menengah di ketiga negara Asia-Pasifik. Temuan ini berkontribusi pada pemahaman yang lebih luas mengenai pengembangan ekosistem kewirausahaan dalam konteks kebijakan publik regional, sekaligus mengakui keterbatasan penelitian dan menyarankan arah masa depan untuk meningkatkan kemampuan generalisasi melalui penyelidikan yang lebih komprehensif.

Keywords
Entrepreneurial Ecosystem; Comparative Study; South Korea; Thailand; Vietnam

Abstract
This research conducts a comparative analysis of entrepreneurial ecosystems across South Korea, Thailand, and Vietnam utilizing the most recent Global Entrepreneurship Monitor data to examine key ecosystem components. The investigation reveals substantial disparities in ecosystem maturity levels among these nations through the analysis of Pearson partial correlations between entrepreneurial ecosystem elements. By identifying distinct variations in ecosystem characteristics and associated entrepreneurial activities, this study proposes targeted policy recommendations for strengthening startup and micro, small, and medium enterprises development frameworks within these three Asia-Pacific countries. The findings contribute to the broader understanding of entrepreneurial ecosystem development in regional public policy contexts, while acknowledging research limitations and suggesting future directions for enhanced generalizability through more comprehensive investigations.

1. Introduction

The global entrepreneurial ecosystem has emerged as a critical framework for understanding the complex interplay of factors that drive innovation, economic growth, and business development across diverse national contexts (Scheidgen,

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2020; Spiegel & Vinodrai, 2020). An entrepreneurial ecosystem is a network of interconnected actors (Fredin & Lidén, 2020), entrepreneurs (De Brito & Leitão, 2020), financial investors (Chen et al., 2019), government agencies (Mason & Brown, 2014), educational institutions (Huezo-Ponce et al., 2024), and support organizations (Bosma & Kelley, 2018). These actors work together to support the creation and growth of new ventures in a specific region (Frimanslund et al., 2022; Kwong et al., 2022; Osano, 2021; Kang et al., 2019). While developed economies have traditionally dominated entrepreneurial discourse, emerging economies in the Asia-Pacific region have increasingly demonstrated remarkable dynamism and potential in cultivating robust entrepreneurial landscapes (Fredin & Lidén, 2020).

South Korea stands out as an advanced economy and a significant regional investor, being the largest foreign direct investor in both Vietnam and Thailand (Truong & Nguyen, 2023; ASEAN & UNCTAD, 2022). Within the Association of Southeast Asian Nations (ASEAN) context, Thailand emerges as a key competitor to Vietnam, particularly in attracting foreign investment and developing entrepreneurial infrastructure (Bendickson et al., 2020). Against this backdrop, the comparative analysis of entrepreneurial ecosystems in these three countries offers a particularly compelling research opportunity because they represent distinct yet interconnected economic environments, each characterized by unique historical trajectories, institutional structures, cultural contexts, and developmental strategies. Despite their geographical proximity and shared regional characteristics, these countries exhibit significant variations in their approaches to entrepreneurial support, technological innovation, regulatory frameworks, and economic policies (Qian & Acs, 2023). By systematically comparing their respective entrepreneurial ecosystems, the research seeks to uncover nuanced insights into the mechanisms that facilitate or hinder entrepreneurial growth, identify best practices, and provide a comprehensive understanding of how different national contexts shape entrepreneurial potential and performance (Audretsch & Belitski, 2021; Goletsis et al., 2024).

2. Literature Review

GEM-based comparison of entrepreneurial ecosystems in South Korea, Thailand and Vietnam

The entrepreneurial ecosystem, as defined by several agencies and organizations, encompasses a range of essential criteria that serve as the foundation for shaping and refining government roles (Herzog et al., 2024; Santos, 2024). They posit that environmental factors, such as culture, politics, and economics, significantly influence the creation of distinctive and widely applicable entrepreneurial and business contexts (Fredin & Lidén, 2020). According to the

Global Entrepreneurship Monitor (GEM) report in 2023, there are thirteen Entrepreneurial Framework Conditions (EFCs) used to assess each economy's entrepreneurial ecosystem. National experts from each participating economy rate these EFCs using a scale of 0 to 10, with 5 being the midpoint representing the boundary between adequate and inadequate (GEM, 2023).

The entrepreneurial ecosystem frameworks in South Korea, Thailand, and Vietnam exhibit distinctive approaches in their classification and support mechanisms for startups and Micro, Small, and Medium Enterprises (MSMEs). South Korea implements a sophisticated differentiation system, legally defining startups as technology-driven enterprises under seven years of age, which receive specialized support through initiatives such as the Tech Incubator Program for Startups (TIPS). Simultaneously, the country categorizes MSMEs using industry-specific criteria based on revenue thresholds and employee numbers, supported through traditional policy instruments. This systematic approach to enterprise development has contributed to the emergence of multinational born-global MSMEs, exemplified by companies like Grab and Uber, demonstrating the potential effectiveness of well-structured entrepreneurial support frameworks.

In Thailand, the entrepreneurial landscape has been evolving diversely. Thai startups are primarily characterized as technology-driven ventures operating under five years with a rapid scalability, supported by government initiatives like Startup Thailand (Startupblink, 2024). This classification has some contrasts with the country's MSMEs, which are formally identified through sector-specific regulatory frameworks. Therefore, Thai MSMEs would receive Royal Government support through distinct mechanisms as compared to Thai entrepreneurial startups. This differentiation between these two entrepreneurial categories reflects Thailand's transition toward an innovation-driven economy while maintaining traditional business support structures (Startupblink, 2024).

Vietnam's entrepreneurial landscape, shaped by Decree 38/2018/ND-CP, explicitly recognizes startups based on innovative business models and technological integration, supported through the National Innovation Center, while MSMEs, defined under the Enterprise Law, receive distinct support through the Agency for Enterprise Development, indicating the country's emerging focus on innovation-driven entrepreneurship (GOV, 2018). This differentiated approach to startups and MSMEs across these three countries reflects their varying stages of economic development, policy priorities, and institutional capacities, ultimately influencing the effectiveness of their respective entrepreneurial ecosystems regardless of the economic effects of the COVID-19 on entrepreneurial ecosystem landscape (Belitski et al., 2021).

3. Methods

The GEM national expert survey is concentrated on environmental characteristics that significantly influence entrepreneurial attitudes and activities, rather than on broad, universal economic factors (Bendickson et al., 2020). Experts are invited to share their insights and perspectives on the key conditions that either promote or hinder entrepreneurial activity and development in their country (Chen et al., 2019). The specific components of entrepreneurial ecosystem are presented in Table 1 below:

Table 1. Components that make up the entrepreneurial ecosystem by GEM definition

Components	Key points
1. Financial resources for entrepreneurship	The availability of financial resources and equity to MSMEs including loans and grants from any sources;
2. Government policy	The extent to which public policies support entrepreneurship. This factor has two sub-components: (2a) Entrepreneurship as a relevant economic issue; (2b) Tax regulations do not discriminate against business size or support newly established MSMEs;
3. Government entrepreneurial programs	The presence and quality of programs that directly support MSMEs at all levels of government (national, regional, municipal);
4. Entrepreneurship education	The extent to which the training, creation and management of MSMEs are integrated into the education system at all levels. This factor has two sub-components: (4a) Entrepreneurship education at primary and secondary levels; (4b) Entrepreneurship education at university and vocational levels;
5. Technology transfer	The extent to which national research and development leads to new commercial opportunities and is available to MSMEs;
6. Entrepreneurial Institution	Institutions on property rights, trade services, finance, accounting, law, and support institutions to encourage MSMEs;

7. Regulations on accession	This factor has two component criteria: (7a) Market dynamism: The extent to which the market changes over the years; (7b) Market openness: The extent to which SMEs are free to enter existing markets;
8. Entrepreneurial Infrastructure	Accessibility to infrastructure facilities for communications, public services, transport, land, and planning space at non-discriminatory prices for MSMEs;
9. Entrepreneurial culture	The extent to which socio-cultural norms encourage or enable activities that lead to new business methods that can potentially increase personal wealth or income;

Source: GEM, 2017

Based on the analysis of the time-series GEM data, this research calculated Pearson partial correlations (or named as correlations for short) between various factors in the entrepreneurial ecosystem were presented across nearly 70 countries. According to Hair et al. (2019), a correlation of 1 (or -1) indicates a completely absolute connection, with a positive sign (+) signifying a positive relationship and a negative sign (-) indicating a negative one. On the contrary, a zero correlation indicates a completely non-significant statistic relationship (Hair et al., 2019).

The policy support factor (2a) shows a notable correlation with the financial resources factor (1) for entrepreneurs, with a correlation coefficient of 0.53, reaching a statistical significance level of 0.01. Likewise, the tax regulation factor (2b) is strongly correlated with the government policy support factor (2a), boasting a correlation coefficient of 0.63. National entrepreneurial programs (3) also exhibit a high correlation with both the state policy factor (2a) and the tax regulation factor (2b), with correlation coefficients of 0.69 and 0.66, respectively. Interestingly, general and vocational education programs demonstrate a low correlation with most other factors in the entrepreneurial ecosystem, but show a moderate correlation with socio-cultural criteria, at levels of 0.47 and 0.46, respectively.

The most significant correlation in the global entrepreneurial ecosystem is the transfer of national research and development (R&D) to startups. This transfer shows a notable correlation with financial resources (0.65), policy support (0.54), and tax regulations (0.54). The highest correlation is between R&D transfer and digital government entrepreneurial programs, with a coefficient of 0.74. Additionally, the institutional factor also strongly correlates with R&D transfer, exhibiting a correlation coefficient of 0.74.

Table 2. Pearson partial correlation between factors in global entrepreneurial ecosystem

Components	1.	2a.	2b.	3.	4a.	4b.	5.	6.	7a.	7b.	8.
1. Finance	----										
2a. Policy	**0.55****										
2b. Tax	0.44**	**0.63****									
3. Program	0.51**	**0.69****	**0.66****								
4a. General	0.45**	0.37**	0.40**	0.39**							
4b. Education	0.26**	0.29**	0.30**	0.42**	0.52**						
5. Transfer	**0.65****	**0.54****	**0.54****	**0.74****	0.50**	0.46**					
6. Institutions	0.54**	0.28**	0.43**	0.46**	0.47**	0.39**	**0.60****				
7a. Dynamics	0.17**	0.14**	-0.04	-0.10*	0.08	-0.14**	0.04	-0.21**			
7b. Openness	**0.55****	0.46**	**0.58****	0.59**	0.50**	0.38**	0.62**	0.59**	-0.07		
8. Infrastructure	0.37**	0.32**	**0.63****	0.50**	0.16**	0.19**	**0.54****	0.42**	-0.06	0.43**	---
9. Culture	0.40**	0.33**	0.40**	0.32**	0.47**	0.46**	0.37**	0.28**	0.10*	0.41**	0.18**

Source: Calculated by author, data taken from GEM 2007-2023

**. Indicates statistical significance at the 0.01 level (2-tailed).
*. Indicates statistical significance at the 0.05 level (2-tailed).
Close correlations in shaded cells exceed values of 0.5

The market dynamism factor (7a), general education (4a), and vocational training (4b) does not show a strong correlation with other factors in the entrepreneurial ecosystem. Additionally, there is a weak negative correlation (-0.14) between vocational training (4b) and market dynamism. This suggests that as markets become more dynamic, the relevance of entrepreneurial education and training diminishes. Therefore, it is crucial for policymakers to design education and training programs that align with market trends. This alignment ensures the supply of appropriate human resources, reduces the mismatch of skills, minimizes wasted social resources, and helps prevent nominal unemployment (De Brito & Leitão, 2020; Mason & Brown, 2014).

In contrast to market dynamism, the market openness factor (7b) shows strong relationships with most other factors in the entrepreneurial ecosystem. Specifically, it has a correlation coefficient of 0.55 with financial resources for startups (1) and 0.58 with tax regulations (2b). Both the institutional factor (6) and entrepreneurial programs (3) exhibit a correlation coefficient of 0.59 with market

openness. Lastly, the infrastructure factor (8) correlates closely with tax regulations (2b) at 0.63 and R&D transfer (5) at 0.54.

4. Results

Entrepreneurial ecosystem-related activities in South Korea

As of 2023, in South Korea, the total early-stage entrepreneurship activities have shown signs of increasing compared to the early years. In this country, entrepreneurship opportunities have shown positive signs but are still considered low compared to countries that are motivated by innovation. Recently, the rate of early-stage entrepreneurship activities in South Korea is 6.9%, ranking quite at a rather high place out of 26 countries that are motivated by innovation (GEM, 2019; GEM, 2023).

In South Korea, the rate of opportunistic entrepreneurship among early-stage entrepreneurs is on the rise. Despite South Korea's high economic development, it exhibits a significant level of entrepreneurship driven by urgent needs (GEM, 2019; GEM, 2023). The individuals aged 24-25 comprise a notable portion of this group due to the country’s aging population. Interestingly, the tendency toward entrepreneurship increases with age, with South Korea showing a particularly high rate of entrepreneurship among those aged 55 to 64 (GEM, 2019; GEM, 2023).

According to the 2023 GEM survey, results from experts in South Korea reveal that the entrepreneurial ecosystem has remained relatively stable in recent years across its nine key factors. Most experts agree that entrepreneurs place great importance on the government's role in promoting entrepreneurial activities, particularly for early-stage ventures. However, the perception of entrepreneurship as a desirable career choice has slightly diminished. Public and media attention has also seen a slight decline, dropping from 68.1% to 67.8% between 2007 and 2023 (GEM, 2023).

The South Korean Government has historically implemented large-scale fiscal policies and boosted the entrepreneurial ecosystem to overcome recessions, such as during the 2008-2009 Global Financial Crisis and the 1997 Asian Financial Crisis. For COVID-19, similar support measures include $47 billion for enterprises, offering low-interest loans and other financial aids, along with a $38 billion financial stability package (UNDP et al., 2024). MSMEs in severely impacted sectors received emergency funds, rent exemptions, and extended tax deadlines. The Ministry of MSMEs and Startups launched the "Soon-to-Be Unicorns" program and a tech-entrepreneurial incubator program, funding R&D and commercialization.

Additionally, the government initiated a major program for Artificial Intelligence (AI) ventures, including a $5 billion AI Venture Fund (Startupblink, 2024).

Entrepreneurial ecosystem-related activities in Thailand

Thailand consistently stands out as one of the world's leading nations in entrepreneurship. Over the past decade, 46.3% of Thailand's senior population has engaged in some form of entrepreneurial activity (BUSEM & GEM, 2024). Of this, 18.3% have founded or managed new businesses, while 28% are long-term business owners (BUSEM & GEM, 2024). Additionally, about one-third of Thailand's senior citizens are seriously considering starting a new business within the next three years (BUSEM & GEM, 2024).

Nevertheless, gender parity in entrepreneurship has been maintained, with 9.2 Thai women starting and running new businesses compared to 10 Thai men. Globally, such gender parity in entrepreneurial participation is rare (GEM, 2020). A recent GEM report on Thai entrepreneurship revealed that new entrepreneurs in Thailand are more educated than their established counterparts, with over a third holding a university degree as their highest level of education (GEM, 2023).

Long-time and established business owners in Thailand's mining sector exhibit a high entrepreneurship rate of 23.5%, surpassing other Asian countries. This affluent segment is notably wealthier than other parts of the population. Over the past three years, there has been a growing trend among Thai people to seize business opportunities. However, a significant barrier to Thailand's entrepreneurial ecosystem is the lack of financial resources for entrepreneurial companies. Additionally, the Thai Government's support policies for startups have been raising concerns. The GEM reports indicate that Thailand requires substantial reforms in its education and vocational training systems to further enhance its entrepreneurial capacity (GEM, 2023).

During past crises, Thai Government loan guarantees for entrepreneurs and entrepreneurial companies were available through the Thai Credit Guarantee Corporation, with banks offering specific funding and training programs. Agencies like the National Innovation Agency (NIA) and the National Science & Technology Development Agency (NSTDA) supported the digital economy and innovative startups (Startupblink, 2024).

Entrepreneurial ecosystem-related activity in Vietnam

Recently, Vietnam's economy reached a milestone by establishing over 100,000 enterprises (PCI, 2023). This achievement is largely due to the efforts of the state, local authorities, and notably the Ministry of Industry and Trade. The

ministry issued Decision No. 3610A/QD-BCT, outlining a plan to reduce and simplify investment and business conditions for 2017-2018. This legal document resulted in the reduction of 675 investment and business conditions, an unprecedented figure in the history of the industry and trade sector, exceeding the initial plan by 63 conditions and accounting for 55.5% of the total (GOV, 2017).

According to GEM & VCCI (2018), Vietnam remains among the countries with the highest rate of startup companies driven by essential needs, accounting for 37%. However, it also has the lowest entrepreneurial activity index compared to the ASEAN and countries that base their businesses on efficiency, innovation, and initiatives. For instance, 63% of startups in Vietnam are opportunity-driven, significantly lower than countries like Malaysia and Thailand (80%), resource-based and efficiency-driven nations (69%), and innovation-focused countries (79%). This highlights a critical area for policymakers and government departments to address in enhancing Vietnam's entrepreneurial ecosystem (GEM & VCCI, 2018; UNDP, 2020).

The Government of Vietnam has implemented several public policy interventions to mitigate the impacts of COVID-19 on entrepreneurship development (PAPI, 2023; UNDP, 2020). These measures include substantial fiscal support packages, such as low-interest loans and financial assistance to help enterprises manage cash flow difficulties (Ministry of Planning and Investment, 2021). The government accelerated public investment programs and digitization processes for firms and government agencies to enhance business resilience (Vietnam Times, 2024).

Vietnam’s sector-specific support was provided, particularly to tourism and hospitality, through financial assistance and relief measures. Additionally, the adoption of safety nets aimed to protect the most affected businesses and individuals (VNEconomy, 2024). Tax relief measures, such as extended periods for tax payments and returns, were introduced for entrepreneurial MSMEs facing cash shortages. The government also focused on tech-entrepreneurial incubator programs, funding for R&D and commercialization, and training programs to help businesses adopt digital technologies and enhance competitiveness. These interventions aim to foster a resilient entrepreneurial ecosystem and drive economic recovery in the post-pandemic era (Vietnam News, 2020).

5. Discussion

Differences in the entrepreneurial ecosystems of Korea, Thailand and Vietnam

According to the Startupblink report (2024), South Korea possesses its highly concentrated entrepreneurial ecosystem in Seoul, but also faces challenges in

retaining talent. Thailand, despite government efforts, remains largely focused on Bangkok and has yet to reach its full potential. Vietnam is seen as a promising emerging market due to its large market size and startup-friendly policies, but needs to increase technological innovation to become a regional and global hub. As indicated in Table 3 below, all three countries show uneven development in terms of global rankings and entrepreneurial funding, highlighting the important role of the government in supporting the entrepreneurial ecosystem.

Table 3. Ranking the entrepreneurial ecosystems of South Korea, Thailand, Vietnam

Year	South Korea Entrepreneurial Funding & Rankings		Thailand Entrepreneurial Funding & Rankings		Vietnam Entrepreneurial Funding & Rankings	
	In billion $	World	In billion $	World	In billion $	World
2020	5.4	19	0.4	50	0.3	59
2021	15.5	19	0.6	50	1.3	59
2022	12.7	21	1.3	52	0.4	54
2023	4.9	20	1.0	53	0.4	58
2024	--	20	--	54	--	56

Source: Startupblink, 2024

Table 4. Comparing entrepreneurial ecosystem factors in South Korea, Thailand, and Vietnam

Countries	1	2a	2b	3	4a	4b	5	6	7a	7b	8	9
Vietnam	2.25	2.78	2.62	2.25	1.70	2.59	2.32	2.85	3.65	2.47	3.91	3.18
Thailand	2.83	2.47	2.34	2.19	1.90	2.90	2.38	2.97	3.63	2.54	3.94	3.09
South Korea	2.45	3.56	2.79	3.21	1.99	2.42	2.54	2.60	4.24	2.30	3.97	2.97
World	2.53	2.54	2.42	2.61	1.92	2.78	2.31	2.96	2.97	2.54	3.68	2.83

Sources: GEM, 2020

Table 4 shows that Vietnam is ranked lowest in four key factors compared to the global average: financial resources for entrepreneurs, universal entrepreneurial education, research and development transfer, and facilities and infrastructure. However, Vietnam excels in market dynamism and socio-cultural factors, outperforming both South Korea and Thailand in these areas.

In the comparison of entrepreneurial ecosystems, Thailand ranks lower than Korea and Vietnam in five key areas as indicated in Table 3. Specifically, these areas

include government support policy (2.47 on the 5-point Likert scale), tax support policy (2.34), government entrepreneurial programs (2.19), market dynamism (3.63), and the socio-cultural environment for entrepreneurs (3.09). However, Thailand excels in three factors: connecting higher education with entrepreneurs (2.97), entrepreneurial institutions (2.97), and market openness (2.54), leading over South Korea and Vietnam in these domains.

South Korea, one of the most developed countries in Asia and a member of the Organisation for Economic Co-operation and Development (OECD), shows only three weaknesses in its entrepreneurial ecosystem compared to Thailand, Vietnam, and the global average. These include connecting education and training with startups (2.42 on a 5-point Likert scale), entrepreneurial institutions (2.6), and market openness (2.3). For all other entrepreneurial ecosystem factors, South Korea stays above Thailand and Vietnam due to high scores of all entrepreneurial ecosystem components as well as entrepreneurial funding data. This serves as a valuable lesson for other nations in building a creative government that fosters optimal conditions for startups. Moving forward, developing countries like Vietnam and Thailand must enhance the entrepreneurial ecosystem factors that are currently lacking.

6. Conclusion

In the research context of South Korea, Thailand and Vietnam, the key components of the entrepreneurial ecosystem as discussed in GEM reports serve as strong foundation based on which the following public policy implications are drawn:

Government Support

The government plays a crucial role in fostering startup ecosystem development through targeted interventions. By providing financial resources like grants, venture capital funds, and tax incentives, governments enable startups to access essential growth capital. Administrative streamlining through simplified business registration and licensing procedures reduces barriers to entrepreneurship. Additionally, government support for commercializing university and research institute innovations creates vital bridges between research and market applications. Infrastructure investments in transportation, telecommunications, and energy further strengthen the foundation for startup activities by facilitating efficient business operations and connectivity (Tsukanova et al., 2024; WEF, 2014).

Education and Training

Educational institutions play a vital role in cultivating entrepreneurship through comprehensive programs at multiple levels. Early integration of business concepts and entrepreneurial skills into general education curriculum develops creative thinking and business acumen in students (Padilla-Meléndez & del-Aguila-Obra, 2022). Post-secondary institutions further enhance this foundation by offering specialized training in entrepreneurship, business administration, and marketing (Osano, 2021). The establishment of entrepreneurial ecosystem hubs with co-working spaces and mentoring programs creates collaborative environments where entrepreneurs can share knowledge and resources, fostering innovation and mutual growth through practical experience (UNDP et al., 2024).

Building an Entrepreneurial Culture

The cultivation of a supportive entrepreneurial culture requires comprehensive societal engagement and strategic partnerships. Shifting social perceptions toward entrepreneurship and risk-taking creates an environment that celebrates innovation and business creation (Kwong et al., 2022). Strategic networking initiatives facilitate vital connections between entrepreneurs, investors, and industry experts, enabling knowledge exchange and collaborative opportunities. Additionally, increased private sector involvement through corporate support, venture capital investment, and mentorship programs strengthens the entrepreneurial ecosystem by providing the resources and expertise necessary for startup success.

Adapting to Technology Trends

Technological advancement and digital transformation are integral components of modern entrepreneurial ecosystems. Strategic support for emerging technologies like Web 3.0, AI, medical technology, and clean energy creates favorable conditions for specialized startup development. Investment in advanced technical training programs develops a skilled workforce aligned with digital age requirements. Furthermore, initiatives promoting digital transformation enhance business productivity and competitiveness through the systematic integration of digital technologies across operational processes.

Ensuring Sustainability

The integration of sustainable practices and responsible business models represents a critical dimension of modern startup ecosystem development. Startups are encouraged to align their operations with Sustainable Development Goals, encompassing environmental protection, gender equality, and social development

initiatives. The promotion of renewable energy adoption and environmentally conscious technological solutions minimizes ecological impact, while the implementation of ethical standards in supply chain management ensures worker and community rights. Through coordinated policy implementation, governments and stakeholders can cultivate a dynamic startup ecosystem that drives both economic growth and sustainable development outcomes.

Research Limitations and Future Direction

While this research seemed interesting in the field of entrepreneurial ecosystem, the generalization of the results must be handled with utmost care. This is because it has several limitations stemming from the main reliance on secondary data from the GEM and the analysis of entrepreneurial ecosystem-related documents, potentially restricting the depth of insights. The complex and multidisciplinary nature of entrepreneurial ecosystems presents challenges in capturing all relevant dimensions and interactions within the system. Additionally, the broad scope of the study may limit its applicability to specific industry contexts, suggesting that future research could benefit from focused case studies examining particular sectors or regional ecosystems.

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