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Empowerment Triple Helix Model for Sustainable Siswapreneur Framework Development

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Abstract

Due to COVID-19 and subsequent Movement control order (MCO), the number of registered unemployed in Malaysia continues to increase. Under the Entrepreneurship Action Plan of Higher Education Institutions 2021-2025, various entrepreneurship-related activities, and initiatives, such as strategic collaborations with government agencies and private companies, have been organised at the HEIs level. This study, therefore, proposes a framework based on the triple helix model that emphasises the participation of universities, government agencies, and private companies. Consequently, the purpose of this study is to determine the role of universities, government agencies, and private corporations in fostering siswa-preneur development and sustainability. To effectively plan and strategize all siswa-preneur development activities, universities, government agencies, and private corporations must play a distinct role. This study aimed to assist higher education institutions in enhancing their planning and strategies for assisting students to sustain entrepreneurship activities in universities.

Introduction

Entrepreneurship is one of the vehicles that drive socioeconomic growth. Entrepreneurship is also one of the challenges facing the economy's sustainability. However, entrepreneurs must engage in risk management to sustain the economy (Alwi, Razak, Aslam, Basir & Salleh, 2019). Due to COVID-19 and subsequent Movement control order (MCO), the number of registered unemployed individuals in Malaysia reaches an all-time high of 718,000. In contrast, the number of unemployed college graduates has surpassed 200,000 due to a lack of economic activity and COVID-19 (Department of Statistics Malaysia, 2021). According to a Malaysia's Graduate Tracer Study 2018 which conducted by the Ministry of Education, nearly 60 percent of each year's, 51,000 graduates remain unemployed a year after graduation (D'Silva, 2020). The number of graduates who were unemployed in 2018 increased by 4.6 percent from 2017 (154,900) to 162,000. The unemployment rate in Malaysia from 2017 to 2021 is shown in Table 1.

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Table 1: Malaysia unemployment rate from 2017 to 2021

Year	Unemployment rate (%)	Annual change
2021	4.61	0.11
2020	4.50	1.24
2019	3.26	-0.04
2018	3.30	-0.11
2017	3.41	-0.03

Sources: Department of Statistic Malaysia

Moreover, consumer acceptability and adoption of fintech services have become powerful, (Alwi, Salleh, Razak & Naim, 2019) particularly after the release of Covid 19. The advancement of technology has changed the business environment since the use of technology minimized the human effort. This resulted in technological disruptions that transformed businesses and altered the categories of available employment. However, it will become increasingly difficult to resolve this incompatibility. Entrepreneurship is an option for those who do not want to rely on the employment market in order to adapt to the changing technological landscape. However, for entrepreneurial courses, universities and

other institutions of higher education must have a comprehensive paradigm for the development of entrepreneur skills, knowledge, and competencies. In addition, industry and government involvement play an important role in ensuring that graduates receive guidance, mentoring, and financial support. The involvement of private corporation and government agencies will help the young entrepreneurs through sabbaticals, industry secondments, business incubators, and green lane policies that support student-owned firms, various organizations will be able to provide opportunities for students and academic staff to gain entrepreneurial skills and establish their own businesses.

Malaysian government has urged the youth to participate in entrepreneurial activities to increase the rate of Total Early-stage Entrepreneurial Activity (TEA) (Mahmood et al., 2020). The high unemployment rate was caused by a dearth of work prospects and graduates' lack of enthusiasm in starting their own business. According to Dr Yap Kain Ching, former Deputy Minister of Higher Education, entrepreneurship programmes in higher education institutions were implemented under the Entrepreneurship Action Plan 2016-2020 with the concept of "Learn and Earn," giving students the opportunity to earn personal income while studying (The Star, 2017). Table 2 shows the most recent 2017 data from the Global Entrepreneurship Monitor (GEM) for Malaysia, Indonesia, Thailand, South Korea, and Vietnam. Malaysia trails three other southeast Asian nations: Thailand, Vietnam, and Indonesia. In addition, Malaysia also performs marginally worse in the categories of Perceived Opportunities and Perceived Capabilities compared to these three nations.

Table 2: Global Entrepreneurship Monitor (GEM) for the year 2017

2017	Entrepreneurial Intentions	Total early-stage entrepreneurial activity (TEA)	Entrepreneurial as career choice	Fear of failure rate	Perceived opportunities	Perceived capabilities	Motivational index
Malaysia	17.6	21.6	77.06	44.95	45.06	46.12	9.20
Indonesia	28.1	7.47	70.01	46.66	47.74	57.34	1.72
Thailand	37.4	21.6	74.72	52.69	49.13	48.86	7.90
South Korea	22.8	13.0	47.24	32.16	35.3	45.86	2.93
Vietnam	24.98	23.27	62.11	46.63	46.41	50.03	4.60

Sources: Global Entrepreneurship Monitor website; Entrepreneurship Action Plan – Higher Education Institution 2021 - 2025

Moreover, there is a dearth of academic exposure for individuals who are intrigued in becoming entrepreneurs. Information about a career as an entrepreneur can increase students' interest in entrepreneurship after graduation. Some universities develop self-employment support units and university seedbed development, as well as creativity and entrepreneurship workshops, to encourage students to start their own businesses and improve the information transfer process. (Barba-Sánchez & Atienza-Sahuquillo, 2016). In addition, the participation and engagement of various agencies play a vital role in ensuring that students' interest in entrepreneurship continues to develop. This is due to the fact that only 5 percent of students engage in entrepreneurial activity. According to the Ministry of Higher Education of Malaysia, approximately 15 percent of Malaysian students enrolled in higher education will establish their own business prior to graduation (Hassan, Sade, & Rahman, 2020). Farid and Rahman (2020) mentioned that this study uncovered two main themes: external challenges and personal challenges. The findings of Farid and Rahman's (2020) study are anticipated to shed light on the most significant challenges students confront as a result of their involvement in entrepreneurial activities. In order for students to surmount external and internal challenges, university, private corporation, and government involvement will assist entrepreneurs in managing their challenges as entrepreneurs. In

addition, in order to support the national initiative to increase the number of students involved in entrepreneurship, university, government agencies, and private corporations must collaborate. Therefore, the purpose of this study is to determine the role of universities, government agencies, and private corporations in promoting the sustainability and development of siswa-preneurs.

Literature review

Entrepreneurship

“Entrepreneurship is defined as a dynamic system of individual’s causally interrelated personality traits, motivation, cognition, needs, emotions, abilities, learning, skills and behaviour” (Oganisjana and Koke 2012) and, in the past decades, the role of the universities in fostering entrepreneurship grew considerably, leading to the development of new strategies, own individual culture, and structures (Lombardi et al. 2017). Entrepreneurship involves the process of starting a business and has been glamorised as being the cornerstones of a successful capitalist economy. It is deemed as an important mechanism for improving employment, competitiveness, innovation, and agent of change to society (Song, Thominathan, & Khalid, 2021). Entrepreneurship practices differ across countries due to political, social, and economic variances (Naz et al., 2020).

To date, some entrepreneurs are committed to improving the environment by driving innovative changes, efficiency, and better advancement (Osiri et al., 2019). Most university students are bound to join the labour force after graduation, and some students may turn into entrepreneurs and significantly contribute to Malaysia’s financial progress (Mahmood et al., 2019). The emphasis on entrepreneurship by the Malaysian government clearly displays their effort in strengthening the entrepreneurial development in the country, which is expected to boost the economy by creating more jobs and generating new incomes (Song, Thominathan, & Khalid, 2021).

The Entrepreneurial University constitutes a phenomenon that highlights the prominent roles played by academic organizations as aggregators of capabilities, enabling the establishing of bridges between innovation and Entrepreneurial Ecosystems (Patrício, & Ferreira, 2023). Academic entrepreneurship is becoming increasingly popular among scientific institutions, businesses, and local governments (Sun, Lo, Liang & Wong, 2017). There are several reasons for the interest of academic entrepreneurship. For instance, increasing importance of knowledge for the economic development based on human capital entrepreneurship theory (Moses, Olokundun, Akinbode, Agboola & Inelo, 2016), research funding and prestige universities, as well as positive influence of entrepreneurship academic research to build competitiveness and international innovation of the economy (Hahn, Minola, Bosio & Cassia, 2020). Thus, sustainable entrepreneurship intentions refer to the intentions of the individuals to create businesses by incorporating the elements of social, economic, and environmental factors. In other words, sustainable entrepreneurship intentions refer towards the intentions of individuals to engage themselves in the process of recognizing, assessing, and availing the entrepreneurial opportunities that could minimize a firm’s influence on the natural environment and create the benefits for the whole society as well as for local communities by improving their living standards (Tehseen, & Haider, 2021).

Student Involvement in Entrepreneurship

Malaysia is not categorized as a free economy country, the mixed economic system in Malaysia is now prioritizing entrepreneurship as one of the main future drivers for socio-economic development (Hassan, Sade, & Rahman, 2020). This is one of the approaches to encouraging people to help each other earn a living. In line with this, society's attitude towards entrepreneurship is constantly being moulded in order to inspire more people, particularly young people, to pursue entrepreneurship. Other than that, the involvement of university as an education provider also preparing the students with entrepreneurship knowledge. According to Universiti Malaya (UM) Student Affairs Division Graduate Employability and Career Centre director Dr Iskandar Abdullah all university students in Malaysia must undergo a compulsory entrepreneurship course. This is in line with the Malaysia Education Blueprint 2015-2025

(Higher Education), which aims to cultivate an entrepreneurial mindset and a drive to create, rather than to merely seek jobs, among graduates.

To support the agenda in cultivate an entrepreneurial mindset, the government Despite the Malaysian government's massive funding for the promotion of entrepreneurship in HEIs and small and medium-sized enterprises, as well as the convenience of remote working, technological advancement (social media, online marketing platforms, video calls, emails, apps, and other collaborative software), and the mushrooming of cheaper co-working spaces and great opportunities for entrepreneurship, uptake remains slow (Song, Thominathan, & Khalid, 2021). Table 3 present the statistic of involvement of entrepreneurship awareness among student, graduate entrepreneurship, student business and educator with entrepreneurship expertise.

Table 2: Statistic of involvement of entrepreneurship awareness among student, graduate entrepreneurship, student business and educator with entrepreneurship expertise.

Key performance indicator	2016		2017		2018		2019		2020
	target (%)	achieved	target (%)	achieved	target (%)	achieved	target (%)	achieved	target (%)
Entrepreneurship awareness among students	0.6	60/309,834	70	75/390,372	80	82/427,343	90	96.01/531513	100
Graduate entrepreneurs	2.5	2.5/3756	3	3.1/4840	3.5	0.00	4	4.63/7148	5
Student businesses	3	0.03%	6	5/19024	9	7/30888	10	10.2/49983	15
Educators with entrepreneurship expertise	300	2206	600	1260	900	1988	1200	2079	1500

Source: Based on Entrepreneurship Action Plan of Higher Education Institutions 2021-2025

Conceptual Framework

Based on Entrepreneurship Action Plan of Higher Education Institutions 2021-2025, at the HEIs level, various entrepreneurship-related activities, and initiatives, including strategic collaborations with government agencies and private corporations, have been organised to promote entrepreneurship as well as produce entrepreneurial graduates and more graduate entrepreneurs. Integrating into entrepreneurial ecosystems may influence legitimization processes in which assessing the factors ensuring the optimization of entrepreneurial inputs is a stage (Bouncken and Kraus 2022). The Triple Helix concept usually serves to aggregate the Government-University-Industry cooperation perceived as crucial to economic progress with universities representing the enablers of qualified and specialized labour (Chen et al. 2016) through an appropriate alignment of university research and education and training priorities with the goals of the organizations active in the region (Hewitt-Dundas 2012). Cai and Ahmad (2021) proposed and conceptualised a sustainable entrepreneurial university to respond to the demands arising from the transformation from innovation systems to innovation ecosystems for a renewed understanding of the nature of universities and their roles in society. Figure 1 present a conceptual framework for this study. The involvement of various agencies will enhance the operation and management of the business. Each of the agencies play an important role in supporting the graduate who involved as entrepreneur.

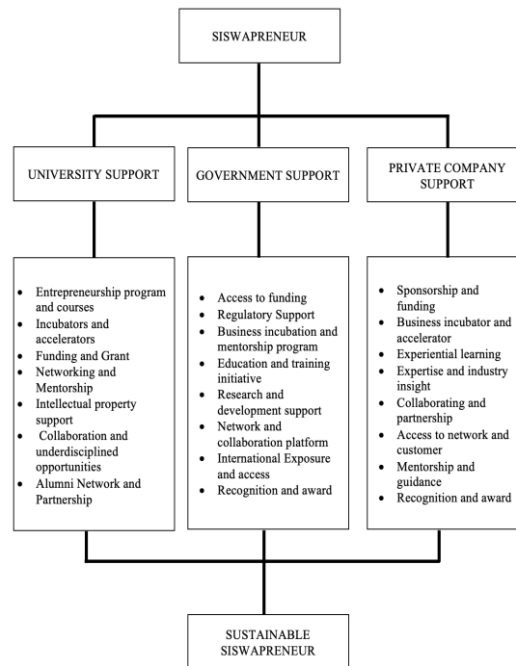


Figure 1: Conceptual Framework

University Support

By providing these resources and support, universities can create a conducive ecosystem that nurtures student entrepreneurs, fosters innovation, and increases the likelihood of entrepreneurial success. Ultimately, this helps students bridge the gap between academia and the business world, encouraging them to pursue their entrepreneurial ambitions and make meaningful contributions to society. Previous research has also indicated that university efforts toward entrepreneurship support might not have a direct impact on students’ entrepreneurial intentions (Wegner et al., 2019). The meaningful rationale of university support may make them feel that these provisions back up their need for autonomy and allow them to express themselves (Liu, Gorgievski, Qi, & Paas, 2022). One prerequisite of the Triple Helix model is that ‘the university’s enhanced relevance to technology transfer, firm-formation and regional renewal places it in a primary position in knowledge-based society in contrast to its secondary role in industrial society’ (Cai & Etzkowitz, 2020, p. 195). Table 3 present the role of university in supporting the siswapreneur.

Table 3: The role of University

Role	Description
Entrepreneurship program and courses	Universities can offer dedicated entrepreneurship programs and courses that provide students with the knowledge, skills, and mindset necessary for starting and running their own ventures. These programs can cover various aspects of entrepreneurship, including business planning, marketing, finance, and innovation.
Incubators and accelerators	Universities can establish incubators and accelerators that provide physical space, mentorship, and networking opportunities for student entrepreneurs. These environments foster collaboration, idea sharing, and access to experienced mentors and industry experts who can guide students through the entrepreneurial journey.
Funding and Grant	Universities can offer funding and grants specifically tailored for student entrepreneurs. These financial resources can support the development of prototypes, proof-of-concept, or initial business operations. Such funding opportunities can help students turn their ideas into viable businesses.

Networking and Mentorship	Universities can facilitate networking events, workshops, and mentorship programs that connect student entrepreneurs with successful entrepreneurs, alumni, and industry professionals. These connections provide valuable guidance, insights, and potential partnerships for students, helping them navigate the entrepreneurial landscape.
Intellectual property support	Universities can provide guidance and support in protecting and commercializing intellectual property (IP) for student entrepreneurs. This can include assistance with patent filings, copyright issues, and licensing agreements, ensuring that students' innovative ideas are properly safeguarded and monetized.
Collaboration and underdisciplined opportunities	Universities can encourage collaboration between students from diverse disciplines, fostering cross-pollination of ideas and skills. Interdisciplinary programs and competitions can promote innovation and provide a platform for students to work together on entrepreneurial projects.
Alumni Network and Partnership	Universities can leverage their strong alumni networks and industry partnerships to provide student entrepreneurs with connections, mentorship, and potential funding opportunities. Engaging successful alumni who have experience in entrepreneurship can inspire and guide current students.

Government Support

Governments can play a significant role in supporting students involved in entrepreneurship by creating an enabling environment and providing various forms of assistance. By implementing these measures, governments can foster a favourable environment for student entrepreneurs, promote innovation and economic growth, and create a pipeline of successful start-ups. Government support can be instrumental in nurturing and empowering the next generation of entrepreneurs, driving job creation, and fostering economic development. According to Kaya (2019), government support is important for the growth of small businesses and fosters the optimism of business actors in USA. The study of Lee & Kim (2019) mentioned government support to build business sustainability for Korean start-ups. Then Persada, Baihaqi, Fauziyah, & Ardiantono (2020) proved the impact of government support on innovation among SMEs in Surabaya. Those various backgrounds indicate that government support is needed in building an entrepreneurial ecosystem so that it can be a pillar for business sustainability (Wijaya, & Nuringsih, 2022). Table 4 present the role of government in supporting the siswapreneur.

Table 4: Role of Government Support

Role	Description
Access to funding	Governments can establish funding programs specifically designed for student entrepreneurs. These programs can provide grants, loans, or venture capital to help students start and grow their businesses. Financial support can be crucial in overcoming the initial barriers and capital requirements of entrepreneurship.
Regulatory Support	Governments can create regulatory frameworks and policies that support and encourage entrepreneurship. This can involve simplifying bureaucratic processes, reducing red tape, and providing tax incentives or exemptions for start-ups. Streamlined regulations can make it easier for student entrepreneurs to establish and operate their businesses.
Business incubation and mentorship program	Governments can establish or support business incubators and mentorship programs that provide student entrepreneurs with access to shared office spaces, resources, and experienced mentors. These programs can offer guidance, networking opportunities, and a supportive environment for students to develop their business ideas.
Education and training initiative	Governments can invest in entrepreneurship education and training initiatives within educational institutions. By incorporating entrepreneurship modules or courses into the curriculum, students can gain practical knowledge, skills, and

	entrepreneurial mindsets early on. Governments can also organize workshops, seminars, and conferences to promote entrepreneurship and provide learning opportunities for student entrepreneurs.
Research and development support	Governments can provide funding and resources for research and development projects undertaken by student entrepreneurs. This support can stimulate innovation and encourage the development of new technologies, products, and services that have the potential for commercialization.
Network and collaboration platform	Governments can establish platforms that facilitate networking and collaboration among student entrepreneurs, industry professionals, investors, and government representatives. These platforms can provide opportunities for knowledge sharing, partnerships, and access to markets, helping student entrepreneurs connect with the right people and resources to support their ventures.
International Exposure and access	Governments can assist student entrepreneurs in accessing international markets and participating in trade shows, exhibitions, and entrepreneurship events abroad. This support can broaden their horizons, expose them to global opportunities, and foster cross-border collaborations.
Recognition and award	Governments can organize entrepreneurship competitions and awards to recognize and celebrate the achievements of student entrepreneurs. These initiatives can not only provide financial incentives but also create a supportive ecosystem that encourages and promotes entrepreneurship.

Private Corporation Support

By engaging with private corporation, student entrepreneurs can gain practical support, resources, and industry insights to help them succeed in their entrepreneurial pursuits. Private companies have the expertise, networks, and resources that can complement students' academic learning and accelerate their entrepreneurial journey. Innovativeness is about organisations that engage in, experiment with and support novel ideas that might or might not result in new products, services or processes (Lackeus, Lundqvist, Williams Middleton & Inden, 2020). Hence, it is important for siswapreneurs to have an engagement with the private institution or corporation. Table 5 present the role of private corporation in supporting the siswapreneur

Table 5: Tole of Private Corporation

Role	Description
Sponsorship and funding	Private companies can offer financial support to student entrepreneurs through sponsorship or investment. This can come in the form of grants, scholarships, or seed funding to help students launch or grow their ventures. Companies may also provide access to venture capital networks or angel investors.
Business incubator and accelerator	Private companies can establish or partner with business incubators or accelerators to provide student entrepreneurs with physical space, resources, mentorship, and networking opportunities. These programs can offer guidance, access to industry experts, and connections to potential customers or investors.
Experiential learning	Private companies can provide internships, co-op programs, or experiential learning opportunities to student entrepreneurs. By working in a real-world business environment, students can gain practical experience, learn from professionals, and apply their entrepreneurial skills in a supportive setting.
Expertise and industry insight	Private companies can offer their expertise and industry insights to student entrepreneurs. This can involve organizing workshops, seminars, or guest lectures on topics such as marketing, finance, product development, or market trends. Sharing industry knowledge can help students refine their business ideas and strategies.
Collaborating and partnership	Private companies can collaborate with student entrepreneurs on projects, research initiatives, or product development. These collaborations can provide

	students with access to resources, facilities, and industry networks, helping them gain practical insights and credibility for their ventures.
Access to network and customer	Private companies can facilitate access to their networks of customers, suppliers, or industry partners. This can help student entrepreneurs validate their ideas, gain early customers, or pilot projects, and establish valuable relationships within their target markets.
Mentorship and guidance	Private companies can offer mentorship programs, connecting student entrepreneurs with experienced professionals who can provide guidance, advice, and support. Mentors can share their industry knowledge, help students navigate challenges, and provide valuable insights based on their own entrepreneurial journeys.
Recognition and award	Private companies can organize entrepreneurship competitions or awards to recognize and celebrate the achievements of student entrepreneurs. These initiatives can provide visibility, credibility, and potential funding opportunities for student ventures.

Conclusion

The involvement of universities, governments, and private companies is crucial in supporting student businesses and fostering entrepreneurship. Together, these stakeholders create a supportive ecosystem that nurtures student entrepreneurs and increases their chances of success. Universities play a vital role by offering entrepreneurship programs, courses, and resources tailored to the needs of student entrepreneurs. These educational initiatives provide students with the knowledge, skills, and mindset necessary for entrepreneurial endeavors. Universities also provide access to funding, mentorship, and networking opportunities through incubators, accelerators, and collaborative programs. By integrating entrepreneurship education into the curriculum and creating platforms for experiential learning, universities empower students to translate their ideas into viable businesses. Governments play a significant role in creating an enabling environment for student entrepreneurs. They can provide funding programs, regulatory support, and incentives to reduce barriers to entry and support business growth. Governments foster entrepreneurship through policy frameworks that simplify bureaucracy, offer tax incentives, and establish initiatives to support research and development. Furthermore, governments facilitate networking opportunities, organize entrepreneurship competitions, and promote international market access for student entrepreneurs. By implementing these measures, governments encourage innovation, job creation, and economic growth. Private companies contribute to the success of student businesses by offering sponsorship, funding, and expertise. They provide financial support through grants, scholarships, and investments, allowing student entrepreneurs to secure the necessary resources for business development. Private companies also establish incubators, accelerators, and mentorship programs that offer mentorship, networking, and access to industry professionals. Through collaborations, internships, and experiential learning opportunities, private companies provide students with practical experience, industry insights, and valuable connections. Additionally, private companies can serve as customers, partners, and platforms for showcasing student products and services. In conclusion, the involvement of universities, governments, and private companies is essential for supporting student businesses. Universities provide education, resources, and mentorship to foster entrepreneurial skills. Governments create a conducive environment through funding, regulatory support, and policy frameworks. Private companies offer financial assistance, expertise, mentorship, and access to networks. By combining their efforts, these stakeholders empower student entrepreneurs to thrive, contribute to the economy, and drive innovation. Collaboration among universities, governments, and private companies creates a comprehensive ecosystem that nurtures and supports the next generation of entrepreneurial leaders.

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