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# A Conceptual Paper in Developing Model of Entrepreneurial Ecosystems to Boost Graduate Entrepreneurs Through Longitudinal Study

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**Abstract:** High unemployment among university graduates in Malaysia is concerning. Factors contributing to the university ecosystem that support the creation of student and graduate entrepreneurs remain debatable. Malaysian public universities produce 133,940 graduates per year, however, 14,466 remain unemployed six months after graduation. This demonstrates the futility of the university entrepreneurial ecosystem to channel these graduates' mindsets. The OCDC Entrepreneurial Ecosystems framework is the reference for most universities, and evaluating the weaknesses and strengths in the ecosystem pillars at the university level allows for clarity on relevant variables. The main objective of this study is to reconsider the model in the context of Malaysian universities that will enhance student entrepreneurial growth to create jobs and generate income while lowering unemployment and improving GDP that is consistent with the SDG agendas of 'Decent Jobs and Economic Growth,' MySTIE focuses on Education, and the Big Bolds relate to Future-ready talent that relates to MOHE and MECD policies. The study will use a longitudinal qualitative multiple-case study approach through a focus group using semi-structured questions with three groups of participants. Samples will be selected using a purposeful random sampling technique. Two top management, three students involved in business while studying, and three entrepreneur alumni from UiTM, UPM, and USM will be interviewed since these universities were awarded the MOHE Entrepreneurial Awards. Data will be analyzed using thematic analysis via NVivo software. This study will contribute to implementing an entrepreneurial ecosystem model according to Malaysia's public university setting. Recommendations to the university and MOHE will be provided based on the findings to enhance students' involvement in entrepreneurship while still at university. The government can improve on appropriate regulations in providing resources and budget based on this research findings so that the university can serve as an 'incubator' for driving university students to become job creators.

**Keywords**: *Entrepreneurial Ecosystems, Longitudinal Study, Public Universities, Graduate Entrepreneurs*

## 1. Introduction and Background

Being a developing country, Malaysia has a high unemployment rate among young graduates emerging from universities. This problem has triggered the efforts of the Malaysian government to turn the country into a knowledge-based economy, where 'entrepreneur' was described as one of the main elements to solve the unemployment problem in Malaysia. University students can be cultivated as job creators rather than job seekers. To reduce or eradicate unemployment, governments are stepping up programs and policies to further aid in reducing the unemployment rate by boosting entrepreneurship (Farinha, Lopes, Bagchi-Sen, Sebastião, & Oliveira, 2020). Table 1 shows between 2018 and 2022, Malaysia saw a significant rise in new graduates' unemployment, particularly during the Covid-19 pandemic. Graduate unemployment increased by 4.13% in 2018 and by 5.5% in 2019. The number rose from 1,620,000 in 2018 to 2,024,000 in 2020 and started decreasing from 2020 to 2022 (DOSM, 2023). The unemployment rate among university graduates can be overcome when the university cultivates an entrepreneurial mindset to these graduates through the conducive entrepreneurial ecosystem in the university. The surroundings that the university offer is supposed to be unique for emerging entrepreneurship. To educate aspiring potential students and assist them in taking the first steps toward launching and developing a business, tailored practices must be prepared. It has been found that the university environment has a significant influence on students' entrepreneurial tendencies (Johnson, Bock, & George, 2019; Nicholls-Nixon, Valliere, Gedeon, & Wise, 2021). Universities must be entrepreneurial themselves to effectively encourage entrepreneurship. Encouraging and fostering entrepreneurship is extremely likely to affect what most Higher Education Institutions (HEIs) do. Through awareness, this university can create interest among the students and from the interest the development of competence can be enhanced thus leading to the students' action in becoming student entrepreneurs followed by the graduate entrepreneurs. These can reduce the unemployment rate in the country.

**Table 1: The Unemployment of Fresh Graduates in Malaysia from 2016 – 2022**

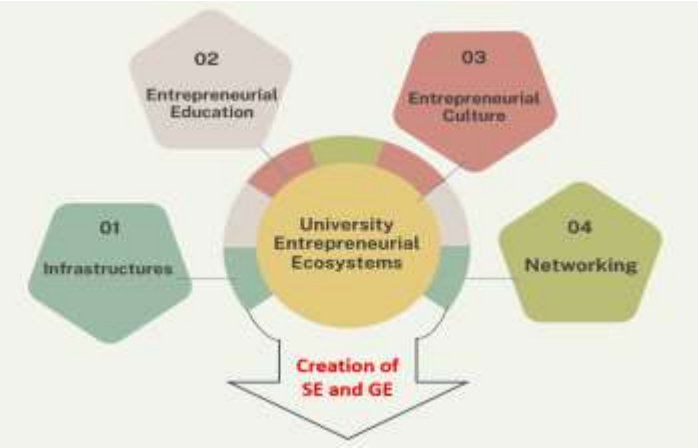
| Years | Unemployment of Fresh Graduates |
|---|---|
| 2018 | 1,620,000 |
| 2019 | 1,703,000 |
| 2020 | 2,024,000 |
| 2021 | 1,987,000 |
| 2022 | 1,878,000 |

Source: Malaysia Ministry of Higher Education (MOHE) (2022) and Department of Statistics Malaysia (DOSM) (2023).

Since 2020, the Malaysia Ministry of Higher Education (MOHE) has set a target for every public university (PU) to produce 5% of graduate entrepreneurs from the total graduates. One of the government's problems is how to shift the minds of students to create a new venture rather than searching for jobs. It was noticed that the university climate had a great influence on entrepreneurial intentions (Johnson et al., 2019; Nicholls-Nixon et al., 2021). The entrepreneurial intention of the students was closely linked to the university climate (Salleh, Noor, & Rahman, 2019). Many scholars have identified entrepreneurship as a solution to the issue of unemployed graduates (Looi Kim & Maritz, 2021; Pandit, Joshi, & Tiwari, 2018).

Based on the Organization for Economic Co-operation and Development (OECD) Entrepreneurial Ecosystem framework, there are seven elements highlighted: leadership and governance; organizational capacity, people and initiative; entrepreneurship development in teaching and learning; pathway for entrepreneurs; external relationship for knowledge exchange; international institution; and measuring the impact of the entrepreneurial university. There is a limited study based on the OECD Entrepreneurial Ecosystem framework in the literature; thus, this research will explore the most significant elements that will contribute to creating student entrepreneurs (SE) and graduate entrepreneurs (GE) in the setting of PU in Malaysia by classifying the seven elements in the ecosystem into 4 key factors (Figure 1): Infrastructures (organizational capacity, people and initiative); entrepreneurial education (entrepreneurship development in teaching and learning); Entrepreneurial Culture (leadership and governance and pathway for entrepreneurs) and Networking (external relationship for knowledge exchange and international institution).

**Figure 1: Research Framework**




According to Boldureanu, Ionescu, Bercu, Bedrule-Grigoruţă, and Boldureanu (2020), entrepreneurs are most successful when they have access to the human, financial and professional resources they need, and operate in an environment in which policies encourage and safeguard entrepreneurs. This link is described as the 'entrepreneurship ecosystem'. This study adopts the OECD Entrepreneurial Ecosystem framework as a conceptual basis in this study. The objective of this study is to ensure a favorable entrepreneurial environment for a university where the top management at the university should include the significant elements in this study's findings to be adopted in the Malaysian public university setting.

Malecki (2018), Stam and Spigel (2016) highlight that the study on the elements of entrepreneurial ecosystem have been neglected, while Adams (2021) and Donegan, Forbes, Clayton, Polly, Feldman, and Lowe (2019) admitted that most entrepreneurial ecosystem studies lack a 'time' dimension since most research to date consists of cross-sectional studies that are static, and thus miss out on crucial temporal change dynamics of entrepreneurial ecosystem evolutionary processes across time. An entrepreneurial ecosystem is always developing and evolving (Spigel & Harrison, 2018). Therefore, this study will investigate how Malaysian public universities cater to these four main elements in the university environment to develop SE and GE and at the same time, this study will adopt a longitudinal study that will explain how the entrepreneurial ecosystem elements evolve in simulating student entrepreneurs.

This study aims to address a crucial gap in the existing literature by conducting rigorous research through a longitudinal study. The study will investigate the significance of various elements in the university entrepreneurial ecosystem, using the OECD Entrepreneurial Ecosystem (EE) framework. Currently, there is a lack of research on this topic, which makes this study an important addition to the existing literature.

According to Embi, Jaiyeoba, and Yussof (2019), the university's efforts in developing a relevant curriculum, exposing students to the entrepreneurial ecosystem, and acquiring the necessary infrastructure to create the right learning environments are lacking in motivating students to become entrepreneurs. Since the Malaysian government has increased the allocation for the Higher Education Ministry (MOHE) from RM15.3 billion in 2023 to RM16.8 billion in the recent Budget 2024, the top management in the university can start planning to improve the universities' entrepreneurial ecosystem to create a conducive entrepreneurial environment to boost the student's involvement in entrepreneurship.

According to Suryanto (2019), several factors are important in the context of higher education. These factors include policies from higher education councils and university leadership regarding courses, the presence of business incubation centers, outcomes of downstream research, and faculty members influencing students' mindsets. Additionally, collaboration with government agencies and financial institutions is also crucial. Mentorship and networking opportunities have proven to be very useful for students, providing them with practical knowledge and skills, as well as access to important networks and resources for new ventures (Tomy & Pardede, 2020). According to Pittaway, Aissaoui, Ferrier, and Mass (2020), universities are investing in various projects such as student venture pre-incubators, incubators, rapid prototyping laboratories, experimental facilities, mixed-use entrepreneurship spaces, and even entrepreneurial dorms. Entrepreneurship education involves the processes of developing, fostering, and cultivating entrepreneurial abilities in students through the enhancement of information gained through hands-on experiences and active involvement in academic contexts (Wei, Liu, & Sha, 2019). Entrepreneurship culture can impact entrepreneurial activity and develop students' favorable views towards entrepreneurship (Valencia-Arias, Arango-Botero, & Sánchez-Torres 2022). Integrating institutions such as universities and government agencies allows for the necessary social connection and networking to enter the business (Dahesh, Tabarsa, Zandieh, & Hamidizadeh, 2020). However, the best practices in Malaysian public universities to cultivate entrepreneurial mindset among students remain unclear.

The role of universities in fostering an effective ecosystem of entrepreneurship is therefore considered important (Chepurenko & Kristalova, 2019). Several universities in Western countries adopted the OECD Entrepreneurial Ecosystem framework which consists of seven elements. The seven elements are leadership and governance; organizational capacity, people and initiative; entrepreneurship development in teaching and learning; pathway for entrepreneurs; external relationship for knowledge exchange; international institution and measuring the impact of the entrepreneurial university. There have been various attempts in the literature to define the Entrepreneurial University, but no consensus has been reached (Guerrero-Cano, Urbano, & Kirby, 2006). As a result, this OECD EE framework was created in 2012 (OECD, 2012). However, the study on the OECD EE framework is limited in terms of the effectiveness and significance of the elements in the Malaysian university setting. Thus, this study aims to develop an EE model based on Malaysia's public university setting.

In investigating entrepreneurial intention and its many influential factors, there seems to be lacking research about environmental factors, especially in the Malaysian context (Md Dahlan, Zainuddin, Mat Din, & Md Salleh, 2019). To address this gap, this study intends to fill the literature gap by investigating the students' actions

based on the university ecosystem that influences the student's entrepreneurial intention. Not only that, but this research will also fill in the gap by addressing a 'time' dimension that was neglected in the previous study (Adams, 2021; Donegan et al., 2019) by adopting a longitudinal study. As a result, this study proposes to fill a critical gap in the literature by conducting rigorous research using a longitudinal study to investigate the significance of elements in the university entrepreneurial ecosystem.

## 2. Literature Review

### University Entrepreneurial Ecosystem

Based on the literature, the role of universities in developing entrepreneurship ecosystems is vague(Bedő, Erdős, & Pittaway, 2019). The entrepreneurship ecosystem is characterized in different ways based on research objectives, design and data. Some of the researchers described the ecosystem of entrepreneurship as "an interconnected group of actors committed to sustainable development in a local geographical community by promoting and facilitating new sustainable ventures" (Cohen, 2006, p. 3). While Isenberg (2011, pg 6) defines it as "… self-sustaining entrepreneurship, …need a conducive policy, markets, capital, human skills, culture, and supports". According to Stam and Van de Ven (2021) "… networks of entrepreneurs, leadership, finance, talent, knowledge, and support services determine the success of the ecosystem". Meanwhile, Theodoraki and Messeghem (2017, pg. 50) defined an entrepreneurial ecosystem based on three dimensions: "actors who form it and their interactions (formal and informal network), physical infrastructure, and culture".

Several researchers agree that a university with an entrepreneurial ecosystem is crucial (Bedő, Erdős, & Pittaway, 2020; Frederick, 2011). A study by Engel (2015) recognizes that universities play a role in promoting the environment as an agent and expend it as an "incubator" for graduates to start a new venture (Harper-Anderson 2018). A university can be interpreted as a platform for the provision of facilities, services, know-how and social networks based on these academic principles, but also for the creation and sustainability of an environment for students to engage in entrepreneurship. In the formation and viability of the environment, universities take on a more central role and provide more than just resources. Unfortunately, literature and research on entrepreneurship education and learning are almost unclear about these larger institutional circumstances and do not deeply consider how educational practice can connect with the university as a whole or the ecosystem of entrepreneurship (Pittaway et al. 2020). Previous reviews of entrepreneurship education emphasize this gap (Gorman, Hanlon, & King, 1997; Wang & Chugh 2014). Therefore, for this study, the entrepreneurial ecosystem is defined according to Theodoraki and Messeghem (2017) and Frederick's (2011) combined definition: entrepreneurial ecosystem element consists of physical infrastructure, culture, network and entrepreneurial education.

The OECD Entrepreneurial Ecosystem Framework highlights seven key areas: leadership and governance, organizational capacity, people and incentives, entrepreneurship development in teaching and learning, pathways for entrepreneurs, university-business/external relationships for knowledge exchange, the entrepreneurial university as an international institution, and measuring the impact of the entrepreneurial university. This framework is used as a guideline to identify the strengths and weaknesses, empowering to drive entrepreneurial cultural transformation. However, the study based on the OECD EE framework is limited in the literature (Alghamdi, 2020; OECD, 2012), especially in the Malaysian public university setting. Thus, this study will develop an EE model that is based on the Malaysian public university environment.

### University Infrastructure

The entrepreneurial ecosystem comprises both physical and non-physical components. Physical infrastructure such as the readiness of offices, space for growing ventures, communications and transportation systems are also seen to play a role in entrepreneurship (Audretsch & Belitski, 2021). Gradually, universities are investing in student venture pre-incubators and incubators, rapid prototyping labs, experimental labs, mixed-used entrepreneurship spaces and even entrepreneurial dorms that provide a place for young entrepreneurs to grow in their personal and business lives (Pittaway et al., 2020).

The physical assets and facilities that are being set up in the university environment give educational institutions their appropriate shape and atmosphere for teaching and learning. Physical assets and the facilities in the university environment reflected the quality of the institutions (Abdullahi & Wan Yusoff, 2018). Even

though the physical assets and facilities such as entrepreneurship space, prototyping lab and shop lots in higher education are complex and cost intensive. Therefore, it is very challenging to provide the physical infrastructure to ensure the quality of the institution is at par with the high-reputation entrepreneurial university. Physical infrastructure would add value to the educational institution in determining whether the university is contributing towards entrepreneurial culture. The goal of physical assets and facilities is simply to develop the process into practical educational activities.

The role of physical infrastructure development in the entrepreneurial process has received limited attention (Audretsch, Heger, & Veith, 2015), especially in the university environment. It is acknowledged by Bennett (2019) that investments in infrastructure and environmental changes will stimulate the actions of entrepreneurs as they create changes in the physical infrastructure that may act to both open and close opportunities for entrepreneurs thus contributing to both enable and disable entrepreneurial opportunities. However, the results of the symmetrical analysis show that access to physical infrastructures is not significantly associated with entrepreneurial intentions among female Saudi university students (Ali, Ali, & Badghish, 2019). A study by Franke and Lüthje (2004) found that the support provided by the university environment hurt entrepreneurial intent. The results from this study indicated that lower-level students were found to have intentions followed by a negative appraisal of the university's activities to provide the students with the knowledge to start new venture creations actively (Frank & Luthje, 2004). The differences in entrepreneurial intentions relative to an individual's perception of the university's physical infrastructure have a mixture of outcomes.

**Entrepreneurship Education**

Entrepreneurial education is defined as, "the whole set of education and training activities within the educational system, or not that try to develop in the participants the intention to perform entrepreneurial behaviors or some elements that affect that intention, such as entrepreneurial knowledge, the desirability of entrepreneurial activity, or its feasibility" (Liñán, 2004, p. 163). Entrepreneurial education curricula and programs that are being offered to higher institution students can have an impact both on the local entrepreneurial culture and entrepreneurial activity in the university. A university can also assist students directly with technical skills for ventures (Feld, 2020). By providing appropriate entrepreneurial education it can attract entrepreneur's establishment.

Entrepreneurship intentionality was suggested as an indicator of the effectiveness of entrepreneurship education programs. Some researchers focused on assessing the impact of entrepreneurship education programs on students' intentions to start a business venture. The characteristics of entrepreneurship education indicated that the majority of the programs were conducted to increase the awareness and understanding of entrepreneurship as a process (Chang & Rosli, 2019), and this awareness of entrepreneurship was seen as a career possibility (Mansor & Othman, 2011). Another researcher, Rae (1997, p. 199) suggested that "the skills traditionally taught in business schools were essential, but not sufficient to make a successful entrepreneur." The findings by Smith, Barr, Barbosa, and Kickul (2008) and Weaver, Dickson, and Solomon (2006) found that there is a significant positive correlation between involvement in entrepreneurial programs and new start-ups. The findings from Ali, Ali, and Badghish (2019) done at Saudi universities show that entrepreneurship education and training are significantly associated with the development of entrepreneurial intentions among students.

The entrepreneurship curriculum is organized by discipline, program, and a degree. It is a set of courses and their content and the courses are based on a syllabus that specifics learning objectives, topics and grading criteria. Entrepreneurial curricular activities will enhance the student learning experience. These include and are not limited to programs, clubs, living experiences, workshops, guest speakers, forums, networking and other programs.

**Entrepreneurial Culture**

Entrepreneurial culture is the creation of a culture within the university that enables opportunity recognition and entrepreneurial capacity building, that will lead towards the entrepreneurial journey. According to Roundy (2017), there is no difference in limited resources in different locations, regardless of a small or rural location in creating a conducive entrepreneurial culture. Likewise, the culture of universities towards entrepreneurship

is also considered to vary considerably with some institutions having favorable entrepreneurial cultures and some may be less (Wright, Siegel, & Mustar, 2017). "Culture served as a conductor for entrepreneurial behavior and as the catalyst to entrepreneurship" (Berger, 1991, p. 122). The presence of a culture that supports and encourages entrepreneurial actions and activities as needed (Hisrich, Langan-Fox & Grant, 2007). The sociological theory of entrepreneurship by Max Weber (1864-1920) holds social cultures as the driving force of entrepreneurship.

Appropriate culture can lead entrepreneurs towards preferences for entrepreneurship (Bogatyreva, Edelman, Manolova, Osiyevskyy & Shirokova, 2019). The study by Ali, Ali, and Badghish (2019) shows that access to finance and cultural factors are not significantly associated with entrepreneurial intentions, whereas government policies and regulations, government programs and support and social factors are significantly associated with the development of entrepreneurial intentions among female Saudi Arab university students. The individuals' characters, actions, economic conditions, and social and political systems were all surrounded by the national culture from which they were initiated (Berger, 1991). Some countries were yet to experience a cultural shift to a paradigm that supported entrepreneurial behavior. Culture served as a "conductor for entrepreneurial behavior and as the spur to entrepreneurship" (Berger, 1991, p. 122). The presence of a favorable environment and motivational factors; such as financial rewards, achievement, and individual fulfillment motivated entrepreneurship, but a university culture that supports and encourages entrepreneurial actions and activities was needed.

**Networking**

The entrepreneurial ecosystem may be described as a generic, context aiming to foster entrepreneurship within a given territory. In entrepreneurship ecosystems, it is becoming clear that universities play a vital role, and that social capital, networks, mentoring and the gaining of entrepreneurial ability in a locality are all important features. Therefore, it consists of a horizontal network (customers and providers) and a vertical network (competitors and counterparts) (Theodoraki & Messeghem, 2017). It also includes university supporting entrepreneurs: funding; support entities (business incubators, consultants, etc.); and research (research centers, laboratories, etc.). The network should include different groups of people such as entrepreneurs, investors, mentors and dealmakers (Feldman & Zoller, 2016). Such conditions also include the density and connectivity of social networks and the existence of social capital in these networks (Feld, 2012). A person's role in social networks, with close relatives who were entrepreneurs, contributes towards entrepreneurial action (Raijman, 2001). Internal and external networking relationship supports and facilitate entrepreneurs in setting up their businesses through strategic networks with private sectors and government agencies, through the planning and implementation of its activities that encourage an entrepreneurial culture in the university environment. The 'social learning theory' is developed from the conceptualization that learning is a process through knowledge transmission and assimilation towards a view of learning, and identity change within a network of social relationships. A university should bring in expertise from different backgrounds that have a strong knowledge base and research skills, and also a network of formal and informal academic contacts. The role played by networks in the process of knowledge transfer has been the focus of great successful networking.

## 3. Research Methodology

**Description of Methodology**

This study will be conducted by using qualitative study by implementing multiple case studies. Starting with a case study; followed by a cross-case analysis with the three different groups of respondents from each university then comparing it with the three universities in the multiple case studies. The qualitative data will help to understand the scenario, while multiple case studies allow replication of findings, and enable researchers to confirm or disprove (Yin, 1994) the elements in the OECD EE framework that may arise. The rationale for conducting qualitative data is that the variable is uncertain. This study aims to develop an entrepreneurial ecosystem model in the university that is favorable to creating student and graduate entrepreneurs. In tandem, this study will be done by applying a longitudinal study since the data collection will be done in two phases during the 3 years time frame. The first phase of exploratory research will be done through field observations and focus group interviews with two of the top management, three students who are active in business while studying, and three entrepreneur alumni from Universiti Teknologi MARA (UiTM),

Universiti Putra Malaysia (UPM) and Universiti Sains Malaysia (USM). Since these three universities previously won the prestigious Malaysia Ministry of Higher Education Entrepreneurial Award (MEA) it is worthwhile to examine their approaches in fostering a suitable entrepreneurial climate. Top management will provide information about the university's entrepreneurial ecosystem, student entrepreneurs will provide information about the ecosystem's conduciveness, and graduate entrepreneurs will provide feedback on the impact of the university's entrepreneurial ecosystem on their businesses after they graduate. Findings from this exploratory phase will then be used to suggest strategies for enhancing the university entrepreneurial ecosystem model to cultivate entrepreneurs among students. The discoveries from the first phase will be used to conduct the second phase to identify the progress of entrepreneurial ecosystem elements over time.

Qualitative research allows for the examination of data that is not easily accessible or assessable in statistical form (Sekaran, 2006). In this study, hypotheses testing will not be done to examine differences or relationships among variables because the study's purpose involves gaining a deeper understanding of the university's entrepreneurial ecosystem elements that will lead toward student entrepreneurs and graduate entrepreneurs. The exploration design will be carried out in two main stages, which were marked by an initial phase carried out with qualitative data collection through a focus group with 3 groups of participants (top management, students' entrepreneurs and entrepreneurs' alumni) and an analysis phase, then continue with a second stage of focus group after a year with the same participants of students' entrepreneur and analysis phase.

**Qualitative Research Method**

A qualitative multiple case study approach will be adopted in this study which will enable us to get access to in-depth and information-rich data (Patton, 2014) and to understand how individuals' perspectives are a response to societal and institutional demands in a socially constructed context Patton (2002). But before multiple case study is being done, the within-case analysis will be carried out based on each university (UiTM, UPM, USM). Within-case analysis entails applying the techniques suggested by Strauss (1987). Normally, within-case analysis involves case-study write-ups that are generally descriptive. Also, within-case analysis is used to enable the researcher to become familiar with each case before the cross-case analysis is performed. Cross-case analysis is used to summarise the findings from each university; this encompasses three different cases and the within-case analyses by using thematic analysis. According to Miles and Huberman (1994), cross-case analysis will improve the generalisability of complicated situations. Yin (2009) also asserts that cross-case analysis is normally convincing and extensive. In the cross-case analysis conducted for this project, the three case studies are compared with the literature and with the themes described by the top management, student entrepreneurs and entrepreneur alumni.

According to Leitch, Hill, and Harrison (2010), multiple case studies require the process of coding to be performed case-by-case, identifying themes, and continuing with open coding, focus coding, and axial coding. Open coding requires choices about what should be emphasized, minimized, and eliminated, based on the researcher's knowledge of the subject. Focus coding organizes the information in a systematic way for easy interpretation. Finally, axial coding revises and refines categories; repeated themes or patterns are extracted from the data to make comparisons and connections between the codes, categories, and concepts.

The interviews will be analyzed using thematic analysis (Flick, 1998), using NVivo software. The purpose of this analysis is to identify themes that are significant or interesting, such as patterns in the data, and use these themes to address the research or suggest something about a problem. This is far more than merely summarizing the data; it interprets and makes sense of a good thematic analysis. The interview session is expected to last for about an hour to an hour and a half. The collected information is then written up as descriptive case studies which are then cross-analyzed using serial and thematic coding based on the three-focus group before multiple case studies can be done.

## 4. Conclusion

This study attempts to fill a critical gap in the existing knowledge by undertaking rigorous research through a longitudinal study. Using the OECD Entrepreneurial Environment (EE) framework as a guideline, this study will evaluate the importance of various factors in the university entrepreneurial ecosystem as a conceptual framework. There is currently a scarcity of research on this issue, making our work a valuable contribution to

the existing literature. Through the findings of this study, a university entrepreneurship ecosystem model will be developed to guide the top management in the public universities in Malaysia in prioritizing the resources towards building a favorable ecosystem. Universities will not only commit to incorporating sustainability into their courses and operations, but they will also be at the forefront of generating a new generation of entrepreneurs.

This study contributes to the gap in the literature on the favorable entrepreneurship ecosystem in the university that will lead the university's top management to create an entrepreneurial university instead of a traditional university that can cope with the turbulent environment. This will lead towards building 'talent stock' as emphasized by Big Bolds and 8i Innovation Helix Ecosystem Analysis in 10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) and Wawasan Kemakmuran Bersama (WKB) 2030 on the development of a knowledge-based and high-value economy. It will help to improve the Sustainable Development Goals (SDGs) on agendas 4 and 8: 'Quality Education' and 'Decent Work and Economic Growth,' which will drive MOHE and Minister of Entrepreneur and Co-operatives Development (MECD) to boost education quality and crafting policies for talented entrepreneurs. This study will impact the quality of entrepreneurial education at universities to increase employment creation, improve the standard of living, and boost productivity, particularly in National Key Result Areas (NKRA) 11. Simultaneously, the country's Gross Domestic Product (GDP) and economy will improve significantly.

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