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## INFLUENCE OF *TA'AWUN* (MUTUAL COOPERATION) IN SUSTAINING CREATIVITY AND INNOVATION AMONG ENTREPRENEURSHIP DEVELOPMENT CENTRES OF UNIVERSITIES IN MALAYSIA

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### ABSTRACT

Creativity and innovation in entrepreneurship contribute to economic growth and employment opportunities. In any economy, policies on social, political, technology, and economics should encourage long-term economic growth. Creative technology entrepreneurship may be used as a feasible alternative to contribute towards the economic growth. Creative technology entrepreneurship provides the 'sustainability' feature to face continuous uncertainty. In doing so, creative technology entrepreneurship education plays a significant role in providing university students not only with formal training but also hands-on competency to apply creative technology entrepreneurship. The primary objective of this study was to explore the influence of *ta'awun* (mutual cooperation) in entrepreneurship development centres of universities in sustaining creativity and innovation. The study interviewed policymakers and educators of technology entrepreneurship to investigate the phenomenon. The results of the study showed that *ta'awun* has been incorporated in the formal tertiary education programme among entrepreneurship development centres to meet the requirements of creativity and innovation. The findings suggest that follow-up studies use a larger size of informants and a greater scope of the study to obtain more robust, comprehensive, and generalizable results.

**Keywords:** *Ta'awun* (mutual cooperation), technology entrepreneurship; enterprise; culture; creativity

### INTRODUCTION

Economies are moving rapidly from capital-intensive orientation to knowledge orientation due to the forces of the business environment. The capital-intensive orientation is unable to sustain the firm's competitive advantage and profitability due to its emphasis on cost minimization and efficiency (Bye & Faehn, 2022; Shen et al., 2022; Hsu & Chen, 2023; Jobier, 2023; Guneratne, 2023). When businesses are operating in a dynamic environment, they have to react to the

changes that occur at a very fast pace (Aini et al., 2023; Kamal et al., 2023; Singh & Maheswaran, 2023; Zhang et al., 2023). In this situation, having a unique capability gives the firms an advantage, which could not be easily duplicated, substituted, and modified by other firms.

Realizing the need to a build unique capacity to compete, firms started to establish networking with universities that could provide the process of building the capacity to be unique (Jobber, 2023; Rosário & Dias, 2022; Morseletto, 2023). In other words, business firms are looking at the entrepreneurship development facilities at universities as incubators or training grounds for them to produce talents with the unique capability (Godfrey et al., 2023; Rivera & Chun, 2023; Jobber, 2023; Guneratne, 2023; Welsh & Lopez, 2023). Both the government and companies are working closely with universities; to use the latter's research and development staff, facilities, and equipment to build the capacity for the companies to cater the needs of the market.

In the meantime, the government realizes that the global debt crises and high unemployment rates have sparked the third wave of economic recession. The global debt crisis and high unemployment rates have been major contributing factors to the first and second waves of economic recession (Andrews et al., 2022; Apostu et al., 2022; Herman, 2022). The rising levels of unemployment were due to companies not being able to generate enough income to maintain employees. In addition, global debt crises have caused nations around the world to reduce spending on infrastructure projects or social programs, leading to further decreases in economic output. High unemployment rates are also making it more difficult for people who are out of work due to the recessionary environment; they lack access to job opportunities that can help them stay afloat financially during the first and second waves of economic recession (Andrews et al., 2022; Apostu et al., 2022; Herman, 2022). A more sustainable solution is required to address the serious economic situation (Rosário & Dias, 2022; Morseletto, 2023). Most policymakers are convinced to use entrepreneurship as a catalyst to sustain economic growth and employment opportunities (Andrews et al., 2022; Apostu et al., 2022; Herman, 2022). In any economy, policies on social, political, technological, and economics should encourage long-term economic growth (Apostu et al., 2022; Herman, 2022). As for the dynamic economic situation, creative technology entrepreneurship becomes a feasible alternative.

Creative technology entrepreneurship provides the 'sustainability' feature to cope with continuous uncertainty (Apostu et al., 2022; Rosário & Dias, 2022). In doing so, creative technology entrepreneurship education plays a significant role in providing university students not only with formal training but also hands-on competency to handle creative technology entrepreneurship.

### **Research Problem**

Firms need to have creativity and innovation as their unique capability to gain competitive advantages. The competitive advantages cannot be easily duplicated, substituted, or modified to match other firms' competitive advantages. The problem here is what the firms should do to sustain creativity and innovation. Firms have to engage in *ta'awun* (mutual cooperation) with universities through entrepreneurship development centres to obtain the results of creativity and innovation.

Both the government and companies are working closely with universities to use the latter's research and development staff, facilities, and equipment to build the capacity to fulfil market needs. The pressing problem here is how to sustain the long-term basis of *ta'awun* (mutual cooperation) with universities through entrepreneurship development centres for creativity and innovation development.

### Research Objective

The two research problems the study desires to address are (a) how to establish *ta'awun* (mutual cooperation) between firms and universities through the entrepreneurship development centres to obtain productive results of creativity and innovation, and (b) how to sustain long-term *ta'awun* (mutual cooperation) with universities through entrepreneurship development centres for the same objective?

These two research problems have combined to become the objective of the study, i.e., to explore the influence of *ta'awun* (mutual cooperation) among entrepreneurship development centres of universities in sustaining creativity and innovation.

### LITERATURE REVIEW

This section discusses the major constructs of the study, namely *ta'awun* (mutual cooperation), creative technology, technology entrepreneurship, and efforts of technology entrepreneurship education.

#### *Ta'awun* (mutual cooperation)

*Ta'awun* is a religious and spiritual concept in Islamic teachings for people to establish mutual cooperation that benefit the people, both worldly and spiritually. The Divine Commandment is reflected in verse 2 of *Surah al Maidah*. Allah says:

*"O ye who believe! Violate not the sanctity of the symbols of Allah, nor the sacred month, nor of the animals brought for sacrifice, nor the garlands that mark out such animals, nor the people resorting to the sacred house, seeking of the bounty and good pleasure of their Lord. But when ye are clear of the sacred precincts and pilgrim garb, ye may hunt and let not the hatred of some people in (once) shutting you out of the Sacred Mosque lead you to transgression (and hostility on your part). Help ye one another in righteousness and piety, but help ye not one another in sin and rancour: fear Allah: for Allah is strict in punishment."*

The essence about *ta'awun* is "help ye one another in righteousness and piety" and "but help ye not one another in sin and rancour." The concept of *ta'awun* can be explained as "legal mutual cooperation" or *ta'awun syar'ie* (*al-birr* and *al-taqwa*) and "fragmented mutual cooperation" or *ta'awun hizbi* (*ithm* and *'udwan*). Ibn Kathir (2000) inferred the term "*ta'awun*" as advisory, i.e., to do good (*ma'aruf*) for the benefit of the people and civilisation and avoiding bad (*munkar*). Ibn Kathir (2000) inferred this as *Al-'Amr bil ma'aruf* (promoting good) and *Tanhaw 'an al munkar* (prohibiting evil). *Ta'awun syar'ie* comprises *al-birr* (goodness) and *al-taqwa* (piety) can be

understood as sincere advice or *al-Nushhu*. According to Saihu & Islamy (2019), *Al-Nushhu* is sincere advice to advocate and reinforce goodness in society. Ibn Khaldun (2015) said *ta'awun* is the basis for a good civilisation of human society.

*Ta'awun* (mutual cooperation) provides the power and synergy for people to live in peace, harmony, and unity. The essence of *ta'awun* (mutual cooperation) lies in unity of purpose and solidarity to achieve it (Mhd. Sarif, 2015). *Ta'awun* (mutual cooperation) ties *qalb* (heart) of people (Mhd. Sarif, 2017) to unite people with mutuality of *ukehunnwah* (bonding) (Mhd. Sarif, 2016). One needs *qalb al-salim* (noble heart) to produce a noble work (Mhd. Sarif, 2017), whereas *taqwa* (piety) mobilises noble hearts (Mhd. Sarif, 2020), and *ta'awun* enables sustainability (Mhd. Sarif, 2018).

The civilisation aspect of *ta'awun* (mutual cooperation) advocates organisations to collaborate and cooperate with other organisations. There can be various organisational reasons for the collaboration and cooperation. Most importantly the outcomes should provide beyond mere organisational benefits (Mhd. Sarif et al., 2022; Dwyer, 2022; Khairunisa & Muafi, 2022). One of the benefits of mutual cooperation is to enable synergy and interdependence among organisations to share talents, resources, knowledge, experience, and wisdom in enabling creativity and innovation (Dwyer, 2022; Khairunisa & Muafi, 2022).

## Creative Technology

Creative technology helps the business world cope with dynamic and uncertain current challenges. Changes and transformation occur everywhere in organizations in their endeavour to improve performance and sustainability (Olsson, Galaz & Boonstra, 2014; Kuenkel & Kuenkel, 2019; Sancak, 2023). For example, organizations shift their paradigm from industrial organization to resource-based views when an economy transitions from a production-based economy to a knowledge and innovation-based economy (Taylor, 2003; Olsson et al., 2014; Voulvoulis et al., 2022).

The industrial organization (I/O) view contends that competitive advantage is gained when firms capitalized on the opportunities provided by external factors (Porter, 1980; Kuenkel & Kuenkel, 2019; Sancak, 2023). On the other hand, the resource-based view (RBV) argues that capacity building within firms is strategically appropriate when it could capitalize on the opportunities or create opportunities or vice-versa (Barney, 1991, 1996, 2001; Grant, 1991).

The innovation-based economy requires active and proactive participation of industrial players to exchange knowledge to produce an essential substance that is derivative instead of productive. Derivatives are a kind of property that are generated from ideas, thoughts, and creativity that are useful commercially to others (Macdonald, 2004; Olsson et al., 2014; Sancak, 2023). This is the basis for the production of tangible products to satisfy the needs and wants of the customers (Mhd. Sarif, 2006; Olsson et al., 2014; Sancak, 2023). Since the competitive advantage of the innovation and knowledge-based economy depends on human development potentials, human capital development becomes a vital economic activity (Taylor, 2003; Alavi&Leidner, 2001; Kuenkel & Kuenkel, 2019; Sancak, 2023).

## **Technology Entrepreneurship**

Technology entrepreneurship introduces new things to the market by transforming raw materials and essential resources through concerted efforts or adapting business ventures to the technological areas. Technology entrepreneurship has to be geared towards the market (Gans & Sten, 2003; Hameed & Irfan, 2019; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022).

Technology enterprises maintain the entrepreneurial environment and nurture a creativity and innovation atmosphere (Bahrami & Evans, 2000; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022). Maintaining a proper entrepreneurial environment is very crucial in order to make the enterprises competitive locally and abroad. As enterprises expand, they need to be adaptive to the changes in the market, seeking opportunities and pruning old ideas (Schildt, Zahra & Sillanpää, 2006; Hameed & Irfan, 2019; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022).

## **Entrepreneurship Education**

In entrepreneurship education, organizational learning is important in providing the mindset and minimum business acumen to prepare entrepreneurs for real challenges (Lumpkin & Lichtenstein, 2005; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022). In this regard, entrepreneurs have to be prepared for capacity building in the field (Louis, Blumenthal, Gluck, & Stoto, 1989; Lordkipanidze, Brezet, & Backman, 2005; Hameed & Irfan, 2019; Breznitz & Zhang, 2022). Thus, institutions of higher education that provide entrepreneurship education should not only focus on the theoretical development of entrepreneurs but also prepared to face the challenges in the field (Franklin, Wright, & Lockett, 2001; Rothaermel, Agung, & Jiang, 2007; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022).

According to Kuratko (2005), entrepreneurship education should acknowledge the reality of the economy and the challenges that entrepreneurs would have to face. Hills (1998) argued that the main reason for higher education institutions to be part of entrepreneurship education is their nature in developing the proper mindset, business acumen, and personality of the students. However, the effects of entrepreneurship education particularly creative entrepreneurship should address the economic issues (Chrisman, Hynes & Fraser, 1995; Lockett, Wright, & Franklin, 2003; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022).

## **Efforts of Technology Education**

There are numerous ways government assists the development of technology enterprises, such as science parks, technology parks, research incubators, and so forth. The effects of entrepreneurship include regional economics (Feldman, 2001), technology clustering (Kenney & Von Burg, 1999), and technology venture capital (Florida & Kenney, 1998). Entrepreneurship is unlike other acquired skill training because it requires tangible and intangible skills (Gianiodis & Meek, 2020; Breznitz & Zhang, 2022). This is particularly true for creative technology entrepreneurship. It needs not only institutions and incubation centres, but also passion and persistence of the individuals and the institutions.

Being creative is not only to be different from others (Mednick, 1962). Creative entrepreneurs need the ability to conceptualize (Amabile, 1983), educate (Perkins, 2008), and use the minds (White & Frederiksen, 1998) through the six resources for creativity – intellectual processes, knowledge, intellectual style, personality, motivation, and environmental context (Sternberg & Lubart, 2010). Indeed, entrepreneurs with extensive and valid training are proven to show better performances (Baron & Ensley, 2006). This shows that entrepreneurial traits and acumen are trainable (Baron, 2008; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022). Entrepreneurs need passion (Cardon, Wincent, Singh & Dmoysek, 2009; Gianiodis & Meek, 2020; Breznitz & Zhang, 2022) to discover entrepreneurship, which is part of the process of discovery learning (Corbett, 2005, 2007).

Based on the discussion on the *ta'awun* (mutual cooperation), creative technology, technology entrepreneurship, and efforts of technology entrepreneurship education, this study argues that *ta'awun* is essential to sustain creativity and innovate technology among entrepreneurship development centres of universities. Figure 1 illustrates the research framework

Figure 1: Research Framework

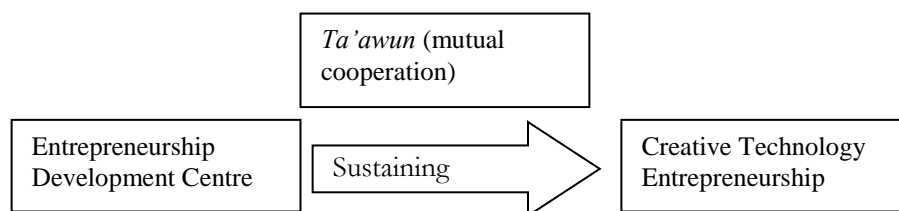


Figure 1 shows that there are a few factors, namely, “Entrepreneurship Development Centre,” “Sustaining,” and “*Ta'awun* (mutual cooperation)” that contribute towards “Creative Technology Entrepreneurship.” The study proposes that the “Entrepreneurship Development Centre” is an institution that sustains the “Creative Technology Entrepreneurship.” The role of the “Entrepreneurship Development Centre” is influenced by *ta'awun* (mutual cooperation). Without the influence of *ta'awun* (mutual cooperation) between firms and universities the entrepreneurship development centres will not be able for to sustain creative technology entrepreneurship. Thus, to verify the proposition, the study aims to explore the influence of *ta'awun* (mutual cooperation) among entrepreneurship development centres of universities in sustaining creativity and innovation for the creative technology entrepreneurship.

## METHODOLOGY

This study used qualitative research method for data collection because it enables the study to explore the description of ways creative technology entrepreneurship education could be sustained via the entrepreneurship development centres deeply, which would be inappropriate if this study were to employ quantitative methods (Wainwright, 1997; Patton, 1990). In other words, qualitative research method provides informants more opportunities to deliberate various issues in depth, especially in the relation to the contexts of creative technology entrepreneurship education (Myers, 2000). In addition, this method allows the study to understand the thoughts of informants which are not very easy to obtain in a structured survey. The researchers also can probe and crosscheck the feedback with other pertinent issues raised during the interview.

However, the results from qualitative research may not be applied to all situations, but they do help generalizations and theories (Ezzy, 2002).

The study used a note-taking approach due to the confidentiality request from all. The study interviewed 13 informants - who comprised three (3) policymakers and 10 educators in the entrepreneurship development of universities in Malaysia. The researchers approached the informants who attended a workshop organized by the Ministry of Higher Education Malaysia. In fact, the researchers were also the participants of the workshop. The researchers did not approach all the participants, rather interviewed the informants on a convenient basis. The researchers approached and secured informed consent of the participants during the break and after the workshop. This study used a qualitative research method to accomplish the objective of the study which is to explore the influence of *ta'awun* (mutual cooperation) among entrepreneurship development centres of universities in sustaining creativity and innovation for the creative technology entrepreneurship. To answer the research objective and research questions, the study interviewed the informants with this question: "In what ways *ta'awun* (mutual cooperation) among entrepreneurship development centre contribute to sustaining technology entrepreneurship in Malaysia?"

## FINDINGS AND DISCUSSION

This part presents the feedback of the informants based on the question "In what ways *ta'awun* (mutual cooperation) among entrepreneurship development centre contribute to sustaining technology entrepreneurship in Malaysia?"

There are two categories of informants, namely, policymakers and educators of technology entrepreneurship from selected public universities in Malaysia.

### Policy Makers

The first group of informants consists of three (3) policymakers. Policy Maker 1 argued that *ta'awun* (mutual cooperation) among the key stakeholders in creative technology entrepreneurship plays an important role in the digital innovation and economic sustainability. According to Policy Maker 1, this project is part of the digital technology policy, thus in line with the Fourth Industrial Revolution. Policy Maker 1 said:

*"There are technologies related to Industry 4.0 like automation, robotics, and the Internet of Things (IoT) to increase efficiency and reduce costs in their operations. The presence of big data is advantageous because entrepreneurs can use data and analytics to better understand their customers and offer more personalized products and services. Entrepreneurs can utilize technology and digital tools. For example, the digital platforms and tools can reach new customers, gather insights and automate their business processes. If they could gather data, then they can use the data to gain some insights about their customers and potential customers in the market, so that they can make better-informed decisions. They cannot rely on one source of technology. Entrepreneurs should keep trying new business models such as subscription-based, pay-per-use, or shared economy models. There is no harm trying."*

*Ta'awun* (mutual cooperation) enables extensive collaboration for digital technology development. According to Policy Maker 2, everyone should aim to be part of technology entrepreneurship because everyone uses technology in all aspects of life. Naturally, Policy Maker

2 contended that necessities breed talented and creative people to offer technology that can fulfil their needs and wants. Policy Maker 2 pointed out:

*"Entrepreneurs should not work in silo. They cannot work in silo. In reality, entrepreneurs often operate with limited resources. When people work in silos, they would miss opportunities to collaborate and share resources with others. It is logical for people to work in silos, they would not have access to diverse perspectives and ideas, which can limit their ability to innovate and make informed decisions. They should collaborate and cooperate or leverage their expertise and resources with other firms in developing new products and services."*

Policy Maker 3 argued that the education sector plays a very important role to mould human talents to be creative and innovative, ethically and responsibly. Policy Maker 3 said:

*"Education is important so that professional talents are exposed to technology and innovation in the context of other disciplines, such as law, sociology, and philosophy can help them understand the broader implications of their work. Networking in the education setting fosters students to work in teams, and collaborate with people from diverse backgrounds, which can help them understand different perspectives and develop communication skills. They can continue learning throughout their careers. This can help them stay current with the latest developments in technology and innovation, and to adapt to changing circumstances."*

The feedback of three informants among the policymakers argued that mutual cooperation allows collaboration, cooperation, and education with broader perspectives, insights, and implications for better understanding and better-informed decisions (Gianiodis & Meek, 2020; Herman, 2022; Morseletto, 2023; Sancak, 2023). Table 1 summarises the feedback of the three informants among the policymakers with keywords and themes.

Table 1: Summary of Feedback from Three Policy Makers

Informants	Feedback	Keywords	Themes
Policy Maker 1	<i>"There are technologies related to Industry 4.0 like automation, robotics, and the Internet of Things (IoT) to increase efficiency and reduce costs in their operations. The presence of big data is advantageous because entrepreneurs can use data and analytics to better understand their customers and offer more personalized products and services. Entrepreneurs can utilize technology and digital tools. For example, the digital platforms and tools can reach new customers, gather insights and automate their business processes. If they could gather data, then they can use the data to gain some insights about their customers and potential customers in the market, so that they can make better-informed decisions. They cannot rely on one source of technology. Entrepreneurs should keep trying new business models such as subscription-based, pay-per-use, or shared economy models. There is no harm trying."</i>	<p><i>"increase efficiency"</i></p> <p><i>"better understand"</i></p> <p><i>"gather insights"</i></p> <p><i>"better-informed decisions"</i></p>	Mutual cooperation provides efficiency and a better understanding for better-informed decisions.
Policy	<i>"Entrepreneurs should not work in silo. They</i>		



<p>Maker 2</p>	<p><i>cannot work in silo. In reality, entrepreneurs often operate with limited resources. When people work in silos, they would miss opportunities to collaborate and share resources with others. It is logical for people to work in silos, they would not have access to diverse perspectives and ideas, which can limit their ability to innovate and make informed decisions. They should collaborate and cooperate or leverage their expertise and resources with other firms in developing new products and services."</i></p>	<p><i>"limited resources"</i>  <i>"collaborate and share resources"</i>  <i>"collaborate and cooperate"</i></p>	<p>Mutual cooperation provides collaboration and cooperation to share limited resources</p>
<p>Policy Maker 3</p>	<p><i>"Education is important so that professional talents are exposed to technology and innovation in the context of other disciplines, such as law, sociology, and philosophy can help them understand the broader implications of their work. Networking in the education setting fosters students to work in teams, and collaborate with people from diverse backgrounds, which can help them understand different perspectives and develop communication skills. They can continue learning throughout their careers. This can help them stay current with the latest developments in technology and innovation, and to adapt to changing circumstances."</i></p>	<p><i>"broader implications"</i>  <i>"different perspectives"</i></p>	<p>Mutual cooperation broadens people's perspectives</p>

### Entrepreneurship Educators

The second group of informants comprised ten (10) entrepreneurship lecturers from selected universities in two developed states in Malaysia, i.e., Kuala Lumpur and Selangor. All informants argued that entrepreneurship education is important to provide business acumen in business, finance, and marketing in the real business setting.

According to Educator 1, there is a need for mutual cooperation among educators and their institutions to learn about new technology and to adapt to it. Educator 1 said:

*"Mutual cooperation in the education of technology entrepreneurship is necessary because the field of entrepreneurship is constantly evolving. As you know there are new technologies, business models, and market trends that are constantly emerging, and educators need to stay up-to-date with the latest developments to provide relevant and accurate information to their students."*

There is a need for mutual cooperation among educators and their institutions to address the growing demand for technology entrepreneurship education. Educator 2 argued that in meeting the growing demand for technology, entrepreneurship education to incorporate it. Educator 2 pointed out:

*"There is no shortcut for technology entrepreneurship education. I reckon the demand for technology education is growing. With the growing importance of entrepreneurship in the global economy, there is a growing demand for entrepreneurship education. Educators need to be equipped with the latest knowledge and skills to meet this demand."*

Educators and students should foster mutual cooperation in technology entrepreneurship education. Educator 3 contended that students of technology entrepreneurship should adapt to new method of teaching and learning. Educator 3 mentioned:

*"Educators and students of technology entrepreneurship education are changing. As we can observe the demography of students interested in entrepreneurship is changing, and educators need to adapt their teaching methods and curriculum to meet the needs of a diverse student population."*

Echoing Educator 3's argument, Educator 4 emphasized the need for mutual cooperation to enhance approaches for teaching and learning in technology entrepreneurship. Educator 4 said:

*"Educators in the new age need a new way of educating or using suitable pedagogical approaches. New pedagogical approaches and technologies are being developed to enhance teaching and learning in entrepreneurship education. Educators need to be aware of these developments and incorporate them into their teaching practices."*

Educators should be agile and flexible in the business of technology entrepreneurship education. The need for mutual cooperation is more demanding to acquire, transfer and share knowledge in technology entrepreneurship. Educator 5 said:

*"Education is not one-off kind of things. It is evolving from time to time. Therefore, educators must continue to learn, re-learn and unlearn. In other words, they must go through professional development. Educators must stay current with the latest developments in the field and enhance their professional development, which in turn will improve the quality of the education they provide to their students."*

Educators must make themselves relevant. The need for mutual cooperation is higher. Educator 6 said:

*"Educators have to enhance themselves so that they can stay relevant. Relevant in all walks of life. Education is not just talking without action. The head, mind, and body must be educated too. By continuing to train and develop their skills, educators are better able to stay relevant."*

There is an increasing importance for mutual cooperation among educators. Educator 7 said:

*"Cooperation among educators means they share knowledge and other educational resources. The sharing can be done through co-teaching, co-supervision, co-researching, and so on. The sharing among students is also necessary. This is important to allow students from different institutions to collaborate and learn from one another, which can enhance the student experience."*

The nature of mutual cooperation among educators in technology entrepreneurship is dynamic. Educator 8 said:

*"Cooperation among educators from different backgrounds and institutions can bring different perspectives and experiences to the table, and working together can lead to a more holistic and diverse understanding of entrepreneurship education."*

Mutual cooperation among educators becomes more essential in the fast-changing situation. Educator 9 pointed out:

*“Cooperation allows educators to keep up with the fast-paced changes. The reality of entrepreneurship studies is a fast-paced field, and by cooperating and collaborating among educators, they can stay abreast of the latest trends and changes in the field and make sure their teaching stays relevant.”*

The mutual cooperation among educators of different backgrounds is necessary. Educator 10 said:

*“By cooperating with other educators, they can share best practices and ideas for teaching entrepreneurship, which can help them improve their teaching methods and curriculum. Not to forget, by collaborating with other educators, they can stay informed about the latest trends and developments in the field of entrepreneurship, and ensure that their teaching remains relevant and up-to-date. The cooperation among educators allows them to build professional networks and connect with others in their field, which can provide opportunities for professional development and collaboration.”*

The feedback from the 10 educators in technology entrepreneurship emphasizes that mutual cooperation (*ta’awun*) is essential in the age of technological advancement; it provides a sustainable competitive advantage to entrepreneurship ventures to explore more innovation in the technological areas (Ganiodis & Meek, 2020; Herman, 2022; Morseletto, 2023; Sancak, 2023). These lecturers contended that entrepreneurship courses and entrepreneurship development centres are the right entities to train university students to learn about the entrepreneurship profession.

This reality needs to be addressed through the structure of the entrepreneurship education program in universities. As argued by Kuratko (2005), if entrepreneurship education discarded the reality of the economy and the challenges that entrepreneurs would have to face, the whole programme might not be effective in addressing favourable economic development (Ganiodis & Meek, 2020; Herman, 2022; Morseletto, 2023; Sancak, 2023). Likewise, Hills (1998) argues that discounting the reality in education would render the passion of universities to develop an entrepreneurial mindset, business acumen and personality ineffective (Herman, 2022; Morseletto, 2023; Sancak, 2023). However, the crucial and practical aspects demand the use of more rigorous approaches. This concern calls for a serious commitment from the top management of public universities. If university educators are unable to prepare, they might not be ready to face the challenges in the field (Louis, Blumenthal, Gluck, & Stoto, 1989; Lordkipanidze, Brezet, & Backman, 2005; Herman, 2022; Morseletto, 2023; Sancak, 2023).

The feedback from the informants emphasised that *ta’awun* (mutual cooperation) driven by spirituality essence could provide insights to policy makers, firms and universities to address the operation of businesses in a dynamic environment that able to react to the changes that occur at a very fast pace (Aini et al., 2023; Kamal et al., 2023; Singh & Maheswaran, 2023; Zhang et al., 2023). The *ta’awun* (mutual cooperation) could develop a unique capability to create, maintain and sustain competitive advantage to the firms, which could not be easily duplicated, substituted, and modified to match other firms' competitive advantage. The informants argued that mutual cooperation with spirituality essence is capable of building unique capacity to compete when firms established mutual cooperation-based networking with universities that could provide the process of building the capacity to be unique. In the meantime, policymakers should use entrepreneurship centres as a catalyst to sustain economic growth and employment opportunities

Creative technology entrepreneurship provides the ‘sustainability’ feature to cope with continuous uncertainty.

### **Implications to theory**

There are several implications on the research of mutual cooperation between firms and universities to resource-based theory. Firstly, it is the access to resources. Mutual cooperation between firms and universities can provide companies with access to resources that they may not have otherwise had, such as faculty expertise or specialized equipment. This type of collaboration also allows universities to take advantage of the latest technologies developed by industry in order to stay competitive. Secondly, mutual cooperation improves knowledge creation. Through mutual cooperation, firms and universities can come together to create knowledge which can lead to innovation and new products or services that benefit both parties. This type of collaboration helps spur economic growth by creating jobs and boosting productivity in the economy as a whole. Thirdly, it enhances organizational capabilities. Mutual collaborations help organizations (firms and universities) become more efficient by allowing them to share resources, facilities, and expertise which can benefit both parties. The mutual cooperation can help reduce costs for companies as well as increase productivity, allowing them to stay competitive in the market. Finally, it sustains competitive advantage. The resource-based theory suggests that firms and universities that cooperate with each other are more likely to gain a competitive advantage over their rivals due to the access they have to resources and expertise that otherwise may not be available. Such collaborations also help create an environment where innovation is encouraged which can lead to new products or services being developed more quickly than competitors.

### **Implications to policy**

There are many implications to the government’s policy. Firstly, it increases national innovation. The mutual cooperation between firms and universities can help drive innovation in the economy by creating an environment where new ideas and technologies are developed more quickly. This can boost productivity, create jobs, and lead to economic growth. Secondly, it improves education. The mutual collaboration also allows students to gain valuable experience working on real-world projects with companies while they are still in the faculty, which prepares them better for their future careers. It also provides faculty members with opportunities to stay up-to-date with industry trends and develop innovative teaching methods that incorporate the latest technology into their courses. Thirdly, it can enhance greater regional development. When firms collaborate with universities located in a certain region, it can help spur development in that area by providing access to resources and expertise that can boost the local economy. This, in turn, leads to more job opportunities and a higher quality of life for residents. Finally, it can increase investment. Government policies that encourage cooperation between firms and universities may also attract more investment from private companies looking to benefit from such collaborations. This could lead to greater research funding and new infrastructure projects, which would further stimulate economic growth.

### **Implications to practice**

There are several implications to practice. Firstly, mutual cooperation improves collaboration. Mutual cooperation between firms and universities can help both parties come together more effectively to create innovative products, services, and technologies. This type of collaboration also allows companies to access the latest research being conducted at universities, which can give them a competitive edge in the marketplace. Secondly, it can have better talent acquisition. Companies that partner with universities are often able to recruit top talents from these institutions as well as take advantage of internships or job fairs hosted on campus. This helps them find employees who have been trained at the university and are familiar with cutting-edge research and technology advancements in their field. Thirdly, it can enhance learning opportunities. Mutual cooperation between firms and universities provides students with opportunities to gain hands-on experience working on real-world projects with companies while they are still in school. This helps them develop the skills and knowledge necessary to succeed in their future careers. Finally, it will have more efficient use of resources. The mutual collaborations also allow firms and universities to make more efficient use of resources by sharing equipment, facilities, and expertise that can benefit both parties. This type of cooperation can help reduce costs for both organizations as well as increase productivity.

### **Limitations of the research**

There are a few limitations in conducting personal interviews with policy makers and educators. Firstly, it is about time and resource constraints. Conducting interviews with policy makers and educators requires a significant amount of time, resources, and effort. This can limit the number of people who can be interviewed as well as the depth and breadth of questions that can be asked. Secondly, it is the accessibility. It is very much based on their level of influence or position within an organization. Some policy makers may not be easily accessible for interviews due to security protocols or other restrictions imposed by their job titles or organizations. Thirdly, it is about bias. This is due to the personal contact of the researchers. In addition, personal interviews rely heavily on subjective information from individual interviewees. There is always potential for bias in the responses received which could skew results or lead to misinterpretations of data collected during an interview session. Although the researchers used triangulation, but scepticism still exists. Fourthly, it is about confidentiality. Policy makers may be hesitant to share confidential or sensitive information during an interview, which could limit the amount of data that can be collected. Finally, it is about the interpretation. The personal interviews rely heavily on human interpretation and translation of responses, which can lead to misinterpretations or inaccuracies in the data being collected.

### **Future research**

Researchers should consider using the case study method when conducting research on technology entrepreneurship. Case studies can be used to analyze specific aspects of a company or industry and provide detailed insights into how different elements interact and influence each other. This type of research method can help researchers gain a better understanding of the complex dynamics at play in the technology entrepreneurship space, as well as identify potential opportunities for growth or improvement. Additionally, it allows researchers to look at multiple

companies or industries simultaneously in order to develop more comprehensive conclusions about their findings.

## CONCLUSION

The research has postulated two research problems (from ontological and epistemological analyses), namely (a) the influence of *ta'awun* (mutual cooperation) between firms and universities through the entrepreneurship development centres to obtain productive results of creativity and innovation in the creative technology entrepreneurship, and (b) sustaining long-term *ta'awun* (mutual cooperation) with universities through entrepreneurship development centres for to sustain creativity and innovation in the creative technology entrepreneurship. In developing creative technology entrepreneurship policy makers, firms and universities think that firms and universities should have mutual cooperation facilitated by the governments to address the dynamic business environment by developing distinctive competency in sustaining competitive advantage. However, the nature of the mutual cooperation has not been understood and operationalized as *ta'awun* (mutual cooperation) with spiritual essence. Thus, the study has explored the influence of *ta'awun* (mutual cooperation) among entrepreneurship development centres in sustaining creativity and innovation.

The feedback from 13 informants argue that *ta'awun* (mutual cooperation) among entrepreneurship development centres of universities is needed to sustain creative technology entrepreneurship. The informants emphasized that mutual cooperation (*ta'awun*) is essential to sustain creativity and innovation in the age of technological advancement. Education in technology entrepreneurship enables entrepreneurs to be competent with the latest technology. Thus, technology entrepreneurs with the spirit of *ta'awun* (mutual cooperation) can create and sustain creativity and innovation for the success of entrepreneurship ventures.

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