

Entrepreneurship Education Strategy in Higher Education in ASEAN: Competitive Intelligence and Readiness to Change

Teddy Trilaksono^{a*}

Leonis Marchalina^b

Sasmoko^c

Yasinta Indrianti^d

Nurul Aqilah Binti Muhammad Yusak^e

^{a,b}Department of Business, Universitas Prasetiya Mulya, Jakarta, Indonesia; ^cDepartment of Primary Teacher Education, Universitas Bina Nusantara, Jakarta, Indonesia; ^dDepartment of Entrepreneurship, Universitas Agung Podomoro, Jakarta, Indonesia; ^eDepartment of Business, Management Science University, Selangor, Malaysia.

Abstract

This study presents empirical evidence on the condition of entrepreneurship education from universities in ASEAN countries facing the ASEAN Economic Community (AEC). Survey data was obtained from 174 lecturers in five ASEAN countries and was analysed using a normality test with PP-plot and a linearity test. The urge of this study is to integrate the managerial and marketing skills in the entrepreneurship education curriculum in higher education in the face of a rapidly changing global business condition. The government must ensure that higher education institution (HEI) in the country creates a business ecosystem in the internal campus environment or encourages students to seek a business ecosystem outside the HEI and creates mentors from lecturers to accompany these students. Theoretically, this study has expanded the theory of entrepreneurship education, competitive intelligence, and readiness to change in the context of ASEAN institutions. In practice, this study helps in preparing an entrepreneurship education agenda for both leaders and educators who influence entrepreneurship education to become more effective, so that their students can apply their entrepreneurship skills after they graduate.

Keywords

Entrepreneurship Education, Higher Education, Competitive Intelligence, Readiness to Change, ASEAN Economic Community (AEC)

Received: 5 January 2022; Accepted: 3 February 2022; Published Online: 30 April 2022

DOI: 10.21776/ub.apmba.2022.010.03.1

Introduction

The establishment of Association of Southeast Asian Nations (ASEAN) Economic Community (AEC) in 2003, was an effort to deepen economic integration,

which would create integrated markets and enable free movement of goods, services, investment, skilled labor, and capital between ASEAN countries (Dosch, 2013; Dosch, 2017). The AEC is widely supported

*Corresponding author Email: teddy.trilaksono@pmbs.ac.id
Asia-Pacific Management and Business Application, 10, 3 (2022): 239-260

P-ISSN : 2252-8997
E-ISSN: 2615-2010

within ASEAN because economic integration can have a positive impact on the community and member countries (Benny, Yean, & Ramli, 2015). However, Jones (2015) found a gap between ASEAN's rhetorical commitment to regional economic integration and the progress actually achieved, and ascribed it to socio-political factors related to the distribution of economic power and human resources.

Human resources are the main factors that determine whether the goals of AEC will be reached, and higher education has a significant role improving member countries' competitiveness (Tullao & Cabuay, 2015). Countries in ASEAN have been trying to analyze how prepared their universities are to produce graduates who will improve their competitiveness. Unfortunately, the importance of entrepreneurship education did not reflect on the students who graduated after their study. Most of students have been graduated without applying their entrepreneurship skills. Studies have been investigated to measure the relationship human resources and entrepreneurship education (Aboobaker & D., 2020; Agarwal et al., 2020; Ulvenblad, Berggren, & Winborg, 2013) yet, none discussed more deeply on the effectiveness of entrepreneurship education in order to ensure the students can truly apply their entrepreneurship skills that will help them to contribute on the country's economy, specifically on AEC. In Thailand, it was found that accounting students had a high level of competence in ethical knowledge, abilities, and relationships, while their analytical competencies were at a moderate level (Suttipun, 2014). Thailand and the Philippines are very similar in these parameters; in both countries, literacy rates and student participation have increased, but disparities between graduate skills and the demands of the private sector have been a continuing problem (Yabushita, 2016).

The results of research in Thailand have implications for universities required to

train accounting students to compete with members of the profession from other ASEAN countries (Khampirat, et al., 2020; Suttipun, 2014). Decision makers and policy makers in higher education institutions in ASEAN countries should have investigated various aspects of their processes, activities, projects, and plans—including the applied curriculum—that could internationalize their education system (Somjai & Smith, 2014; Thanalerdsopit et al., 2014). Various studies have given pointers as to how innovations and developments in teaching, curriculum, facilities, student services, human resources, and other aspects of the provision of quality education can be realized (Dotong & Laguador, 2015).

On the other hand, the transformation of higher education development in ASEAN countries has appeared in several research involve all stakeholders such as receivers (students), enablers (lecturers), and policymakers (Aboobaker & KA, 2021; Alloui & Benmoussa, 2020; Jamaludin, McKAY, & Ledger, 2020; Mukaram et al., 2021; Paliwal & Singh, 2021).

Entrepreneurship is recognized as a driving force for economies, and there is therefore growing interest in developing educational programs that enhance entrepreneurial skills (Gorman, Hanlon, & King, 1997; Katz, 2003). Currently, entrepreneurship education continues to grow in various parts of the world, and this rapid growth is a tangible manifestation of educational efforts to meet the demands of industry and country's economies, for which entrepreneurship is essential (Kuratko, 2005). Entrepreneurship education can influence human resources on a global scale, and is therefore increasingly important in enabling students to solve conceptual and real-life problems as well as to survive and thrive in a competitive world. (Martin, McNally, & Kay, 2013; Piperopoulos & Dimov, 2015). Given education's central role in producing superior and competitive resources, it is essential that entrepreneurship education

enables graduates to be prepared for, and capable of, competing in the AEC (Imaroh, 2016).

Competitive intelligence is considered an environmental scanning system that integrates knowledge in the world of work (Bergeron & Hiller, 2005). Competitive intelligence implies being able to maintain a competitive advantage, which also has an impact on strategic advantage. Therefore, it becomes a key factor in decision making (Shih, Liu, & Hsu, 2010; Xu, Liao, Li, & Song, 2011). Competitive advantage is characterized by one's ability to deal with change, or one's readiness to change (Abdel-Ghany, 2014). Readiness to change is a multidimensional faculty that indicates that a person is able to adjust to change, remain effective during change, and remain committed to goals despite change, so that change has a positive impact on his or her personal growth (Holt, Armenakis, Feild, & Harris, 2007).

Based on the needs outlined above, it is necessary to find a form of entrepreneurship education that fits into the ASEAN countries' context. In this study, the research question begins to distinguish the relationship of variable entrepreneurship education and readiness to change. Both are important to develop the intelligence necessary for competing in the AEC.

Literature Review

ASEAN Economic Community (AEC)

ASEAN is a geo-political and economic organization of countries in the Southeast Asia, which was established on August 8, 1967 and currently has ten members namely: Indonesia, Thailand, Malaysia, Singapore, the Philippines, Brunei Darussalam, Vietnam, Lao PDR, Myanmar, and Cambodia (Chia, 2013). At the 1997 ASEAN Summit in Kuala Lumpur, ASEAN leaders decided to form the ASEAN Economic Community to achieve the ASEAN 2020 vision, namely to become a prosperous, stable, and competitive region of equitable economic development that

would reduce inequality and poverty (ASEAN, 2021).

The AEC is an ASEAN economic integration project whereby ASEAN leaders agreed to form a single market in the ASEAN region by the end of 2015. With increased competitiveness, ASEAN is expected to rival China and India in attracting foreign investment (Capannelli & Tan, 2012). At the same time, the existence of the AEC will be help to close the development gap and accelerate integration with Lao PDR, Myanmar, Vietnam, and Cambodia through the Initiative for ASEAN integration and other regional initiatives (Yue & Das, 2015).

The existence of the AEC makes competition even stiffer, not only opening up trade flows of goods or services, but also professional labor markets, such as those for doctors, lawyers, and accountants. Recent research from the World Labor Organization (ILO), indicates that the opening of the AEC labor market will bring great benefits (Dee et al., 2011). After two years of the AEC, the challenges faced by almost all ASEAN countries are low level of education of the workforce, lack of public knowledge about AEC, and varying levels of regional readiness (SINDO news).

Entrepreneurship Education

A previous study found a correlation between ASEAN Human Development Index (HDI) and GDP in the case of a 15% increase in GDP. Education expenditure and the level of expenditure per year led to an increase in the HDI of 0.105%, an increase of 0.028%, and a decrease of 0.027% per year, and a 1% increase in health improvement increased HDI significantly by 0.0124% in ASEAN during 1990-2016 (Bhowmik, 2019). This shows that human resources in ASEAN are relatively unproductive, while the AEC competition requires high and productive human resources. Formal education that is connected with the business world, and entrepreneurial knowledge are needed to improve the productivity of human

resources in ASEAN. Through entrepreneurship, the workforce will be able to produce the goods and services demanded by the market, and thus create a climate of independence.

The Commission of the European Communities (2003) states that entrepreneurial activity will increase productivity, which will increase competition. In Indonesia, entrepreneurial activities, as measured by the Total early-stage Entrepreneurial Activity (TEA) index are at an early stage, estimated to be 14.2% (weighted). Within three and a half years, entrepreneurial activities developed into established businesses at the rate of 11.9%. This causes Indonesia to have a high TEA among ASEAN countries compared to the Philippines, Thailand, and Vietnam. This research found that women play an important role in the early stages of entrepreneurial development in Indonesia, Malaysia, the Philippines, and Vietnam (Pawitan, Widyarini, & Nawangpalupi, 2018).

In parallel with the growth of entrepreneurship education, student interest in the world of entrepreneurship as a career choice has begun to increase throughout the world (Kolvereid, 1996) and have a positive impact on students, whether they are entrepreneurs as a career, or whether they simply use entrepreneurship education to increase their entrepreneurial skills (Kolvereid & Moen, 1997; Tkachev & Kolvereid, 1999).

Competitive Intelligence

Consulting companies in the field of business and management write about the concept of competitive intelligence very frequently, which indicates the need for and importance of a high level of competitive intelligence. Competitive intelligence is designed to provide early warning and help predict the movements of competitors, customers, and government (Shih et al., 2010). Competitive intelligence also confers strategic advantage, which means the ability to understand and learn about

what is happening in the world outside of a business, so that it can be as competitive as possible, and able to anticipate and face challenges. Competitive advantage is also characterized by one's ability to deal with change: one's "readiness to change" (Abdel-Ghany, 2014). In order to bring about the AEC, all ASEAN countries need to strengthen their skills and integrate their economies, through competitive intelligence (Aring, 2015).

Readiness to Change

Readiness to change can be assessed and studied at the level of individuals, groups, units, departments, or organizations (Kozlowski & Klein, 2000). It is a multidimensional construct that indicates how a person is able to adjust to change, remains effective in change, and remains committed to goals despite changes, so that change has a positive impact on his or her personal growth (Holt et al., 2007). The readiness to change stage model provides a framework for understanding behavioral change. Readiness to change in the context of a rapidly changing global business environment, involving more complex processes, automation, greater competitiveness, and emerging technologies, goods, products, and services, has become very important in this new era (Ustundag & Cevikcan, 2018). ASEAN countries have shown their readiness in facing the demand by developing and transforming their higher educations. Malaysia modified their learning and teaching curriculum that shown in the book *Framing Malaysia Higher Education Higher Education 4.0: Future-Proof –Talents in 2018* (Adams, Tan, & Sumintono, 2020; Jamaludin et al., 2020). In Thailand context, for instance, the government developed the Quality Assurance (QA) model to support the quality of education in HEIs (Khampirat, et al., 2020). ASEAN countries have shown readiness to face the demand by developing and transforming their higher education. For example, Malaysia modified its learning and teaching curriculum as shown in the book *Framing Malaysia Higher*

Education 4.0: Future-Proof –Talents in 2018 (Adams, Tan, & Sumintono, 2020; Jamaludin et al., 2020). For instance, in the Thailand context, the government developed the Quality Assurance (QA) model to support the quality of education in HEIs (Khampirat et al., 2020).

In each case there must be an explicit test of whether a person, work group, and organizational members consider their readiness to change in terms of affective change, cognitive change, and a global evaluation of their readiness for change (Rafferty, Jimmieson, & Armenakis, 2012). From the elaboration of variables related to this study we can concluded the research question in details. Therefore, in this study, five research questions (RQ) were formulated:

RQ1: What are the trends in entrepreneurship education in ASEAN as a whole and in every ASEAN member country, given that entrepreneurship education needs to be developed?

RQ2: How is the competitive intelligence of ASEAN universities advancing, in relation to their role as developers of entrepreneurial spirit?

RQ3: How are ASEAN universities developing in relation to their role as higher education institutions responsible for preparing workers?

RQ4: Which variable or indicator is the most successful in creating entrepreneurship education in ASEAN higher education?

RQ5: Are there any observable differences in entrepreneurship education development in ASEAN higher education when viewed from different backgrounds?

Methods

The methodology used in this study is a survey (Yvonne Feilzer, 2010). All research variables use questionnaires with a Likert scale of data from 1 to 4. Data is gathered manually or online (via online questionnaire) and then random cross-checks are carried out in the field. Our

sampling technique uses convenience random sampling (multistage sampling) clusters. This non-probability sampling technique involves samples taken from a part of the population that is considered close, accessible to researchers and representative of the population from ASEAN countries. Therefore, the research locations are in universities in five ASEAN countries, namely Singapore, Indonesia, Malaysia, Myanmar, and Cambodia. Singapore represents developed countries in ASEAN in the first layer, then Indonesia and Malaysia represent developing countries with high economic growth in the second layer, and the third layer is Myanmar and Cambodia as developing countries with medium growth. The research population is universities in ASEAN countries. The unit of analysis is higher education institutions, and the data sources are obtained from lecturers through survey.

Construct validity of three variables was formulated as an orthogonal iteration with r-criteria of 0.176 because there were only 174 respondents. The valid instruments of Entrepreneurship Education variable in ASEAN universities of 17 items resulted in a Reliability Index of 0.978. Meanwhile, both Competitive Intelligence (CI) and Readiness to Change (RTC) produced a Reliability Index of 0.967 that contained 39 items, wherein CI with 10 items was valued at 0.874 and RTC with 12 items was valued at 0.864. The normality of empirical data was tested with the Probability-probability (PP)-plot, and the linearity of line relations between variables was tested by observing deviation from linearity (Dimitrov, 2010). Hypotheses 1, 2, and 3 were tested with a confidence interval of 5% significance level; hypothesis 4 test with regression analysis, a partial correlation test, and classification regression tree through depth 2, parent 2 and child analysis 1, while hypothesis 5 uses student t and ANOVA. All statistical analyses were carried out using the IBM SPSS Statistics 23/24 application.

The preliminary tests were carried out before the hypothesis testing. Firstly, the normality test indicated that all variables were distributed normally, with no outliers. Likewise, when viewed from the Detrended Normal P-P Plot, it is proven that the data distribution does not describe a sine or cosine curve (see Appendix 1). Therefore, it can be concluded that all data variables have a normal distribution. Second test, the linearity test also indicates the correlation between Readiness to Change and Competitive Intelligence with Entrepreneurship Education (see Appendix 2). The correlation between the variable Readiness to Change (VAR_Readi) with the variable Entrepreneurship Education (EduASEAN_1) resulted in a value for F of 2,803: very significant, with $\alpha < 0.01$, indicating that the correlation was non-linear. For this reason, the estimation curve analysis was conducted towards 11 lines with a raw data test, and the resulting F-linear test was valued at 93,893, which is also very significant, with $\alpha < 0.01$. This means that the correlation between RTC (VAR_Readi) with EE in Higher Education in ASEAN (EduASEAN_1) was linear. In addition, the correlation between CI (VAR_Comptv) with EE in Higher

Education in ASEAN (EduASEAN_1) resulted in an F value of 0.971, which is non-significant at the 0.05 level, meaning that the correlation was linear.

Results and Discussion

RQ1: What are The Trends in The Conditions of Entrepreneurship Education in ASEAN as A Whole and in Every ASEAN Member Country, Given That Entrepreneurship Education Needs to Be Developed?

There are five responses that will be discussed: (1) very distant from an ASEAN tertiary education-based entrepreneurship education, (2) quite distant from an ASEAN tertiary education based entrepreneurship education, (3) the direction of entrepreneurship education in tertiary institutions is not clear, (4) the direction of entrepreneurship education in tertiary institutions is clear, but not yet focused on transforming students into entrepreneurs, and (5) the direction of entrepreneurship education in tertiary institutions is very clear, and has focused on transforming students into entrepreneurs. The results are shown in Table 1.

Table 1. Trend of Entrepreneurship Education Conditions in ASEAN Universities

Items	Range (R)	Interval (i)	Empiric Score		95% Confidence Interval (μ) for Mean	
			Max	Min	Lower Bound	Upper Bound
Entrepreneurship education condition	35	8	85	50	70.1482	73.9325
Technical Skills condition	10	3	20	10	16.1275	17.1305
Managerial Skills condition	12	3	30	18	25.0071	26.3155
Entrepreneurship Skills condition	9	2	15	6	12.4046	13.1438
Personal Maturity Skills condition	9	2	15	6	12.4046	13.1438
Entrepreneurship education condition (RTC and CI)	83	17	194	111	157.6683	164.6382

The table above shows that: 1) the direction of entrepreneurship education in ASEAN tertiary institutions is thought to be clear, but not yet focused on transforming students into entrepreneurs significantly at $\alpha < 0.05$; 2) the direction of entrepreneurship education in ASEAN tertiary institutions is thought to have significantly higher technical skills at $\alpha < 0.05$; 3) the direction of entrepreneurship education at ASEAN tertiary institutions is thought to be significantly higher at $\alpha < 0.05$; 4) the direction of entrepreneurship education in ASEAN tertiary institutions is thought to have a high level of entrepreneurship skills at $\alpha < 0.05$; 5) the direction of entrepreneurship education in ASEAN tertiary institutions is thought to have a good condition of personal maturity skills at $\alpha < 0.05$ and; 6) the direction of entrepreneurship education in ASEAN tertiary institutions is thought to be clear, but not yet focused on transforming students into entrepreneurs significantly if there are aspects of Readiness to Change and Competitive Intelligence at $\alpha < 0.05$.

Based on the results, most lecturers have clearly identified the importance of

entrepreneurship education development in ASEAN. The trends of entrepreneurship education in ASEAN are thought to be heading in the right direction, being focused on technical skills, entrepreneurship skills, and students' personal maturity skills, but not yet focused on transforming students into entrepreneurs and still failing to encourage students to execute business development. The results of this study are in line with a study that found that a person can adapt to changes, remains effective during changes, and remains committed to goals despite changes, so that change has a positive impact on personal growth (Holt et al., 2007).

RQ2: How is The Competitive Intelligence of ASEAN Universities Advancing, in Relation to Their Role as Developers of Entrepreneurial Spirit?

This question allows five responses regarding ASEAN Higher Education Competitive Intelligence conditions related to their role in preparing labor, namely: (1) very uncompetitive, (2) uncompetitive, (3) competitive only sometimes, (4) competitive, and (5) very competitive. The results are shown in Table 2.

Table 2. Trend of Competitive Intelligence Conditions in ASEAN Universities as Developers of Entrepreneurial Spirit

Items	Range (R)	Interval (i)	Empiric Score		95% Confidence Interval (μ) for Mean	
			Max	Min	Lower Bound	Upper Bound
Competitive Intelligence	27	6	49	22	37.7933	39.7551
Marketplace Opportunities	9	2	15	6	11.2888	11.8885
Competitor Threat	6	2	10	4	7.6162	8.0612
Key Vulnerability and Assumption	3	0,7	5	2	3.5212	3.8175
Core Assumption	8	2	10	2	7.3411	7.9976

From table 2 it can be concluded that: 1) ASEAN tertiary institutions are thought to have competitive conditions significantly at $\alpha < 0.05$; 2) ASEAN tertiary institutions are thought to have exploited market

opportunities significantly at $\alpha < 0.05$; 3) ASEAN tertiary institutions are thought to be sometimes sensitive to the threat of competitors significantly at $\alpha < 0.05$; 4) ASEAN tertiary institutions are thought to

be sometimes vulnerable and sensitive to the main assumptions in developing businesses significantly at $\alpha < 0.05$ and; 5) ASEAN tertiary institutions are thought to be heading towards being vulnerable and sensitive to the main assumptions in developing businesses significantly at $\alpha < 0.05$.

The readiness to change and competitive intelligence are the most important determinants of the transformation of students into entrepreneurs. As entrepreneurial spirit developers, the institutions are highly aware of the business trends that occur in the market (Bjerke Björn & Hultman, 2002; Wickam, Finley, & Saeger, 2020). The institutions appear to be facilitators for their students when it comes to their conducting business, and mentors who motivate them to be entrepreneurs while, at the same time, increasing their self-confidence in entrepreneurial skills (Chrisman, Neubaum, Welter, & Wennberg, 2022; Marques,

Marques, Ferreira, & Ferreira, 2019; Oosterbeek, van Praag, & Ijsselstein, 2010). With this strategy, ASEAN higher education can position itself as a transformer of students into entrepreneurs. This finding is also in line with Tullao and Cabuay (2015) research, which states that human resources play an essential role in this achievement and higher education has a significant role in increasing competitiveness.

RQ3: How are ASEAN Universities Developing in Relation to Their Role as Higher Education Institutions Responsible for Preparing Workers?

In response to this question five responses regarding the Readiness to Change condition of ASEAN Universities related to their role in preparing labor were allowed, namely: (1) very unprepared, (2) not ready, (3) sometimes just ready, (4) ready, and (5) very ready. The results are shown in Table 3.

Table 3. Trend of Readiness to Change Conditions in ASEAN Universities as Developers of Entrepreneurial Spirit

Items	Range (R)	Interval (i)	Empiric Score		95% Confidence Interval (μ) for Mean	
			Max	Min	Lower Bound	Upper Bound
			Readiness to Change	29	6	60
Community and Organizational Climate	6	2	10	4	8.2190	8.6843
Current Attitudes and Effort Toward Prevention	8	2	15	7	12.3092	12.8843
Capacity Implement to Change	10	3	15	5	12.7582	13.3385

Table 3 shows that: 1) ASEAN tertiary institutions are thought to have “ready” conditions, significance $\alpha < 0.05$; 2) ASEAN tertiary institutions are thought to be heading towards having a community and organizational climate that facilitates

significant changes at $\alpha < 0.05$; 3) ASEAN tertiary institutions are thought to be heading towards having a positive attitude and trying to prevent competition in their business at significance $\alpha < 0.05$ and; 4) ASEAN tertiary institutions are thought to

sometimes have the capacity to implement change at significance $\alpha < 0.05$. The results of this study emphasize the central role of education in producing superior and competitive resources (Imaroh, 2016).

RQ4: Which Variable or Indicator is The Most Successful in Creating Entrepreneurship Education in ASEAN Higher Education?

The fourth hypothesis test is carried out with a Binary Segmentation analysis approach, called Classification and Regression Trees. In this analysis, the researchers set Depth Pruning at 2, Parent Pruning at 2, and Child Pruning at 1, with a significance level of $\alpha < 0.05$. First, from Figure 5 (see Appendix 3) it can be seen that, if ASEAN tertiary institutions improve in Readiness to Change (VAR_Readi), the capacity of Entrepreneurship Education in ASEAN tertiary institutions will increase by 58.351 from the current condition. Second, from Figure 6 (see Appendix 3), it can be seen that if ASEAN tertiary institutions improve in terms of Community and Organizational Climate that Facilitates Change (COC), the capacity of Entrepreneurship Education in ASEAN tertiary institutions will increase by 64.749 from the current level. Third, from Figure 7 (see Appendix 3), it can be seen that if ASEAN tertiary institutions improve in terms of Managerial Skills (VAR_MS), then the capacity of Entrepreneurship Education in ASEAN tertiary institutions will increase by 253.453 from the current level of ASEAN education. Indeed, Managerial Skill is very much determined by the Readiness to Change of ASEAN tertiary institutions (VAR_Readi), which could increase by 47.330 the level of its Managerial Skills capacity.

Fourth, from Figure 8 (see Appendix 3) it can be seen that, if ASEAN tertiary institutions improve and enhance marketing teaching to students (MS2), then the capacity of Entrepreneurship Education in ASEAN tertiary institutions will increase by 243.828 from the current level of

ASEAN education. At the same time, marketing learning (MS2) is largely determined by the degree of mastery of Marketplace Opportunities (MPO), which could increase the level of marketing learning quality (MS2) by 47.636. For this reason, the capacity of higher education in ASEAN should include a new benchmark in the learning process; namely providing managerial skills and marketing learning skills, because these two factors most strongly determine the success of entrepreneurship education in ASEAN higher education. This is in line with several studies which state that entrepreneurial knowledge requires business knowledge related to managerial and marketing skills (Azizi & Mahmoudi, 2019; Oriarewo, Agbim, & Aondoseer, 2013), and students who are interested in becoming entrepreneurs must be exposed to marketing strategies and experiences (Peltier & Scovotti, 2010; Schlee, Curren, Harich, & Kiesler, 2007). By improving both managerial and marketing skills through active participation in professional student organizations (Peltier, Scovotti, & Pointer, 2008; Schibrowsky, Peltier, & Boyt, 2002) or by mentoring business projects (Chang & Rieple, 2013; Ferreira et al., 2020; Gielnik, Funken, & Bischoff, 2017) students acquired entrepreneurial skills that they could use after graduation.

RQ5: Are There Any Observable Differences in Entrepreneurship Education Development in ASEAN Higher Education When Viewed from Different Backgrounds?

There are differences in the backgrounds of entrepreneurship education development. For instance, higher education institutions' Departments of Business or Entrepreneurship are quite clear about the direction of entrepreneurship education, although they have not focused on transforming students into entrepreneurs, while in the Departments of Management, Accounting and Finance the direction of entrepreneurship education is not thought to be significant at $\alpha < 0.1$. The institutions that originate in Singapore are clear about the direction of entrepreneurship education,

although they have not focused on transforming students into entrepreneurs. However, other countries are unclear about the direction of entrepreneurship education, at a significance level of $\alpha < 0.05$. Female lecturers thought that conditions of entrepreneurship education are clear (though they have not yet focused on transforming themselves into entrepreneurs), while male entrepreneurship education was not thought to be significantly clear at $\alpha < 0.05$. In terms of their age, the lecturers whose ages fall into the ranges under 30 years old, 40-44 years old, and above 50 years old thought that the condition of entrepreneurship education has been clear, though they have not focused on transforming themselves into entrepreneurs, while those aged 30-39 years old, and 45-49 years old thought their entrepreneurship education insufficiently clear, at significance level $\alpha < 0.05$. Lastly, the lecturers with a Bachelor's Degree, Master's Degree, Doctoral Degree, or who are an Adjunct Lecturer believe that entrepreneurship education is clear but have not focused on transforming themselves into entrepreneurs, while those having a Master's Degree, Doctoral Degree/ and the status of Lecturer, Senior Lecturer, Assistant Professor, Associate Professor, or Professor, believed their entrepreneurship education to be unclear, at a significance level of $\alpha < 0.05$.

It was found that, while the subjects studied and the profile of educators do influence the direction of entrepreneurship education in ASEAN countries, they did not have much influence in transforming the students into entrepreneurs (Díaz-Casero, Hernández-Mogollón, & Roldán, 2012). In addition, entrepreneurship education at ASEAN higher education facilities is most effective when conducted by lectures who are either young or senior. However, none of the lecturers was unable to transform themselves into entrepreneurs (Fiet, 2001; Tegtmeier & Mitra, 2015). This finding is an indication that middle-aged lecturers are still focused on pursuing a career in college and do not think about developing a

business outside of their lecturing job. Young lecturers, on the other hand, have a clearer direction in entrepreneurship education, but have not yet focused on transforming themselves into entrepreneurs, owing to their establishing their career as lecturers.

Conclusion

The direction of entrepreneurship education in ASEAN universities is heading in the right direction by focusing on technical skills, entrepreneurial skills, as well as shaping students' personal maturity. However, it still failed to transform these students into entrepreneurs as students were not encouraged to execute their business development. ASEAN universities are aware that they are facing competitive conditions and must immediately take advantage of market opportunities. To face this competition, ASEAN's higher education strategy has to position itself as an institution that transforms students into entrepreneurs. Therefore, a new benchmark must be included in their entrepreneurship education by providing managerial skills and learning marketing skills by creating a business ecosystem in their academic environment.

Theoretical Implication

Theoretically, this study has expanded the theory of entrepreneurship education, competitive intelligence, and readiness to change in the context of ASEAN institutions. This study provides several contributions to the entrepreneurship education literature. First, most of the existing studies related to entrepreneurial education discuss the entrepreneurial intention and orientation of students (Chafloque-Cespedes et al., 2021; Gorman, Hanlon, & King, 1997; Kumar, Paray, & Dwivedi, 2021; Piperopoulos & Dimov, 2015), but few discuss the skills that must be provided in the entrepreneurship education curriculum in a rapidly changing and uncertain global economic condition (Pettersen et al., 2019; Ratten, 2020), research on which is still very limited (Man,

2019; Reyad, Musleh Al-Sartawi, Badawi, & Hamdan, 2019). Our study focused on how formal education in the ASEAN countries could integrate the managerial and marketing skills that are needed to nourish entrepreneurship education among students, in order to improve their readiness to adapt to the uncertain conditions of global business. By strengthening these skills, and that of competitive intelligence, formal education can increase the readiness to change within the increasingly integrated ASEAN community. Second, this study also shows that the readiness to change the entrepreneurship education curriculum in universities to adapt to a changing business world is very important, as a means of transforming students into entrepreneurs. Lectures as the spearhead of the university need to transform to be mentors to encourage students to execute business development development (Othman, Hashim, & Ab Wahid, 2012; Yeap, Abdullah, & Thien, 2021). Third, this study interestingly has shown the importance of establishing businesses as effective methods to teach students about entrepreneurship education as well as lecturer's pedagogies (Otache, 2019; Zeng & Honig, 2016).

Practical Implication

In practice, this study helps to prepare an entrepreneurship education agenda for leaders and educators who influence entrepreneurship education to become more effective, so that students can apply their entrepreneurship skills after they graduate. It is necessary to develop an adaptive business college curriculum by integrating managerial and marketing skills to meet current and future job market needs (Barhem, Salih, & Yousef, 2008; Osmani et al., 2015). Moreover, this study also could encourage the ASEAN countries' ministries of higher education to create and maintain entrepreneurship education, given the current and future issues in the business environment. The government must ensure that the university can remain proactive when providing directive counseling for students by creating a business ecosystem in

the campus environment (Guerrero, Urbano, & Gajón, 2020; Kim, Park, & Seol, 2018) or encourage students to look for a business ecosystem outside the campus (O'Brien, Cooney, & Blenker, 2019; Vázquez-Zacarías, López-Lira, Vargas-Sáenz, & Macías-Prada, 2019), so that they can sharpen their entrepreneurial knowledge, managerial and marketing skills. The university can also boost the capacity of mid-senior and young lecturers by providing funding to develop university startups with students, which will sharpen their mentorship capacity and business experience (Culkin, 2013; Guerrero, Urbano, & Gajón, 2020).

Limitation and Future Research

This study was limited to the ASEAN countries' context, but it could be expanded by conducting a comparative study of Asia and Europe. This study was also only a superficial examination of the condition of entrepreneurship education in ASEAN institutions. In order to gain a deeper understanding of the issue, a qualitative approach could be taken by interviewing mid-senior or young lecturers. It also focuses on the lessons learned from students' perspectives in ASEAN institutions and on how they interact with the entrepreneurship education curriculum in their institutions. In conclusion, the future study is expected to further explore how establishing new businesses should be started for those who understand the business market and the business opportunities regardless of their academic background and experience. It could focus on the lessons learned from students' perspectives in ASEAN institutions. It is necessary to conduct similar studies in contexts other than ASEAN, owing to the important role of entrepreneurship education in affecting the economic outcomes worldwide.

Acknowledgment

This work is funded by the School of Business and Economics at Universitas Prasetiya Mulya through an internal grant

(ID: 0/3/1233/07/17/11/02/ 0/0), in collaboration with RIG- Educational Technology of Bina Nusantara University, Universitas Agung Podomoro, and Management Science University Malaysia.

Declaration of Interest

The authors declares that there is no conflicts of interest

Notes on Contributors

Teddy Trilaksono is a faculty member in the Department of Business at Universitas Prasetiya Mulya. His research interests are entrepreneurship, leadership, organizational change, and tourism. Teddy has been actively involved in development projects for Indonesia's small and Medium-Sized Enterprises (SMEs) empowerment.

Leonis Marchalina is a faculty member in the Department of Business at Universitas Prasetiya Mulya. Her research interests are human resource management, leadership, and organizational change. Leonis has been actively involved in community development projects to help governments and SMEs in Indonesia.

Sasmoko is a faculty member in the Department of Primary Teacher Education at Universitas Bina Nusantara. His research interests are teaching methods, teacher education, and educational assessments. Sasmoko has been actively involved in the RIG-Education Technology, Binus University.

Yasinta Indrianti is a faculty member in the Department of Entrepreneurship at Universitas Agung Podomoro. Her research interests are Organizational Diagnostic, Positive Psychology, and Entrepreneurship. Yasinta has been actively involved in multidisciplinary research methods and techniques for Indonesia's development education.

Nurul Aqilah Mhd Yusak is a faculty member in the Faculty of Business

Management and Professional Studies at Management & Science University. Her research interests are internal marketing, impulse buying, consumer behavior, and service marketing. Aqilah has been actively involved in development projects of market analysis and customer behavior of Takaful Insurance in Malaysia.

References

- Abdel-Ghany, M. M. (2014). Readiness for change, change beliefs and resistance to change of extension personnel in the New Valley governorate about mobile extension. *Annals of Agricultural Sciences*, 59(2), 297–303. <https://doi.org/10.1016/j.aoas.2014.11.019>
- Aboobaker, N., & KA, Z. (2021). Digital learning orientation and innovative behavior in the higher education sector: effects of organizational learning culture and readiness for change. *International Journal of Educational Management*, 35(5), 1030–1047. <https://doi.org/10.1108/ijem-09-2019-0345>
- Aboobaker, N., & D., R. (2020). Human capital and entrepreneurial intentions: do entrepreneurship education and training provided by universities add value? *On the Horizon*, 28(2), 73–83. <https://doi.org/10.1108/oth-11-2019-0077>
- Adams, D., Tan, M. H., & Sumintono, B. (2020). Students' readiness for blended learning in a leading Malaysian Private Higher Education Institution. *Interactive Technology and Smart Education*, 18(4), 515–534. <https://doi.org/10.1108/itse-03-2020-0032>
- Agarwal, S., Ramadani, V., Gerguri-Rashiti, S., Agrawal, V., & Dixit, J. K. (2020). Inclusivity of entrepreneurship education on entrepreneurial attitude among young community: Evidence from India. *Journal of Enterprising Communities: People and Places in the Global Economy*, 14(2), 299–319.

- <https://doi.org/10.1108/jec-03-2020-0024>
- Allaoui, A., & Benmoussa, R. (2020). Employees' attitudes toward change with lean higher education in Moroccan public universities. *Journal of Organizational Change Management*, 33(2), 253–288. <https://doi.org/10.1108/jocm-08-2018-0232>
- Aring, M. (2015). *ASEAN economic community 2015: enhancing competitiveness and employability through skill development (ILO Asia-Pacific Working Paper Series, 66)*
- ASEAN (2021, Juni 1). <https://asean.org/>
- Azizi, M., & Mahmoudi, R. (2019). Learning outcomes of entrepreneurship education: entrepreneurship education for knowing, doing, being, and living together. *Journal of Education for Business*. <https://doi.org/10.1080/08832323.2018.1502139>
- Barhem, B., Salih, A. H., & Yousef, D. A. (2008). The business curriculum and the future employment market: UAE business leaders' views. *Education, Business and Society: Contemporary Middle Eastern Issues*, 1(2), 124–137. <https://doi.org/10.1108/17537980810890301>
- Benny, G., Yean, T., & Ramli, R. (2015). Public opinion on the formation of the ASEAN economic community: an exploratory study in three ASEAN countries. *Ijaps*, 11(1), 85–114.
- Bergeron, P., & Hiller, C. A. (2005). Competitive intelligence. *Annual Review of Information Science and Technology*, 36(1), 353–390. <https://doi.org/10.1002/aris.1440360109>
- Bhowmik, D. (2019). Factors of human development index in ASEAN: panel cointegration analysis. *International Journal on Recent Trends in Business and Tourism*, 3(1), 8–15.
- Bjerke Björn, & Hultman, C. M. (2002). *Entrepreneurial Marketing: The growth of small firms in the New Economic Era*. Edward Elgar.
- Capannelli, G., & Tan, S. S. (2013). Institutions for asian integration: innovation and reform. *The Political Economy of Asian Regionalism*, 143–167. https://doi.org/10.1007/978-4-431-54568-2_7
- Chafloque-Cespedes, R., Alvarez-Risco, A., Robayo-Acuña, P.-V., Gamarra-Chavez, C.-A., Martinez-Toro, G.-M., & Vicente-Ramos, W. (2021). Effect of sociodemographic factors in entrepreneurial orientation and entrepreneurial intention in university students of Latin American Business Schools. *Universities and Entrepreneurship: Meeting the Educational and Social Challenges*, 151–165. <https://doi.org/10.1108/s2040-724620210000011010>
- Chang, J., & Rieple, A. (2013). Assessing students' entrepreneurial skills development in live projects. *Journal of Small Business and Enterprise Development*, 20(1), 225–241. <https://doi.org/10.1108/14626001311298501>
- Chia, S. (2013). The ASEAN economic community: progress, challenges, and prospects. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2346058>
- Chrisman, J. J., Neubaum, D. O., Welter, F., & Wennberg, K. (2022). Knowledge accumulation in entrepreneurship. *Entrepreneurship Theory and Practice*, 46(3), 479–496. <https://doi.org/10.1177/10422587221093321>
- Culkin, N. (2013). Beyond being a student: an exploration of student and graduate start-ups (SGSUs) operating from university incubators. *Journal of Small Business and Enterprise Development*, 20(3), 634–649. <https://doi.org/10.1108/JSBED-05-2013-0072>
- Dee, P., Francois, J., Manchin, M., Norberg, H., Nordås, H., & van Tongeren, F. (2011). *The Impact of Trade Liberalisation on Jobs and Growth: Technical Note* (OECD Trade Policy Working Papers No. 107).

- <https://doi.org/10.1787/5kgj4jfj1nq2-en>
- Díaz-Casero, J. C., Hernández-Mogollón, R., & Roldán, J. L. (2012). A structural model of the antecedents to entrepreneurial capacity. *International Small Business Journal*, 30(8), 850–872. <https://doi.org/10.1177/0266242610385263>
- Dimitrov, D. M. (2010). Testing for factorial invariance in the context of construct validation. *Measurement and Evaluation in Counseling and Development*, 43(2), 121–149. <https://doi.org/10.1177/0748175610373459>
- Dosch, J. (2013). *The ASEAN economic community: the status of implementation, challenges and bottlenecks*, Victoria: Monash University.
- Dosch, J. (2017). The ASEAN Economic Community: Deep Integration or just political window dressing? *TRaNS: Trans -Regional and -National Studies of Southeast Asia*, 5(1), 25–47. <https://doi.org/10.1017/trn.2016.28>
- Dotong, C. I., & Laguador, J. M. (2015). Developing and maintaining an international climate among Philippine higher education institutions. *Journal of Education and Literature*, 3(3), 107–116.
- Ferreira, J., Paço, A., Raposo, M., Hadjichristodoulou, C., & Marouchou, D. (2020). International entrepreneurship education: barriers versus support mechanisms to stem students. *Journal of International Entrepreneurship*, 19(1), 130–147. <https://doi.org/10.1007/s10843-020-00274-4>
- Fiet, J. O. (2001). The pedagogical side of entrepreneurship theory. *Journal of Business Venturing*, 16(2), 101–117. [https://doi.org/10.1016/s0883-9026\(99\)00042-7](https://doi.org/10.1016/s0883-9026(99)00042-7)
- Gielnik, M. M., Uy, M. A., Funken, R., & Bischoff, K. M. (2017). Boosting and sustaining passion: A long-term perspective on the effects of entrepreneurship training. *Journal of Business Venturing*, 32(3), 334–353. <https://doi.org/10.1016/j.jbusvent.2017.02.003>
- Gorman, G., Hanlon, D., & King, W. (1997). Some research perspectives on entrepreneurship education, enterprise education and education for Small Business Management: A ten-year literature review. *International Small Business Journal: Researching Entrepreneurship*, 15(3), 56–77. <https://doi.org/10.1177/0266242697153004>
- Guerrero, M., Urbano, D., & Gajón, E. (2020). Entrepreneurial university ecosystems and graduates' career patterns: do entrepreneurship education programmes and university business incubators matter? *Journal of Management Development*, 39(5), 753–775. <https://doi.org/10.1108/JMD-10-2019-0439>
- Holt, D., Armenakis, A., Feild, H., & Harris, S. (2007). Readiness for organizational change: the systematic development of a scale. *The Journal of Applied Behavioral Science*, 43(2), 232–255. <https://doi.org/10.1177/0021886306295295>
- Imaroh, T. S. (2016). Entrepreneurship education as a strategy for improving the economical independence and competitive ability of society in ASEAN economic community (AEC) era. *International Journal of Organizational Innovation*, 9(2), 287–295
- Jamaludin, R., McKAY, E., & Ledger, S. (2020). Are we ready for education 4.0 within ASEAN higher education institutions? thriving for knowledge, industry and humanity in a dynamic higher education ecosystem? *Journal of Applied Research in Higher Education*, 12(5), 1161–1173. <https://doi.org/10.1108/jarhe-06-2019-0144>
- Jones, D. M. (2015). ASEAN and the limits of regionalism in Pacific Asia. *SSRN*

- Electronic Journal*.
<https://doi.org/10.2139/ssrn.2569176>
- Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education 1876-1999. *Journal of Business Venturing*, 18(2), 283–300. [https://doi.org/10.1016/S0883-9026\(02\)00098-8](https://doi.org/10.1016/S0883-9026(02)00098-8)
- Khampirat, B., Hastindra Na Ayudhaya, N., Bamrungsin, P. and Flavian, H. (2020). Pedagogy and quality assurance in Thai higher education institutions: from pedagogy to quality assurance in education: an international perspective. Emerald Publishing Limited, Bingley, 129-153. <https://doi.org/10.1108/978-1-83867-106-820201013>
- Kim, C., Park, S.-H., & Seol, B.-M. (2018). The role of universities for the change of a network structure in the regional business ecosystem. *Asia Pacific Journal of Innovation and Entrepreneurship*, 12(1), 77-89. <https://doi.org/10.1108/APJIE-04-2018-044>
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice*, 21(1), 47–58. <https://doi.org/10.1177/104225879602100104>
- Kolvereid, L., & Moen, Ø. (1997). Entrepreneurship among business graduates: does a major in entrepreneurship make a difference? *Journal of European Industrial Training*, 21(4), 154–160. <https://doi.org/10.1108/03090599710171404>
- Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: foundations, extensions, and new directions*, 3-90. San Francisco, CA: Jossey-Bass.
- Kumar, S., Paray, Z.A., & Dwivedi, A.K. (2021). Student's entrepreneurial orientation and intentions: a study across gender, academic background, and regions. *Higher Education, Skills and Work-Based Learning*, 11(1), 78-91. <https://doi.org/10.1108/HESWBL-01-2019-0009>
- Kuratko, D. F. (2005). The emergence of Entrepreneurship Education: Development, trends, and challenges. *Entrepreneurship Theory and Practice*, 29(5), 577–597. <https://doi.org/10.1111/j.1540-6520.2005.00099.x>
- Man, T.W. (2019). Nurturing entrepreneurial competencies through university-based entrepreneurship centers: a social constructivist perspective. In Katz, J.A. & Corbet, A.C. (Ed.) *seminal ideas for the next twenty-five years of advances (Advances in Entrepreneurship, Firm Emergence and Growth, 21)*, Emerald Publishing Limited, Bingley, 141-161. <https://doi.org/10.1108/S1074-754020190000021006>
- Marques, C. S., Marques, C. P., Ferreira, J. J. M., & Ferreira, F. A. F. (2019). Effects of traits, self-motivation and managerial skills on nursing intrapreneurship. *International Entrepreneurship and Management Journal*, 15(3), 733–748. <https://doi.org/10.1007/s11365-018-0520-9>
- Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: a meta-analysis of Entrepreneurship Education Outcomes. *Journal of Business Venturing*, 28(2), 211–224. <https://doi.org/10.1016/j.jbusvent.2012.03.002>
- Mukaram, A. T., Rathore, K., Khan, M. A., Danish, R. Q., & Zubair, S. S. (2021). Can adaptive-academic leadership duo make universities ready for change? evidence from higher education institutions in Pakistan in the light of covid-19. *Management Research Review*, 44(11), 1478–1498. <https://doi.org/10.1108/mrr-09-2020-0598>

- O'Brien, E., M. Cooney, T., & Blenker, P. (2019). Expanding university entrepreneurial ecosystems to under-represented communities. *Journal of Entrepreneurship and Public Policy*, 8(3), 384-407. <https://doi.org/10.1108/JEPP-03-2019-0025>
- Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, 54(3), 442–454. <https://doi.org/10.1016/j.euroecorv.2009.08.002>
- Oriarewo, G. O, Agbim, K. C., & Aondoseer, A. (2013). Entrepreneurial perceptions and knowledge among graduates of Nigerian universities. *International Journal of Scientific and Research Publications*, 3(6). <http://www.ijsrp.org/research-paper-0613.php?rp=P181338>
- Osmani, M., Weerakkody, V., Hindi, N. M., Al-Esmail, R., Eldabi, T., Kapoor, K., & Irani, Z. (2015). Identifying the trends and impact of graduate attributes on employability: a literature review. *Tertiary Education and Management*, 21(4), 367–379. <https://doi.org/10.1080/13583883.2015.1114139>
- Otache, I. (2019). Enhancing the effectiveness of entrepreneurship education: the role of entrepreneurial lecturers. *Education + Training*, 61(7/8), 918-939. <https://doi.org/10.1108/ET-06-2018-0127>
- Othman, N., Hashim, N., & Ab Wahid, H. (2012). Readiness towards entrepreneurship education: students and Malaysian universities. *Education + Training*, 54(8/9), 697-708. <https://doi.org/10.1108/00400911211274837>
- Paliwal, M. & Singh, A. (2021). Teacher readiness for online teaching-learning during Covid-19 outbreak: a study of Indian institutions of higher education. *Interactive Technology and Smart Education*, 18(3), 403-421. <https://doi.org/10.1108/ITSE-07-2020-0118>
- Pawitan, G., Widyarini, M., & Nawangpalupi, C. B. (2018). Moderating effect of demographic factors and entrepreneurial phase on the relationship between entrepreneurial competencies and innovation of ASEAN entrepreneurs. *Pertanika Journal of Social Sciences and Humanities*, 26(S), 151–166.
- Peltier, J. W., & Scovotti, C. (2010). Enhancing entrepreneurial marketing education: The student perspective. *Journal of Small Business and Enterprise Development*. <https://doi.org/10.1108/14626001011088705>
- Peltier, J. W., Scovotti, C., & Pointer, L. (2008). The role the collegiate American marketing association plays in professional and entrepreneurial skill development. *Journal of Marketing Education*, 30(1), 47–56. <https://doi.org/10.1177/0273475307312197>
- Pettersen, I.B., Åmo, B.W., van der Lingen, E., Håvåg Voldsund, K., Johnstad Bragelien, J. (2019). Developing engineering students' willingness and ability to perform creative tasks. *Education + Training*, 61(9), 1138-1150. <https://doi.org/10.1108/ET-10-2018-0219>
- Piperopoulos, P., & Dimov, D. (2015). Burst bubbles or build steam? entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. *Journal of Small Business Management*, 53(4), 970–985. <https://doi.org/10.1111/jsbm.12116>
- Rafferty, A. E., Jimmieson, N. L., & Armenakis, A. A. (2012). Change readiness: a multilevel review. *Journal of Management*, 39(1), 110–135. <https://doi.org/10.1177/0149206312457417>

- Ratten, V. (2020). Coronavirus (Covid-19) and the entrepreneurship education community. *Journal of Enterprising Communities: People and Places in the Global Economy*, 14(5), 753-764. <https://doi.org/10.1108/JEC-06-2020-0121>
- Reyad, S.M.R., Musleh Al-Sartawi, A., Badawi, S., & Hamdan, A. (2019). Do entrepreneurial skills affect entrepreneurship attitudes in accounting education? *Higher Education, Skills and Work-Based Learning*, 9(4), 739-757. <https://doi.org/10.1108/HESWBL-01-2019-0013>
- Schibrowsky, J. A., Peltier, J. W., & Boyt, T. E. (2002). A professional school approach to marketing education. *Journal of Marketing Education*, 24(1), 43-55. <https://doi.org/10.1177/0273475302241006>
- Schlee, R. P., Curren, M. T., Harich, K. R., & Kiesler, T. (2007). Perception bias among undergraduate business students by major. *Journal of Education for Business*, 82(3), 169-177. <https://doi.org/10.3200/joeb.82.3.169-177>
- Shih, M. J., Liu, D. R., & Hsu, M. L. (2010). Discovering competitive intelligence by mining changes in patent trends. *Expert Systems with Applications*, 37(4), 2882-2890. <https://doi.org/10.1016/j.eswa.2009.09.001>
- Somjai, K., & Smith, I. D. (2014). Internationalizing Rajamangala University of Technology Lanna (RMUTL) in the context of the ASEAN economic community (AEC). *HRD Journal*, 5(1), 28-40.
- Suttipun, M. (2014). The readiness of Thai accounting students for the ASEAN economic community: an exploratory study. *Asian Journal of Business and Accounting*, 7(2), 139-157.
- Tegtmeier, S., & Mitra, J. (2015). Gender perspectives on university education and entrepreneurship. *International Journal of Gender and Entrepreneurship*, 7(3), 254-271. <https://doi.org/10.1108/ijge-05-2015-0016>
- Thanalerdsopit, P., Meksamoot, K., Chakpitak, N., Yodmongkol, P., & Jengjarern, A. (2014). The ASEAN economic community 2015: a case study of challenges in Thai higher education. *International Journal of Management in Education*, 8(4), 321. <https://doi.org/10.1504/IJMIE.2014.064952>
- The Commission of the European Communities (2003). *Green Paper: Entrepreneurship in Europe*. Retrieved from https://ec.europa.eu/invest-in-research/pdf/download_en/entrepreneurship_europe.pdf
- Tkachev, A., & Kolvereid, L. (1999). Self-employment intentions among Russian students. *Entrepreneurship and Regional Development*, 11(3), 269-280. <https://doi.org/10.1080/089856299283209>
- Tullao, T., & Cabuay, C. (2015). *Education and human capital development to strengthen R&D capacity in ASEAN* (ERIA Discussion Paper December 2013) <https://www.eria.org/ERIA-DP-2013-36.pdf>
- Ulvenblad, P., Berggren, E., & Winborg, J. (2013). The role of entrepreneurship education and start-up experience for handling communication and liability of newness. *International Journal of Entrepreneurial Behavior & Research*, 19(2), 187-209. <https://doi.org/10.1108/13552551311310374>
- Ustundag, A., & Cevikcan, E. (2018). Industry 4.0: managing the digital transformation. *Springer Series in Advanced Manufacturing*. <https://doi.org/10.1007/978-3-319-57870-5>
- Wickam, M. J., Finley, L. R., & Saeger, K. (2020). Assessing alignment of entrepreneurial spirit to job descriptions seeking business administration or management undergraduates. *Journal of Education for Business*, 95(8), 527-533.

- <https://doi.org/10.1080/08832323.2020.1715332>
- Vázquez-Zacarias, M., López-Lira, A., Vargas-Sáenz, M., & Macías-Prada, J. (2019). Business ecosystems and social innovation: evidence from Colombia and Mexico, Blanco-Jimenez, M. and Álvarez, J.C. (Ed.) *Regional integration in Latin America*, Emerald Publishing Limited, Bingley, pp.133-154. <https://doi.org/10.1108/978-1-78973-159-020191010>
- Xu, K., Liao, S. S., Li, J., & Song, Y. (2011). Mining comparative opinions from customer reviews for competitive intelligence. *Decision Support Systems*, 50(4), 743–754. <https://doi.org/10.1016/j.dss.2010.08.021>
- Yabushita, N. W. (2016). Labour market and economic performance in Thailand and the Philippines: supply-demand imbalance and the ASEAN economic community (AEC). *Thai Journal of East Asian Studies*, 19(2), 25–50. <https://so02.tci-thaijo.org/index.php/easttu/article/view/49547>
- Yeap, S.B., Abdullah, A.G.K., & Thien, L.M. (2021). Lecturers' commitment to teaching entrepreneurship: do transformational leadership, mindfulness and readiness for change matter? *Journal of Applied Research in Higher Education*, 13(1), 164-179. <https://doi.org/10.1108/JARHE-12-2019-0311>
- Yue, C. S., & Das, S. B. (2015). The AEC Beyond 2015: Implementation and Challenges for Singapore. *Journal of Southeast Asian Economies*, 32(2), 239–259. <http://www.jstor.org/stable/44132194>
- Yvonne Feilzer, M. (2010). Doing mixed methods research pragmatically: implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, 4(1), 6–16. <https://doi.org/10.1177/1558689809349691>
- Zeng, Z., & Honig, B. (2016). How should entrepreneurship be taught to students with diverse experience? a set of conceptual models of entrepreneurship education. Models of start-up thinking and action: theoretical, empirical and pedagogical approaches (*Advances in Entrepreneurship, Firm Emergence and Growth*, 18), Emerald Group Publishing Limited, Bingley, 237-282. <https://doi.org/10.1108/S1074-754020160000018007>

Supplementary Data
Appendix 1

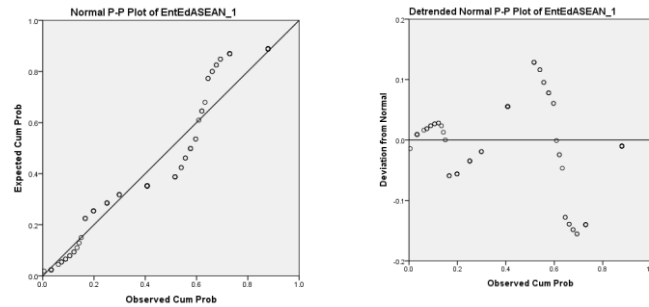


Figure 1. Results of Normality Test on Entrepreneurship Education Strategy Variables in ASEAN Universities (EduASEAN_1)

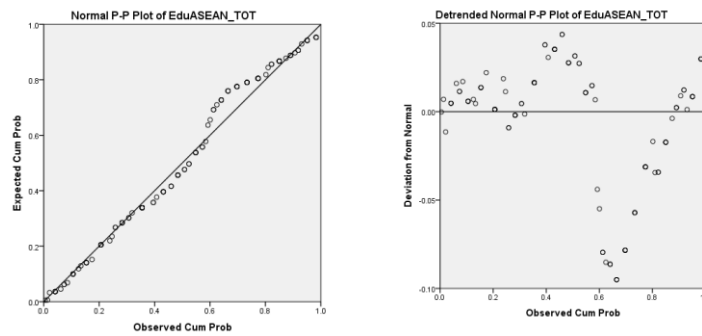


Figure 2. Results of Normality Test on Entrepreneurship Education Strategy Variables in ASEAN Universities whose Education Concepts Contain Readiness to Change and Competitive Intelligence (EduASEAN_T)

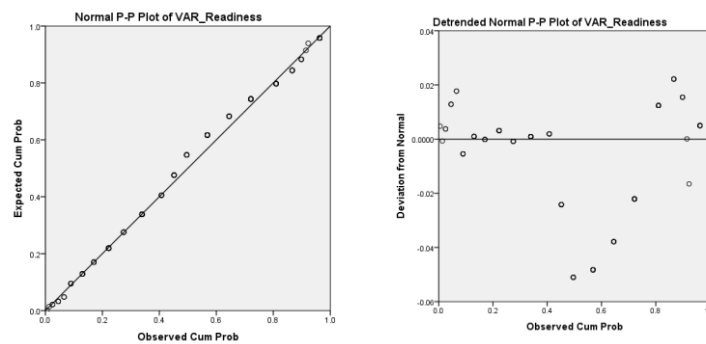


Figure 3. Results of Normality Test on Variable Data Readiness to Change (VAR_Read)

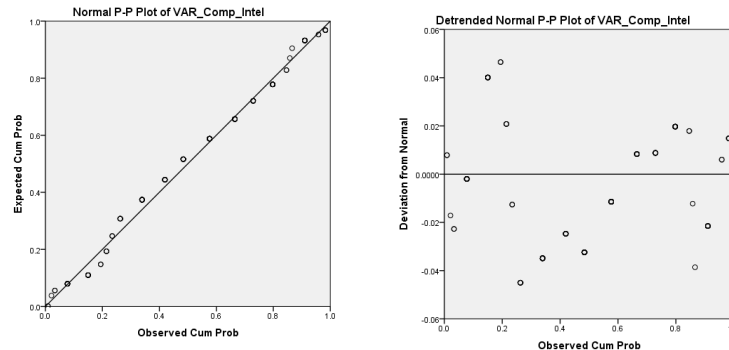


Figure 4. Results of Normality Test Competitive Intelligence Variable (VAR_Comptv)

Appendix 2

Table 4. Summary of Linearity Test Results in Linear Relationship between each variable Readiness to Change (VAR_Readl) and Variable Competitive Intelligence (VAR_Comptv) with the variable Entrepreneurship Education Strategy in ASEAN Universities (EduASEAN_1)

Linearity Test of the Linear interrelationship	Deviation from Linearity Test			Raw Data Test		
	F	Sig	Status	F	Sig	Status
Readiness to Change (VAR_Readl) with Entrepreneurship Education Strategy in ASEAN Universities (EduASEAN_1)	2,803	0,000	Non-Linear	93,893	0,000	Linear
Competitive Intelligence (VAR_Comptv) with Entrepreneurship Education Strategy in ASEAN Universities (EduASEAN_1)	0,971	0,502	Linear	-	-	-

Appendix 3

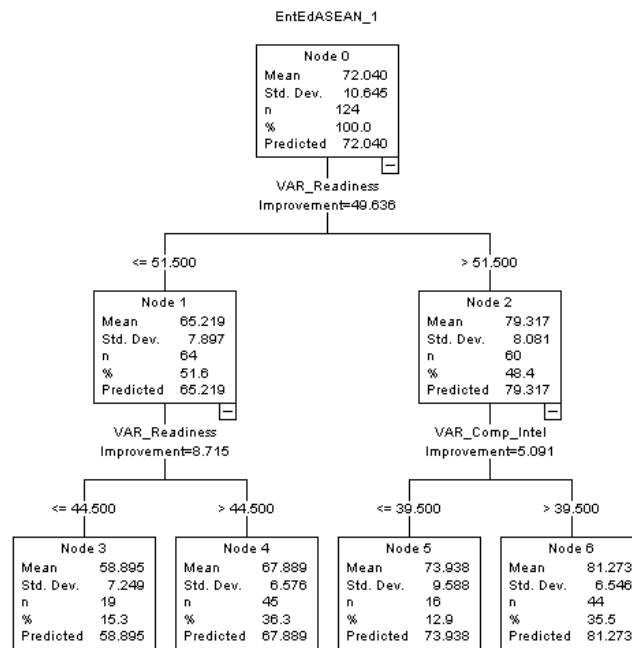


Figure 5. Readiness to Change (VAR_Read) is the strongest Variable that Determining the Shape of Entrepreneurship Education in ASEAN Universities (EduASEAN_1)

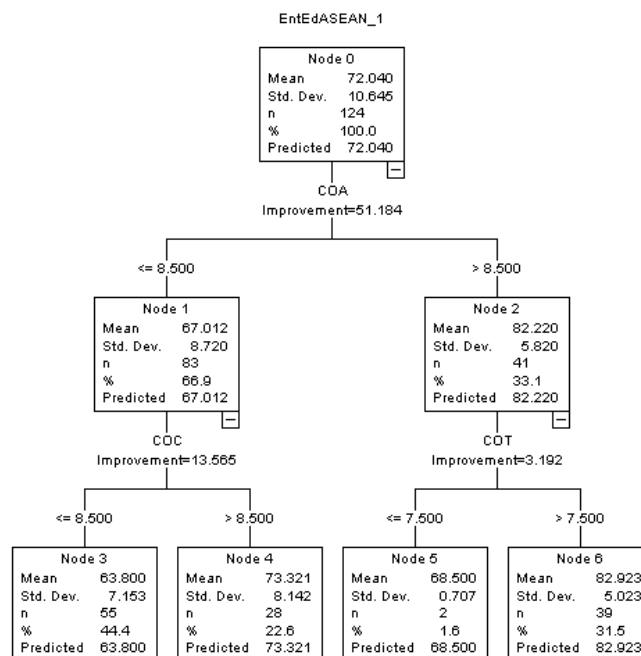


Figure 6. Community and Organizational Climate that Facilitates to Change (COC) is the Most Powerful Dimension for Establishing Entrepreneurship Education in ASEAN Universities (EduASEAN_1)

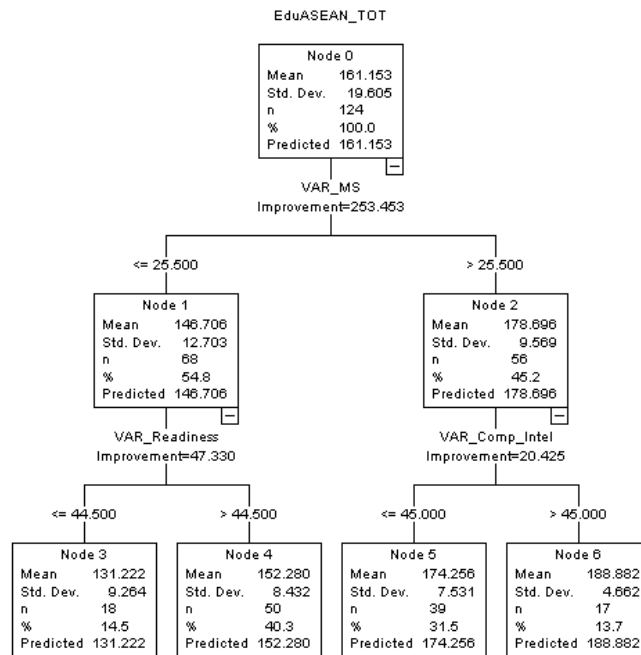


Figure 7. Managerial Skills (VAR_MS) are the Most Powerful Variable Determines Forming Entrepreneurial Education in ASEAN Universities which contains readiness to Change and Competitive Intelligence as an integral part of Education (EduASEAN_T)

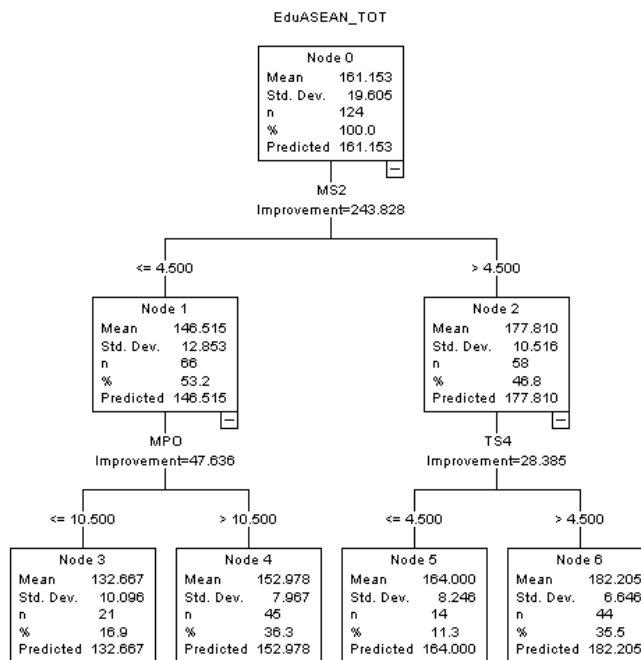


Figure 8. Lessons for Students Who Provide Marketing Skills, Identify Customers, Develop Distribution Channels, and How to Use Them (MS2) is the Most Dominant Item in the formation of Entrepreneurship Education in ASEAN Universities which contains Readiness to Change and Competitive Intelligence as a whole Education (EduASEAN_T)