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Entrepreneurial Competency and Tendencies among Pre-university Students

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Abstract: Entrepreneurial education plays an important role in shaping students' ability and tendency to become entrepreneurs. Various initiatives have been offered by the Malaysian government through its agencies to ensure that all financial aid and support mediums can be utilized through the creative mindset of students, productive teamwork, and business networking capabilities. Fostering entrepreneurship begins in the early stages of primary, secondary, pre-university, and tertiary education, that is, university or college. Most studies related to entrepreneurship competencies and tendencies are focused on students in schools and higher education. This implies that research on pre-university students is limited. Thus, this study addresses the gap between setting the goal of entrepreneurial education and its effectiveness for pre-university students.

This study involved the use of strata random sampling techniques in proportion to 389 samples of pre-university students in Negeri Sembilan, Malaysia. The findings show that the levels of competence for creative thinking and networking are moderate among pre-university students, whereas teamwork competencies are at high levels.

Similar high-level findings were obtained for entrepreneurship tendencies among pre-university students. Moreover, relationship between entrepreneurial competencies and pre-university student entrepreneurial tendencies was significant but moderate. This study discusses the findings and implications of the study.

Keywords: Entrepreneurship competence, creative thinking, teamwork, networking, entrepreneurial tendencies, pre-university students.

I. INTRODUCTION

(A) Background

Countries that are more developed economically and socially are countries with many entrepreneurs. This is because entrepreneurs and entrepreneurial activities are considered a driving force for economic growth [1]. Kelly, Singer and Herrington [2] state that economic growth is determined by the entrepreneurial activity of large and new firms. Most studies report a positive relationship between entrepreneurship and economic development [3] in terms of job opportunities [4], the existence of a sustainable company [5], and innovative technological change [6]. Entrepreneurship is gradually becoming an important requirement for economic development [7], [8] and social community [9]. Therefore, multi-level educational institutions should collaborate to promote entrepreneurial education and present a positive image of an entrepreneurial career [10] to the community.

At the school level, the objective of entrepreneurial education is different compared to entrepreneurial education at the university level. Graduates at universities are exposed to more intensive and complex entrepreneurial knowledge based on entrepreneurial theories. At the secondary level, entrepreneurial education merely provides exposure to entrepreneurship. Opportunities to gain entrepreneurial experience at school are offered through organized entrepreneurship programs such as canteen days [11]. Students can also enhance their entrepreneurial competence and tendencies early in life [12]. Some educators argue that introducing entrepreneurship in the school curriculum can expose students to the concept of business ownership as a career after graduation or college [13]. Entrepreneurship tendencies can be inculcated through entrepreneurial education [14]. This is because studies show that students who are exposed to entrepreneurial education are more likely to launch businesses than students who do not study or are not exposed to such an education.

Entrepreneurial education is also associated with the development of skills and personal values. A study in Norway found that over 90% of secondary school students were exposed to entrepreneurial education. Among the main objectives of such curricula is developing the attitudes and personal qualities (creative, innovative, confident, collaborative, socially skilled, and the ability to take risks and initiative). The cultivation of entrepreneurial minds is also an important aspect discussed [15]. The authors summarize the focus of entrepreneurial education as matters of the mind regarding entrepreneurial behavior such as identifying opportunities, decision-making, and social skills. Therefore, the ability of students to become entrepreneurs depends on the early stages of their education and whether they are equipped with the knowledge and entrepreneurial skills required to pursue the work environment.

(B) Problems and Objectives

Globalization requires human capital that can compete on the world stage and that has the required generic attributes and skills [16]. Youth unemployment is a current problem worldwide including in Malaysia [17]. Competitive human capital formation related to the strength of the curricula of entrepreneurial education has been introduced in secondary school syllabi for over 30 years [18]. Additionally, the government recognizes the importance of student entrepreneurial education and created the Education Development Plan (2013 to 2025) and the Higher Education Development Education Blueprint (2015 to 2025) as an education platform for enhancing creative minds and fostering a culture of teamwork and business networking. Entrepreneurial effectiveness and the development of characteristics and entrepreneurial

potential in secondary schools continues to be a subject of discussion [19], [20], [13]. Students who have been exposed to an entrepreneurial education do not show confidence in becoming entrepreneurs despite five years of entrepreneurial education in secondary schools [21] and exhibiting entrepreneurship competencies [11]. The entrepreneurial characteristics of those exposed to an entrepreneurial education are similar to those who do not take this subject. This shows that students have not shown significant achievements despite having studied entrepreneurship [22].

Consequently, the country failed to produce students with the skills required by the rapidly growing business world [22]. In fact, young entrepreneurs are required to mobilize energy to contribute to the national economy [21]. The effect of the ongoing scenario is that educational transformation goals that are being implemented by the government are not achieved. The need to build competitive human capital can be fulfilled with education [23]. Entrepreneurial education can channel the knowledge, attitudes, and competencies required for competitive human capital and national development [24]. Making entrepreneurship a career field must be a priority, particularly for students who only graduate from high school so they are not oriented wage earners alone [25].

The gap between the goals of entrepreneurial education and the effectiveness of existing entrepreneurial education has led to this study that identifies competencies and entrepreneurial tendencies among relevant pre-university students. Pre-university students represent those who will enter the labor market or become a university student. This study aims to understand their entrepreneurial competence and tendency and their usefulness as conduits of interest and inclination toward entrepreneurship for educational institutions and employers. This study is important for entrepreneurial educators at the pre-university level who develop appropriate teaching methods so that entrepreneurial educational objectives to develop student entrepreneurial competencies are achieved [26].

This study determines the entrepreneurial competence and tendencies of pre-university students in Malaysia. The objective of this study is to:

(a) identify the level of entrepreneurial competency among pre-university students,

(b) identify the level of pre-university entrepreneurship tendencies,

(c) and measure the relationship between entrepreneurial competency and *pre-university student entrepreneurial tendencies.*

II. STUDY REFERENCES

(A) Entrepreneurial Competencies

Competence is the combined dimensions of knowledge, skills, attitudes, and motivation [27] that transform the performance of entrepreneurial tasks [28]. Sánchez [29] also refers to the notion of competence as science-related traits, attitudes, and skills that are used to enhance a task. The idea is related to task performance, which can be measured by certain standards and can be improved through training and education. Wu [30] summarizes the definition of entrepreneurial competence as the overall ability of entrepreneurs to carry out entrepreneurial roles and activities.

The dominance of the competence element is dependent on categories such as demographic, socio-cultural, economic, organization, or company status. Additionally, differing definitions and understanding

among researchers create alternative versions of competency depending on the results or analysis of their research. This is further reinforced by [31], who find no consensus among researchers reviewing the characteristics of entrepreneurial competence due to different study contexts and insights.

Kuratko [7] argues that entrepreneurial competence is characterized by identifying opportunities, taking risks, and converting ideas into reality. Chun, Chien, and Asio [32] list nine key entrepreneurial motivations and competencies: marketing, economics, finance, accounting, management, globalization, legal, planning resources, and information technology. Mitchelmore and Rowley [31] categorize the concept of entrepreneurial competence into four groups. First, entrepreneurial skills identify the uniqueness of products and markets, create opportunities, and strategize business. Second, business and management skills are the development of management systems, fundraising, and business operations. Third, skills build relationships, organizational culture, and recruit workers. Fourth, entrepreneurial competence includes conceptual skills and related skills such as customer management, interpersonal capabilities, communication, and analytics.

Ismail and Zain [33] identify competence based on nature and skills and find that entrepreneurial competencies are composed of performance requirements, the need for autonomy, power requirements, social orientation, self-efficacy, durability, and risk-taking tendencies. Abdullah *et al.* [34] use five dimensions of entrepreneurial competence as a result of a literature review. These dimensions are identifying opportunities, training and skills (general management skills, entrepreneurial skills and business skills), risk-taking, innovation, and information seeking.

In conclusion, entrepreneurship competencies can be formulated as personal skills, management skills, technical skills [35], and entrepreneurial skills. Personal skills include risk taking, creativity and innovation, problem solving, leadership ability, management of others, foresight, ability to overcome sudden change, and seeking opportunities wisely. Planning, implementing each plan, supervising, identifying customers and markets, managing, finance, accounting, control, consulting, law, marketing, and the development and management of administrative matters are examples of management skills. Technical skills are technology-based management skills, communication skills, operations management, managing supplies and production, managing office space, managing building resources and workplace design, managing assets and equipment, and managing technology and production processes. Entrepreneurial skills are more specific to identifying and evaluating opportunities and changing opportunities.

Based on a literature review, personal entrepreneurship competencies are among the competencies required by an entrepreneur to remain competitive and advance in business [36], [37], [31], [9], [35]. For pre-university students, this study uses personal entrepreneurship competence constructs such as creative thinking, teamwork, and networking, which is appropriate based on the respondents' learning environment that emphasizes the generic skills of the students in preparing for university studies or entry to the job market.

1. Creative thinking

Creative thinking is a method or a way to address a problem by combining existing ideas to solve problems [38]. There are three main components of creativity: expertise, creative thinking, and motivational skills. Expertise represents science that includes procedures, technical and intellectual. While creative thinking

skills determines an individual's flexibility and imagination in solving the problem. The final component is motivation, categorized as two components, intrinsic motivation and extrinsic motivation. Intrinsic motivation, or internal motivation, is influenced by the organization's environment while extrinsic motivation is influenced externally.

2. Teamwork

Teamwork describes a generic skill related to the ability to collaborate when solving tasks [39]. According to [40], teamwork requires two or more people who are interdependent, have the same social identity, have complementary skills, and work and share responsibilities to achieve the same goals.

3. Network

A network is a way to exchange of ideas and information for the purposes of gaining certain benefits in everyday life [41]. For entrepreneurship, networking between various parties and the business are the basis for the establishment and development of the business. Networks can help business competitiveness and performance. A network consists of three entities: politics (government officials and agencies), financial institutions, and businesses (buyers, suppliers, and competitors). This partnership is more beneficial than competition alone. It is a strategic network [42].

For education, networks or academic networks can form among higher educational institutions, faculty, and/or departments within a particular subject area and may also involve professional associations and other organizations that contribute to cooperation, creating ideas, transferring knowledge, and improving the exchange of good practices and innovative attitudes [43]. Therefore, the role of networks in the context of education is to provide opportunities to access information, knowledge, skills, teaching, and learning approaches. Establishing relationships with others can advance individuals and educational organizations. Schools and students can build reputation, credibility, and financial support and share ideas, motivations, advice, resources, knowledge, and skills. Networking skills enable students to share experiences, effective learning strategies, assessments, and tasks that need to be resolved [41].

In conclusion, personal competence plays a key role in entrepreneurial potential. The three competencies are also closely linked because team-based learning or collaborative learning is a social process in which learning is actively occurring. Students can participate through collaboration, networking, and through experience with the assignment provided.

(B) Entrepreneurship Tendency

This tendency is intentions, impulses, desires, diligence, determination, and ambition to model various forms of behavior. In psychology literature, intentions have been proved to be the best predictor of planned behavior [44]. Organized behavior is defined as a rare behavior, difficult to see, or one that occurs at an unspecific time, for example, entrepreneurship. Therefore, to improve our understanding of desired behavior, a clearer understanding of the tendency is required [3]. For entrepreneurship, tendency refers to the desire to carry out entrepreneurial activities, that is, to create a job for oneself by establishing a business [45]. Tendency also implies a degree of thought that directs individual attention toward specific goals to achieve what is desired, which manifests in entrepreneurial behavior.

Entrepreneurship is also categorized as cognitive orientation that includes the will, desires, and expectations that affect the choice of an entrepreneurial career. Entrepreneurship requires cognitive activity and continuous thinking to initiate, develop, and sustain business [13]. For example, the process for identifying ideas and business opportunities is a planned process [35]. The cognitive practice should be practiced and implemented to collect and digest information to assess potential business opportunity. Therefore, entrepreneurs need to respond and interact with the environment before making business decisions. Entrepreneurship is an ongoing cognitive process composed of planning, implementation, and business sustainability in orderly and systematic phases.

Study on entrepreneurial education shows entrepreneurial tendency factors to be an important subject [46]. Entrepreneurial tendencies are major variables evaluating the effectiveness of entrepreneurship education and that explain student entrepreneurship potential. A high level of inclination provides strong impetus to be self-employed and to create a new venture [44], [3]. The most important factor in entrepreneurship education is that career choice be tracked early. Therefore, tendency is a critical aspect to be formed before actual entrepreneurial behavior is implemented [44] because the entrepreneurial process begins with the inculcation of entrepreneurial tendencies in students [47].

(C) Entrepreneurship Competency And Entrepreneurial Tendencies

Some studies show a positive and significant correlation between entrepreneurial competency and entrepreneurial tendencies [48]. This proves the direct linkage between entrepreneurial competence and entrepreneurial tendency. If students can enhance entrepreneurial competence, their entrepreneurial tendencies will also increase. Similarly, [34] measure the entrepreneurial competence relationship with the entrepreneurial tendency of the entrepreneur. The constructs of entrepreneurial competence used in the study include identifying opportunities, training and skills, risk taking, innovating, and information seeking. The study found that only the risk-taking construct had no positive relationship with entrepreneurial tendencies while the other constructs were all positively correlated with entrepreneurial tendency.

However, in contrast to the findings of [49] and [50], the findings of [34] show that entrepreneurial tendencies and entrepreneurship competencies do not have significant correlations. According to the study's findings, a person who has an entrepreneurial tendency does not necessarily have entrepreneurial competence. In fact, the authors insist that entrepreneurial competence can be exhibited by an individual after they venture into entrepreneurship. The authors added that an organization should only select one who has the competence to perform the task.

The same is true when an individual with entrepreneurial competence does not necessarily have an entrepreneurial tendency. This was confirmed by [19], who stated that a competent entrepreneurial operator is often an effective organizational administrator but not someone inclined to become an entrepreneur.

III. RESEARCH METHODS

This study applies quantitative approaches using the survey method. This method is applied because it is widely used in educational research. It can also provide accurate information on large groups using small samples [51].

The population of this study is pre-university students of business studies in Negeri Sembilan, Malaysia. The researcher chose Negeri Sembilan, which is among the top five states in achievement for the Malaysia

Education Higher Certificate 2014 [52]. Additionally, for business studies, the state showed an increase in percentage passes and the percentage of outstanding grade achievements (grade A- and A combined) and good grades (B- and B-grade combinations) for three consecutive years, as shown in Table 1.

Table 1
Pass percentage and grade achievement in business studies

		2011	*2012*	*2013*	*2014*	*2015*
Pass Percentage		73.9	71.4	82.5	83.5	81.8
Grade Achievement						
Good	B- B		43.0	37.9	39.2	
Outstanding	A- A		9.2	13.4	12.6	

Having identified a total population of 1,323 pre-university students [52], the sample size was determined. An accurate sample size must be determined so that the data obtained are correct. Cohen and Manion [53] state that statistical analysis requires a minimum of 30 people as a sample. Gay and Air [54] argue that for a population of less than 1,500 people, 20% should be sampled. Determining sample size can be done through statistical calculations or using tables such as the sample size determination tables by [55].

However, this study applies the Krejcie and Morgan Sample Size Determination Table, and the accurate sample size for the study is 302. To overcome statistical problems from the use of small sample sizes, [56] and [57] suggest that sample size be added. Therefore, in this study, the researchers increased the sample size by 29% to 389 people.

Once the sample size was set, sample selection was conducted in stages. First, random strata are according to rating because Negeri Sembilan is divided into nine districts. The randomly chosen strata and proportionality are used so that each subsample contains the number of subjects in proportion to their population [58]. This is easy to do randomly.

Moreover, the instrument used in this study was a questionnaire. The questionnaire was divided into three sections, Part A to obtain sample demographic information, Section B (26 items) to measure the competence of entrepreneurship and the construct adapted from [41]. For Section C for entrepreneurial tendencies, all items were adapted and modified from [59]. All constructs are measured using a five-point Likert scale with a statement of 1 = strongly disagreeable (SD) to 5 = strongly agree (SA).

Before the fieldwork was conducted, the validity and reliability of the instrument was implemented to ensure that the research objectives were achievable [60] and the necessary measures were taken [61]. The instrument of this study has undergone face validity and content validity. Face validity is the extent to which measurements measure the actual value. The validity of the content includes an assessment of measurements as a representation of the measured content. Five experts, including two language teachers, verified the format, content, language, sentence structure, and scale of the research instrument. Three entrepreneurs were appointed to review the instrument content.

After the above process, a pilot study tested the feasibility or reasonableness of the research to be undertaken. Through pilot test results, researchers can identify inappropriate items and insufficient items [62]. A total of 44 pre-university students in Selangor were involved in the pilot study, and the pilot results were analyzed using the Statistical Package for Social Sciences (SPSS) version 23. The results of the analysis showed that the validity of the instrument with reference to the corrected item-total correlation ranged from 0.36 to 0.79. This implies that the data obtained are eligible because the validity is above 0.30 [56].

For item reliability, Chua [58] recommends that Cronbach's Alpha must be at least 0.70. The result of the analysis shows that the reliability of the instrument using the Cronbach Alpha test for each division is greater than 0.70 for Part B Entrepreneurship Competence (0.83) and Part C for Entrepreneurial Tendency (0.86). Therefore, based on the validity and reliability values obtained, the questionnaire instrument for this study is eligible as shown in Table 2.

Table 2
Instrument validity and reliability

Construct	*Item*	*Corrected item-total correlation*	*Cronbach alpha*
Entrepreneurship Competency:			
Creative Thinking	C1-C8	0.459-0.637	0.834
Teamwork	C9-C18	0.458-0.654	0.856
Network	C19-C26	0.483-0.788	0.895
Entrepreneurship Tendency	D1-D9	0.508-0.749	0.861

For the purposes of determining the level of consent, the mean score interpretation is based on [51], a mean score between 1.00 and 200 is low; 2.01 to 3.00 is moderately low; a mean score of 3:01 to 4:00 shows a moderately high level of approval, and the score 4:01 to 5:00 shows a high level of approval.

(A) Sample Profile

Table 3 shows information on sample profiles. Of the 389 students, 74.6% (290) were female students, and 25.4% (99) were male students. Most of the students in the sample were Malays, 66.1% (257 people), 20.3% were Chinese (79 people), and Indians accounted for 12.3% (48 persons) and others, 1.3% (five persons). There were 21.6% (84 students) with an entrepreneurial family background, and 78.4% (305) have no entrepreneurs among their family members (no entrepreneurial background).

IV. RESEARCH RESULTS

(A) Identifying the Level of Entrepreneurship Competency Among Pre-university Students

Student entrepreneurship competencies are measured by three constructs namely creative thinking, teamwork, and networking. Based on the data obtained, the level of entrepreneurial competence among students is at a moderate level. Details on each construct are shown in Table 4, Table 5, and Table 6.

Table 3
Respondent profile

Demographic	*Category*	*Frequency*	*Percentage*
Sex	Male	99	25.4
	Female	290	74.6
Race	Malay	257	66.1
	Chinese	79	20.3
	India	48	12.3
	Others	5	1.3
Background	Entrepreneur	84	21.6
	Non-entrepreneur	305	78.4

For the construct of creative thinking, the data show that the mean of students' creative thinking is 3.68 and a standard deviation of 0.77. This implies that the creative thinking of pre-university students is at a moderately high level. Student statements implied that they like to attempt different learning techniques (item 3). Seventy-two percent of students said they like unique learning activities (item 5). However, new ideas do not always come to mind, which is apparent in item 2 where the Low Approval (Moderate (M)) percentage is the highest percentage at 40.6%.

Table 4
Frequency, mean, and standard deviation for creative thinking

		SD + D		*M*		*A + SA*	
No.	*Creative Thinking*	*Bil*	*%*	*Bil*	*%*	*Bil*	*%*
1.	I believe I am a creative person	21	5.4	138	35.5	230	59.1
2.	New ideas always pop up in my mind	21	5.4	158	40.6	210	54
3.	I like to try many techniques in my learning	11	2.9	96	24.7	282	72.5
4.	I always explore new techniques when completing a task	11	2.9	117	30	261	67.1
5.	I like to apply unique ways to learning activities	13	3.3	95	24.4	281	72.3
6.	I see problems as a unique opportunity	17	4.4	132	33.9	240	61.7
7.	I can solve problems in many ways	14	3.6	145	37.3	230	59.1
8.	I find many ways to solve problems	19	4.9	141	36.2	229	58.9
	Mean = 3.68						
	Standard Deviation = 0.77						
	Level = Moderately High						

Table 5 shows that the level of teamwork among pre-university students is at a high level with a mean score of 4.07, a standard deviation of 0.701. This is evident because 94.6% of pre-university students agreed with items 16, and 93.1% agreed with item 17, which states that they will tolerate and always prioritize the group's goals over their personal goals.

Table 5
Frequency, mean, and standard deviation for teamwork

		SD + D		*M*		*A + SA*	
No.	*Teamwork*	*Bil*	*%*	*Bil*	*%*	*Bil*	*%*
9.	I can give my opinion freely to team members	11	2.8	68	17.5	310	79.7
10.	I can accept opinions from team members	1	0.3	27	6.9	361	92.8
11.	I can takeover responsibilities as a group leader if necessary	12	3.1	106	27.2	271	69.7
12.	I give priority to team opinion rather than individual opinion	5	1.3	55	14.1	329	84.6
13.	I am easy to build good relationships with many people	8	2.1	53	13.6	328	84.3
14.	I can improve relations with other people and even disagree	7	1.8	83	21.3	299	76.9
15.	I have no problem adapting to the group	5	1.3	72	18.5	312	80.2
16.	I compromise to achieve team goals	2	0.6	19	4.9	368	94.6
17.	I prioritize joint decisions over my own decisions	1	0.3	26	6.7	362	93.1
18.	I understand clearly the situation in the group	1	0.3	51	13.1	337	86.6
	Mean = 4.07						
	Standard Deviation = 0.707						
	Level = High						

The third dimension of entrepreneurial competence is the network dimension, which showed a mean score of 3.95, a standard deviation of 0.75, and networking skills at a medium to high level. Table 6 shows the analysis of network dimensions. The findings show that most pre-university students have the skills to formalize their relationships after lessons and shared experiences. The majority did not agree with informal relations.

Table 6
Frequency, mean, and standard deviation for networks

		SD + D		*M*		*A + SA*	
No.	*Network*	*Bil*	*%*	*Bil*	*%*	*Bil*	*%*
19.	I can deal with many people	9	2.3	87	22.4	293	75.3
20.	I can connect with outsiders and share experiences	2	0.5	54	13.9	332	85.3
21.	I can talk with anyone to get an opinion	5	1.3	64	15.6	341	83.1
22.	I always get advice from others regarding my studies	4	1.1	39	10.0	346	88.9
23.	I can build relationships with any party	5	1.3	94	24.2	290	74.6
24.	I can negotiate with other parties	8	2.1	113	29.0	268	68.9
25.	I can maintain a personal network with others	4	2.1	120	30.8	265	68.1
26.	I can build an informal network with others	4.9	4.2	12.3	31.6	250	64.3
	Mean = 3.95						
	Standard Deviation = 0.59						
	Level = Moderately High						

The summary of the findings shows that pre-university students in Negeri Sembilan have the required entrepreneurial competence. This is evident in the averages for each construct, which are moderately high and high for teamwork. This finding is in line with [35] and [33], who also show that the level of entrepreneurship competency is moderate. The findings of this study found that most students agree with the concept of creativity that includes new learning methods, unique learning activities, and exploring new methods in completing tasks.

Meaningful creative thinking and the creativity concept developed by the Curriculum Development Division (CPC) [63] are aligned. This concept is described by [38] and refers to creative thinking as a method or way of incorporating ideas into problem solving based on three key components, expertise, creative thinking, and motivational skills. This is also supported by [64], who also claim that creativity is the ability to adopt different perspectives as well as the ability to solve the problem in an extraordinary way.

In the context of education, creativity acts as an agent to develop students' thinking. Creativity can encourage students to explore new areas, mobilize thinking, and seek solutions based on reasoning, imagination, and visualization [63]. Creativity is indispensable in state efforts to create human capital that can compete globally in the k-economy era [65], [66]. Competitive human capital can result from individuals who have the creative skills and ideas. In fact, individuals can apply the principles of creativity in solving problems and making decisions in their daily lives.

In addition to creative thinking, teamwork dimensions were also studied. The findings show that most of the pre-university students have a high level of teamwork ability. Among the aspects of pre-university students are tolerance to achieve group goals, to accept the views of others, and to prioritize common decisions. This finding is in line with [67] on the development of teamwork skills of students in various entrepreneurial education courses. Students' collaborative skills improved their perception assessments after collaborating on projects and assignments. This is supported by [68] in his study of entrepreneurial competencies that incorporate teamwork aspects, demonstrating the level of improvement among students after working together.

Based on [69], teamwork skills are one way to increase the effectiveness of learning through discussion, questioning, and peer assessment. This is a learning method that deviates from traditional, interactive, student-centered, and focused learning models. Additionally, the impact of teamwork in [70] shows an increase in the development of teamwork skills. Students performed above the average score, combining previous knowledge and better understanding in the context of assignments. Thus, collaborative learning is an active and interactive learning method. As a result, it can improve students' academic motivation and performance.

In addition to the competence of creative thinking and teamwork, the analysis shows that network competence is also at a moderately high level. This proves that pre-university students have understood the concept and importance of networks in their learning and social lives. The network coincides with [71] that the network in the context of the student is an informal network and categorized as a private network. The network involves direct and face-to-face contact between students with parties such as parents, friends, teachers, families, lecturers, and association members. Business activity is not the basis of this relationship. Assistance is in the form of moral support, workforce, and required advice and information. The same concept is used by researchers such as [72] to explain the network concept, but the terms used are different. For example, the primary network describes the private network, the secondary network describes people known to entrepreneurs, and tertiary networks include customers, suppliers, and banks.

Pre-university student network competency levels can be useful inputs when explaining the development of generic skills of pre-university students. This finding coincides with the study conducted by [72], which finds that students of the Universiti Utara Malaysia Student Program have a high level of network competency (primary, secondary, and tertiary). The results showed that most students use primary networks at a high level followed by secondary level networks while the network at the tertiary level is still low. This requires the research of universities and students to jointly expand, strengthen, and manage the three types of entrepreneurial networks to increase confidence when assuming entrepreneurial ventures.

Researchers consider that among the three competencies mentioned above, teamwork competencies are high among pre-university students. Pang, Mazren, and Muhammad [22] find that entrepreneurship education learning at the pre-university level provides advantages such as improving memory, understanding material, and focusing on knowledge practices, integrating knowledge, improving critical thinking, motivation and social skills, leadership, and teamwork. Problem-based learning (PBL) is aligned with the concept of teamwork competency, but it is more comprehensive because it involves an active learning process and focuses on the content of a contextual situation that can develop critical thinking skills to apply knowledge to the situation. This implies that the use of the PBL approach should be continued and enhanced to ensure that students develop self-learning skills and are less dependent on others. This scenario can prepare students to launch a complex and dynamic real-world business.

(B) Identifying the Level of Entrepreneurial Tendencies Among Pre-university Students

There are nine statements that illustrate the level of students' entrepreneurial tendencies. Table 7 shows data on pre-university student entrepreneurial tendencies. The average mean score obtained was 4.04, and the standard deviation was 0.62. This shows that the level of entrepreneurship tendencies among pre-university students is high. This is evident because 93.5% of students give a high level of consent for item 5 "I want to succeed in my own pursuits" followed by item 7, where the student agrees with the statement (92.5%) "I want to get what I want in life."

The substantial role played by entrepreneurial tendency is formulated as a state of mind that directs the goal of setting up a business. Krueger *et al.* [3] and [19] support this finding by stating that entrepreneurship involves cognitive operations resulting from interaction with the environment. Hence, the high inclination to be entrepreneurs exhibited by pre-university students should be nurtured so that the goal of producing many entrepreneurs in Malaysia is achieved. Time factors and the situation can cause entrepreneurial tendency to decline because other factors need to be considered to encourage individuals to choose to venture into entrepreneurship. Apart from knowledge, interests, skills, and abilities, individuals are also required to set targets whenever they want to venture into entrepreneurship and to sample models to provide aspirations to successful individuals in the field of entrepreneurship.

(C) Measuring the Relationship between Entrepreneurial Competencies and Pre-university Student Entrepreneurial Tendencies

Ho1: There is no significant relationship between entrepreneurial competencies *and entrepreneurial* tendencies

Correlation tests were conducted to measure the significance and strength of the relationship between entrepreneurial competencies and entrepreneurial tendencies. Table 8 shows that there is a significant

Table 7
Frequency, mean, and standard deviation of entrepreneurial tendency

		SD + D		*M*		*A + SA*	
No.	*Entrepreneurial Tendency*	*Bil*	*%*	*Bil*	*%*	*Bil*	*%*
1.	I want to be an entrepreneur rather than earn a salary	51	13.1	94	24.2	244	62.7
2.	I want to be the leader in my organization	11	2.8	95	24.4	283	72.8
3.	I want to be a better person	2	0.5	48	12.3	339	87.1
4.	I want to have a business in the future	7	1.8	73	18.8	309	79.4
5.	I want to succeed with my own pursuits	1	0.3	24	6.2	364	93.5
6.	I want to be an entrepreneur	20	5.1	130	33.4	239	61.5
7.	I want to get what I want in life	–	–	29	7.5	360	92.5
8.	I want to venture into business before I am 40 years old	20	5.2	100	25.7	269	69.2
9.	I want success because I have business skills	10	2.6	76	19.5	303	77.9
	Mean = 4.04						
	Standard Deviation = 0.615						
	Level = High						

correlation between entrepreneurial competency and entrepreneurial tendency with the correlation coefficient, r = 0.40 and p <0.05. The results show that the strength of relationships between variables is moderate. Hence, the null hypothesis stating that there is no significant relationship between entrepreneurial competency and entrepreneurial tendency is rejected.

Table 8
Correlation between entrepreneurial competency and entrepreneurial tendencies

Variable	*r*	*s.d*	*Correlation Level*
Entrepreneurship Competency	0.40	0.00	Moderate

The significant relationship between these variables is also demonstrated in the Kakkonen [73] study, which finds a positive linear relationship between entrepreneurial competence and entrepreneurial tendencies. Similarly, [34] finds a positive relationship between entrepreneurial competency and the entrepreneurial tendency of university students in Malaysia. The higher the level of entrepreneurial competence, the stronger the entrepreneurial tendency. The findings of the Sanchez [29] study, using quasi-experimental methods as a research technique, also supports the above findings whereby treatment groups can enhance entrepreneurial competencies and entrepreneurial tendencies as opposed to control groups.

V. IMPLICATIONS AND CONCLUSIONS

The results of this study contribute to the usability of planned behavioral theory [44], particularly the desire and tendency to venture into entrepreneurship after graduation. This trend according to [44], [3], and [74] are the basis for predicting the true behavior of entrepreneurship. This statement is also in line

with the theory of planned behavior [44]. In fact. Ajzen [44] explains that the tendency can be the deciding factor in behavior. As the best predictor of entrepreneurial behavior, high entrepreneurial tendencies can be a powerful motivating factor in entrepreneurship.

This study also implies the practical aspect of improving the entrepreneurship curriculum and developing the existing entrepreneurship program carried out by the Ministry of Education Malaysia and schools. Curriculum decision makers should improve the existing syllabus by emphasizing the relevance of competence elements to pre-university students' entrepreneurial readiness. School administrators and teachers can plan entrepreneurship programs that empower students' creativity by engaging in experience sharing with successful entrepreneurs.

In conclusion, the entrepreneurial sector is a significant component of the Malaysian agenda because of its important role in society and the nation. Entrepreneurship activity can minimize the social phenomenon of poverty and improve economic societal standards. Hence, entrepreneurship education is offered to students to establish human capital with entrepreneurial competence and to develop entrepreneurial tendencies. Entrepreneurship competencies need to be built and mastered by all students to enable them to manage current issues. This is also in line with the demands of the 21st century where the country faces new challenges of globalization, liberalization, and the Fourth Industrial Revolution (4IR). Therefore, the education offered must create human capital that can work together to search for opportunities, network, compete, and manage a changing environment.

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