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Ph.D. Dissertation of Education

**The Structural Relationship Among
Entrepreneurial Learning, Environmental
Support, Self-Efficacy, Orientation and
Entrepreneurial Intention of Level 4
TVET Students in Brunei Darussalam
Qualification Framework**

브루나이 QF 4급 직업교육 학생들의 창업의도와
창업학습, 창업 환경지원, 창업자기효능감,
창업지향성의 구조적 관계

August, 2021

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The Structural Relationship Among Entrepreneurial Learning, Environmental Support, Self-Efficacy, Orientation and Entrepreneurial Intention of Level 4 TVET Students in Brunei Darussalam Qualification Framework

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Abstract

**The Structural Relationship among Entrepreneurial Learning,
Environmental Support, Self-Efficacy, Orientation and
Entrepreneurial Intention of Level 4 TVET Students in Brunei
Darussalam Qualification Framework**

By Nur Atiqah Raduan

**Dissertation for the Doctor of Philosophy in Education in the
Graduate School of Seoul National University, South Korea, 2021.**

Major Advisor: Seung-II, Na, Ph.D.

The purpose of the study was to determine the structural relationship between entrepreneurial learning, environmental support, orientation, self-efficacy and entrepreneurial intention of Brunei Darussalam Qualification Framework Level 4 students. Three objectives were specified in order to meet this purpose, firstly, a structural equation model that assumes the relationship between entrepreneurial learning, environmental support, orientation, self-efficacy and entrepreneurial intention was established and tested. Secondly, the direct relationship among the entrepreneurial learning, environmental support, self-efficacy, orientation and entrepreneurial intention was investigated. Thirdly, the mediating effects of entrepreneurial self-efficacy and orientation on the relationship between the

entrepreneurial learning, environmental support and entrepreneurial intention were examined.

Around 448 online and physical questionnaires were collected during mid May 2021 to mid June 2021 and after data cleaning and exclusion of extreme outliers, similar answers, insincere responses and ineligible participants, only 404 was utilized for the final data analysis excluding 90. For the operationalized items of each observational variables, the content validity were reviewed by experts and practitioners in both entrepreneurial education and educational field while the face validity was reviewed by both teachers and students. The reliability and validity was checked through the pilot study.

For data analysis, descriptiv, correlation and reliability analysis were performed using IBM SPSS Statistics 26.0 while Mplus6 was used to verify the fitness of the structural equation model and analyze the direct, indirect and mediating effects among the variables. The statistical significance as set based on .05 significance level.

As derived from the results of this study, firstly, the hypothesized structural mode is appropriate to predict the relationship between entrepreneurial intention and its exogenous variables entrepreneurial learning, environmental support, entrepreneurial self-efficacy and orientation. Secondly, as there is a students who are highly confident in their abilities and skills which are needed to start a business and their belief that their goal is within their control, tends to have a higher desire to start a business. Thirdly, entrepreneurial self-efficacy mediates the relationship between education or learning to entrepreneurial intention as well as relationship between environmental support and entrepreneurial intention. Thus, in this study, self-efficacy is an important determinant of entrepreneurial intention as

it mediates the relationship between entrepreneurial learning and entrepreneurial intention, as well as the relationship between entrepreneurial orientation to entrepreneurial intention and relationship between entrepreneurial learning to entrepreneurial intention.

This study has found lack of significant and direct relationship between entrepreneurial learning, environmental variable and entrepreneurial orientation to entrepreneurial intention and this could be due to several factors that is unique to Brunei socio cultural or economy context such as its rentier and welfare state, its high collectivism culture with rigid stratification system and strong family ties.

The results of this study can provide implication to policy makers, post secondary educators as well as any government-led or public entrepreneurial support institution to improve the entrepreneurship environment and learning in Brunei. Firstly this paper provides a theoretical contribution in the conceptualization of entrepreneurial intention using the concept of Goal intention and implementation intention. Secondly, It is necessary to design a purposeful entrepreneurial education policies and programs which increases entrepreneurial self-efficacy of students in BDQF level 4 who are at a cross road of either starting a career or continuing studies. Thirdly it is worth to reprioritizing the aims of entrepreneurship education in Brunei to nurture risk taking, innovativeness and proactiveness tendencies. And fourthly, future educational policy making or program designing should ensure a tripartite relationship between entrepreneurial policy makers, educational and training providers and the community.

Follow up studies to expand and improve the current limitations includes examining the same research questions with a mixed methods methodology, or

conducting a longitudinal study that measures the continuity of entrepreneurial intention into entrepreneurial behavior. Moreover, studies on intention on a larger range of age groups such comparing how their level of entrepreneurial intention for various age group and future research should verify the effect of cultural orientations as such as the effect of collectivism, individualism, femininity and masculinity on entrepreneurial intentions and compare the findings with other studies in similar culture.

Keyword : Brunei Darussalam, TVET, Entrepreneurial Intention, Entrepreneurial Learning, Entrepreneurial Self Efficacy, Structural Equation Model

Student Number : 2015-31361

Table of Contents

I. Introduction	1
1. Statement of the Problem	1
2. Purpose of the Study	5
3. Research Hypothesis	5
4. Definition of terms	8
5. Limitation	13
II. Literature Review	15
1. Contextual Characteristics Specialized to Brunei	15
2. BDQF Level 4 and Post Secondary Vocational Students of Brunei	17
3. Concept and Measurement of Entrepreneurial Intention	34
4. Variables Related to Entrepreneurial Intention	54
5. Relationship Among Variables Related to Entrepreneurial Intention	84
III. Research Method and Procedures	104
1. Research Design	104
2. Population and Sample	106
3. Instrumentation	110
4. Data Collection	127
5. Data Screening and Analysis	128

IV. Results	135
1. Characteristics of the Sampled Respondents	135
2. Fitness of the Structural Equation Model	146
3. Verification of the Structural Equation Model of Entrepreneurial Intention and Selected Exogenous Variables	157
4. Direct and Indirect Effects of the Exogenous Variables on Entrepreneurial Intention	162
5. Mediated Effects of the Self-Efficacy and Entrepreneurial Orientation	163
6. Discussion of the Research Findings	166
V. Summary, Conclusions and Recommendations	178
1. Summary	178
2. Conclusions	182
3. Recommendations	183
Reference	191
[Appendix]	223
1. Permission Letter	223
2. Pilot Study Questionnaire	224
3. Survey Questionnaire	232
4. Survey for Feedback for Scale from Experts	242
5. Summary of Appropriateness and Feedback from Selected Panel of Experts	246

6. Summary of Panel for Content Validity	249
7. Excluded Cases from Actual Analysis	250
8. Several Alternative SEM Models and their Model Fit with Path Coefficient	251

Table

<Table II-1> Technical and Vocational School Graduates in Relation to Labour Force Indices	26
<Table II-2> Table of Post Secondary Vocational Graduates Destination	28
<Table II-3> Proportion of Technical and Vocational School and Secondary Graduates as Employers or Own Account Workers	30
<Table II-4> Entrepreneurship Related Programs Target Groups and the Types of Services and Activities	33
<Table II-5> Definition of Entrepreneurial Intent	34
<Table II-6> Definition and Scope of Entrepreneurship	37
<Table II-7> Theories and the Definition of Self Determined Intention in Past Literature ..	40
<Table II-8> Intent Models and Predictive Ability	45
<Table II-9> Measurement of Entrepreneurial Intention (EI)	50
<Table II-10> Variables Related to Entrepreneurial Intention (EI) in Recent Literatures (2019-2008)	56
<Table II-11> Entrepreneurship Education Outside of Class and its Types	62
<Table II-12> Entrepreneurial Cognitive Outcomes	67
<Table II-13> Dimensions of Entrepreneurial Self Efficacy and its Operationalizing Instrument	80
<Table III-1> Enrolled Students in BDQF Level 4 as of 2019 for IBTE Institutes	106
<Table III-2> Enrolled Students in BDQF Level 4 for Private Institutes	107
<Table III-3> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Intention	111

<Table III-4> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Learning	113
<Table III-5> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Entrepreneurial Learning	114
<Table III-6> Internal Reliability of Instrument of Observable Variables Measuring Environmental Support	117
<Table III-7> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Environmental Support	119
<Table III-8> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Self-Efficacy	121
<Table III-9> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Entrepreneurial Self Efficacy	121
<Table III-10> Internal Reliability of Instrument of Observable Variables Measuring Entrpreneurial Orientation	123
<Table III-11> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Entrepreneurial Orientation	124
<Table III-12> List of Final Survey Variables and Instruments	125
<Table III-13> Descriptive Statistics of the Respondents	130
<Table III-14> Data Analysis Methods	131
<Table III-15> Overall Model Fit Indices and Acceptable Level of Fit Applied in this Thesis	132
<Table IV-1> Descriptive Statistics for the Variables in the Model	136
<Table IV-2> Cross Tabulation of the Sampled Respondents Characteristics	137

<Table IV-3> Differences in Means According to Gender	138
<Table IV-4> Differences in Means According to School Type	140
<Table IV-5> Differences in Means According to Exposure to Work Attachment	142
<Table IV-6> Differences in Means According to Owning a Business	143
<Table IV-7> Differences in Means According to Family Business	145
<Table IV-8> Normality Test of the Model	146
<Table IV-9> Correlation Coefficient of the Observable Variables	150
<Table IV-10> Multi-Collinearity Between the Observable Variable of Each Latent Variable	151
<Table IV-11> Measure of Goodness of Fit	154
<Table IV-12> Convergence Validity	154
<Table IV-13> Factor Correlation Matrix with Square Root of AVE on the Diagonal	156
<Table IV-14> Path Coefficients of Tested Structural Equation Model	159
<Table IV-15> Path Coefficients and Direct Effect of the Tested Model	162
<Table IV-16> Mediating Effect in the Tested Model	163

Figures

[Figure II-1] Brunei Education System and Brunei Darussalam Qualification Framework ...	19
[Figure III-1] Structural Equation Model of Exogenous Variable with Entrepreneurial Intention of BDQF Level 4 Students	105
[Figure IV-1] Confirmatory Factor Analysis	153
[Figure IV-2] Results of Path Coefficients of the Tested Structural Equation Model and Goodness of Fit	160

I. Introduction

1. Statement of the Problem

Entrepreneurship has been identified as one of the means to increase economic efficiencies and job creation, improve innovation and maintain the employment rate in a country. At the current state of Brunei Darussalam's labour market, the promotion of entrepreneurship is indeed of imperative need as Brunei Darussalam has been facing an increasing percentage of unemployment in recent years reaching up to a high of 9.3% in 2017 (Department of Economic Planning and Development, 2017). This had not only affected the economic output of Brunei, as its Gross Domestic Product (GDP) is experiencing a negative growth of 0.5 per cent year-on-year as of 2019 (Department of Economic Planning and Development, 2019); it had also depreciated the human capital and aggravated the social instability. Contributing to this is the lack of industries and workplace that matches the educational level, knowledge and skills of the graduates, as more than 80% of Brunei industry are in Oil and Gas sector calling for a urgent need for the creation of new industries and business ventures.

Responding to this call, the government of Brunei Darussalam has been increasingly creating more policies and programs that aims to improve entrepreneurial abilities and eases the creation of entrepreneurial ventures. Part of which includes the move by Ministry of Education to embed entrepreneurship skills as one of the required skills in the National Curriculum and Assessment framework (*Sistem Pendidikan Negara*, SPN 21). Under the SPN 21, school curriculum are expected to integrate several value added aspects among which

includes increasing the awareness of the importance of entrepreneurial values, instill entrepreneurial traits and basic entrepreneurial skills of students. (Ministry of Education, 2013).

In the context of Brunei's post-secondary vocational students, despite having entrepreneurial skills as part of the core skills that the current post-secondary vocational curriculum should deliver, there is a lack of quantitative studies that attempts to understand the intent of vocational students in starting a business. Yet, a big proportion of business owners' highest education attainment is secondary education thus emphasizing the need to study factors that influence secondary students entrepreneurial intention in Brunei.

Entrepreneurial intention, in general, is the state of mind that guides an individual to perform actions that will lead to an entrepreneurial behavior outcome (Pihie & Akmaliah, 2009). Prior studies suggest that entrepreneurial activity can be predicted more accurately by studying intention (Krueger et al., 2000). In academia, the study of entrepreneurial intention have a considerable appeal to researchers as these could not only contribute to the development of entrepreneurial education, but also to the understanding of how individuals start a business (Rusu, 2015; Schenkel et al., 2014).

Despite the increasing pool of research in the field internationally, scholars still possess a limited understanding of the factors and decision processes that motivates an individual to become an entrepreneur (Markman, Balkin, & Baron, 2002). Narrowing this to the context of Brunei, the investigation of the factors that affect career choice as an entrepreneur is essential if entrepreneurship is to be considered as one of the relief for the unemployment issue. Yet, specific

studies on entrepreneurial intention are still in its infancy stage and published quantitative studies on entrepreneurial intentions are found to be limited in number, if existing at all. Moreover, a prior study on secondary school students in Brunei indicates that these students face challenges in career choice due to their lack of self esteem in career decision making (Mahalle & Ibrahim, 2013). However, this does not show a representation of the secondary schools in Brunei as the study is only conducted on secondary school, thus deeming it necessary to explore what factors affect the intention to be in a entrepreneurial career.

Prior researches have shown that entrepreneurial intention can be predicted by participation in various form of entrepreneurship activities (Bhat & Singh, 2018; Entrialgo & Iglesias, 2016; Galvão et al., 2018) through behavioural approaches or perceptions of behaviour such as personal attitude, social norm and perceived behavioural control (Bhat & Singh, 2018; Ferreira et al., 2012; Iakovleva, Kolvereid, & Stephen, 2011). It could also be predicted through various personal traits such as propensity to risk and innovativeness (Ferreira et al., 2012); while family background was also seen as a predictor (Bae et al., 2014; Entrialgo & Igleisis, 2016).

Albeit the increasing literature on entrepreneurial intention, there are still limitations and lack of clarity several aspects of the research that demands attention. For instance, there are several ambiguity with regards to the relationship of several variables to entrepreneurial intention. This is especially evident for the effect of entrepreneurial learning or education on entrepreneurial intention (Wilson, Kickul & Marlino, 2007). The lack of clear positive connections between entrepreneurship education and outcome may also be linked

to methodological issues. Moreover, Mauer, R., Neergaard and Linstad (2017) suggested that there should be further studies that could provide insights into the questions of what we can do in the process of early-age formation to foster entrepreneurial self-efficacy and how to influence children, adolescents, or young adults with low levels of entrepreneurial self-efficacy to improve the efficacy. Moreover, Tkachev and Kolvereid (1999) proposed that further research is required to disentangle the full role of prior experience in entrepreneurship including working experience, self employment experience and experience in participating in a entrepreneurship education activities and programs, in predicting entrepreneurial intent.

Overall, by taking into account these mentioned limitations as well as the needs to investigate the effect of human capital related variables, external environmental factors and individual traits on entrepreneurial intention, this study attempt to verify a hypothesized structural model that assumes a relationship between environmental support, entrepreneurial learning, entrepreneurial self efficacy, entrepreneurial orientation and entrepreneurial intention. In particular, the positive direct and indirect impacts will be explored. Moreover, considering the argument set forward by Davidsson (1995) which suggest that the understanding of what kind of individual would consider going into business, is more beneficial for policy making, than studying those who are already in it, this study could offer significant contributions to practice especially in terms of specifying an entrepreneurial policy focus. This in turn could contribute to the development of entrepreneurial education and training programs which are specific to the characteristics of students taking vocational courses at Brunei Darussalam Qualification Framework (BDQF) level 4.

2. Purpose of the Study

The purpose of this study was to examine the structural relationship between entrepreneurial learning, environmental support, entrepreneurial self-efficacy, entrepreneurial orientation and entrepreneurial orientation of students taking level 4 vocational courses according to the Brunei Darussalam Qualification Framework. In order to achieve this purpose, the specific research objectives were set as follows.

First, to formulate and establish a structural equation model that assumes a relationship between entrepreneurial learning, environmental support, entrepreneurial self-efficacy, entrepreneurial orientation and entrepreneurial intention and to validate whether the model adequately predicts structural relationships between these variables.

Second, to verify the direct effect of the relationship between entrepreneurial learning, environmental variable, entrepreneurial self-efficacy, entrepreneurial orientation and entrepreneurial intention of students.

Third to verify the mediator effect of entrepreneurial self-efficacy and entrepreneurial orientation on the relationship between entrepreneurial learning and environmental support with entrepreneurial intention of students.

3. Research Hypothesis

To pursue the research purpose and the specific objectives, the following hypothesis were derived from literature review

H1: The established structural model will satisfy the goodness of fit standards that is set in this research to predict the relationship between entrepreneurial intentions and entrepreneurial learning, environmental support, entrepreneurial self-efficacy, entrepreneurial orientation of students taking level 4 vocational courses according to the Brunei Darussalam Qualification Framework.

H2: Entrepreneurial learning, environmental support, self-efficacy, entrepreneurial orientation will have a direct and significantly positive influence on entrepreneurial intention of students taking level 4 vocational courses according to the Brunei Darussalam Qualification Framework.

H2-1: Entrepreneurial learning will have a direct and positive effect on entrepreneurial intention (EL→EI).

H2-2: Environmental support will have a direct and positive effect on entrepreneurial intention (EV→EI).

H2-3: Entrepreneurial self-efficacy will have a direct and positive effect on entrepreneurial intention (EE→EI).

H2-4: Entrepreneurial orientation will have a direct and positive effect on entrepreneurial intention (EO→EI).

H3: Entrepreneurial self-efficacy and entrepreneurial orientation will have a mediating effect on entrepreneurial intention of students taking level 4 vocational courses according to the Brunei Darussalam Qualification Framework.

H3-1: Entrepreneurial self-efficacy will have a mediating effect on the

relationship between environmental support and entrepreneurial intention ($EV \rightarrow EE \rightarrow EI$).

H3-2: Entrepreneurial self-efficacy will have a mediating effect on the relationship between entrepreneurial learning and entrepreneurial intention ($EL \rightarrow EE \rightarrow EI$).

H3-3: Entrepreneurial self-efficacy will have a mediating effect on the relationship between entrepreneurial orientation and entrepreneurial intention ($EO \rightarrow EE \rightarrow EI$).

H3-4: Entrepreneurial orientation will have a mediating effect on the relationship between environmental support and entrepreneurial intention ($EV \rightarrow EO \rightarrow EI$).

H3-5: Entrepreneurial orientation will have a mediating effect on the relationship between entrepreneurial learning and entrepreneurial intention ($EL \rightarrow EO \rightarrow EI$).

H3-6: There will be a double mediating effect of entrepreneurial orientation and entrepreneurial efficacy to the relationship between environmental variables and entrepreneurial intention ($EV \rightarrow EO \rightarrow EE \rightarrow EI$).

H3-7: There will be a double mediating effect of entrepreneurial orientation and entrepreneurial self-efficacy to the relationship between entrepreneurial learning and entrepreneurial intention ($EL \rightarrow EO \rightarrow EE \rightarrow EI$).

4. Definition of terms

a. Level 4 TVET Students in Brunei Darussalam Qualification Framework

Level 4 TVET Students in Brunei Darussalam Qualification Framework (BDQF) in this study is defined as students who have completed O-levels are taking post-secondary TVET courses that are aligned to the Brunei Darussalam Qualification Framework level 4, both at government operated schools or privately operated schools, regardless of their major.

Specifically the students are those who are expected to graduate in 2021. The vocational courses mapped on to BDQF Level 4 include Higher National Technical Education Certificate (HNtec), Business and Technology Education Council (BTEC) level 3 Diploma, Lim Kok Wing University of Creative Technology (LUCT) Diploma and National Computing Council (NCC) Education Level 4 Diploma.

b. Entrepreneurial Intention (EI)

Entrepreneurial intention is defined as the state of mind or process of thoughts which directs the individual to put an effort into achieving the goal and the scope of the goal include attempt at new business or venture creation, such as self-employment, a new business organization or the expansion of an existing business, by an existing business, an individual, a team of individuals, or an established business, be it in the near future or after more than 5 years (Rusu,

2015). Entrepreneurial intention was set as an endogenous latent variable, and its observational variables were career goal and action plan.

a) **Career goal** will be in accordance to the theory of intentional control (Heckhausen & Beckmann, 1990), the volitional Models of goal directed behaviour (Bagozzi, 1992) and model of action phases (Gollwitzer, 1990), career goal refers to the phase when the individual starts to form motivation to reach a set a career goal in the future. This will be operationalized using a scale that is modified to suit the target group and developed based on Linan and Chen (2009)

b) **Action plan** will be similar in concept to the “implementation intention” as conceptualized by Heckhausen and Beckmann (1990) and Bagozzi, (1992), and is of similar concept to “action intention” by Gollwitzer (1990). This refers to the state of mind whereby the individual has already thought of plans on when, where and how they intend to act. This is operationalized using 5 items adapted from Cho & Lee (2016).

c. Entrepreneurial Learning (EL)

Entrepreneurial learning refers to the gaining of experiences related to entrepreneurship which could be transformed into acquired knowledge for forming a business (Politis, 2005) and this could occur through various situations including formal education in the class room, workplace and self-directed learning. Entrepreneurial learning was set as an exogenous latent variable, and its observational variables will be measured through three variables which is classroom instruction, workplace learning and self-directed learning.

a) Classroom instruction is defined the perception of whether the cognitive learning through school curriculum has provided knowledge, comprehension, analytical skills, application, evaluation and creation of certain cognitive outcomes related to entrepreneurship. This scale is developed for this study from Bloom's taxonomy of learning and entrepreneurial cognitive outcomes is derived from Mets, Kozlinsk & Raudsaar (2017).

b) Workplace learning is defined as perception of whether cognitive learning through work experiences, workshops outside of school compound or workplace learning has provided respondents with cognitive knowledge specific to working in an entrepreneurial setting. These outcomes are derived Ramsgaard and Østergaard, (2017) conceptualization of learning outcomes in work experiences such as internships.

c) Self-directed learning is defined as the perception of whether cognitive learning through efforts that they have initiated on their own, has provided respondents with cognitive knowledge specific to outcomes related to entrepreneurship skills. These outcomes are derived from Tseng, (2012) conceptualization of self-directed learning domain in entrepreneurship.

d. Environmental Support (EV)

Environmental support is defined as the perceived environmental conditions or perceived contextual factors outside of the student's school or those beyond their personality, that provides opportunities for them to achieve a goal of

starting a business in the future. Entrepreneurial support was set as an exogenous latent variable, and its observational variables will be measured through government policy, financial accessibility and social support

a) Government policy refers to the perception of individual about whether Brunei has policies that supports the creation of new businesses. This research will operationalize government policy construct based on the scale developed by Franke and Lutjhe (2004), Farashah (2015) and Turulja et al., (2020).

b) Financial accessibility refers to the perception of individual about ease of obtaining capital support to fund their business if they were to create one. This research will operationalize financial accessibility construct based on the scale developed by Schwarz (2009), Aragon-Sanchez et al., (2016) and Turulja et al., (2020).

c) Social support is the individual perception or the subjective norm used by an individual to perceive of the support that their immediate family has for them if they start a business. This research will operationalize family support construct based on the scale developed by Gelard and Saleh (2011) and Turulja et al., (2020) on informal networks.

e. Entrepreneurial Orientation (EO)

Entrepreneurial Orientation in this research will be looked at an individual perspective and is defined as the innovativeness, risk taking and pro-activeness competences that could be gained through proper entrepreneurship education or experiential learning (Koe, 2016). Entrepreneurial orientation was set as an

exogenous latent variable, and its observational variables will be measured through three observable variables which is innovativeness, risk taking and pro-activeness.

a) **Risk taking** refers to preferences and tendencies in approaching decision making related to situations which involve some degree of risk and the students' tendencies towards risk taking. It is operationalized using scale by Bolton and Lane (2012), Koe (2016) and Gorostiaga et al (2016).

b) **Innovativeness** at an individual level refers to the degree of openness and creativity as well as how ready students are to follow new ways when they are given new projects, assignments, activities or opportunities which they do not have much information about, in daily life, school or at work. It is operationalized using scale by Bolton and Lane (2012), Koe (2016) and Gorostiaga et al (2016).

c) **Proactiveness** preference and tendencies when taking initiatives or action on any given projects, activities or assignments in daily life, school or at work. It is operationalized using scale by Bolton and Lane (2012), Koe (2016) and Gorostiaga et al (2016).

f. Entrepreneurial Self-Efficacy (EE)

Entrepreneurial self-efficacy is defined as a the individual's confidence in his or her own individual capability to successfully reach their goals or reach a specific outcomes especially in creating a business (Drnovsek, Wincent &

Cardon, 2010). Entrepreneurial self-efficacy was set as an exogenous latent variable, and its observational variables will be measured through two observable variables confidence and beliefs (Ajzen, 2002).

a) Confidence refers to individual confidence in their own capabilities skills that are required especially in achieving a specific outcome which is starting a business in the future or becoming an entrepreneur (Drnovsek, Wincent & Cardon, 2010; Ajzen, 2002). This will be operationalized using a scale that is modified to suit the target group and developed based on Wilson, Kickul and Marlino (2007)

b) Beliefs in this study has a similar concept to perceived behavioural control in Ajzen Theory of Planning Behaviour (Ajzen, 2002). It refers to the extent to which they believe the outcome which is to create a business in the future, be it failure or success, is under their own control. This will be operationalized using a scale that is modified to suit the target group and developed based on Tsai, Chang and Peng (2016).

5. Limitation

Although the implications of this study can spill over towards contributing to the understanding of entrepreneurial intention concept in general, the specific results of this research will only be representative for the students taking TVET courses which are at level 4 according to the Brunei Darussalam Qualification Framework. Hence, could not show a representation of the whole post secondary level students in Brunei. Moreover, as this study collectively explore students

taking courses at BDQF level 4 as one group regardless of their major, this would not reflect the specific relationship between the variables or the characteristics of students distinctive to each major or discipline.

Additionally, although entrepreneurial intention is a variable used as a proxy to predict future entrepreneurial behaviour in the target group, it is understood that the expected behaviour may not be achieved as entrepreneurial intentions can change over time and could be influenced by other factors that are not covered in this study. Moreover, this research is conducted with an understanding that the entrepreneurial behaviour predictors could only be studied in long term longitudinal study which is not feasible considering time constraint for this duration of research.

And lastly, as the entrepreneurial education policies in post secondary TVET schools in Brunei is still in its infancy stage, this research sought to find valuable implications that could be directly applied and be a learning point to refine the current entrepreneurial educational policies and efforts related to entrepreneurship education in the TVET sector. Thus, for this research cultural dimensions and variables which is more intricately related to the community of Brunei are not researched in greater detail.

II. Literature Review

1. Contextual Characteristics Specialized to Brunei

a. Rentier Islamic Welfare State Economy and the Dutch Disease

Brunei Darussalam, unlike many Asian countries, are considered a rentier welfare state as its economy is dependent on the export of oil and gas. This industry, specifically, accounts for more than 40% of the country's Gross Domestic Products (Cheung, 2017). However, the over dependence of oil revenue is known to have detrimental long term effects on its political, economic and social aspects of many rentier state and one of these downside is called the "Dutch Disease" or the resource curse. This resource curse occurs when the over dependence on oil sector inhibits the growth of other sectors (Musa & Basir, 2019).

Although a myriad of efforts has been made to improve the ease of business and growth of industries, the embedded 'bureaucratic administrative' business culture remains as a major challenge. This pose as an additional challenge to the progress in entrepreneurship and innovation as it might hinder individuals to fulfill their own entrepreneurial aspirations and thus, the long run leads to incessant struggle in the process of economic diversification (Heilmaier & Ling, 2021).

b. Malay Culture and Values Unique to Brunei People

The community in Brunei is predominantly Malay, and despite so, the Malay society in Brunei is uniquely distinguishable compared to other Malay-dominated countries such as Malaysia. This is because the majority of the socio-culture is based on the fusion of Malay-Islamic values and the country's governance revolves around the Malay Islamic Monarchy (*Melayu Islam Beraja*, MIB) ideology that is specific to Brunei. According to Blunt (1999) Brunei Malays are found to demonstrate high power distance, strong uncertainty avoidance, low individualism and medium masculinity (as cited in Minnis, 1990). He also found that Bruneian workers exhibited several characteristics such as emotional resistance to change, an aversion to risk-taking, preferences for clear organizational culture, preference for clearly stated rules and regulations, an aversion to conflict, and a mistrust of foreigners as managers (as cited in Minnis, 1990).

c. Characteristics of Young People and its Effects on Labour Market

Moreover, in rentier states, the oil revenue is generally redistributed by providing high income to workers in the government sectors and this may contribute to the fact that the social and cultural norms in Brunei is to pursue a professional, managerial or technical jobs that are in the government sector which may provide the job seeker with high stable monthly income, long term job security and prestige within the community. The lack of entrepreneurial culture among young people could be, in part, an inevitable effect created by these norms. (Musa & Basir, 2019). Aggravating this, the lack of entrepreneurial spirit and overdependence on government benefits has resulted in a high dependency

on foreign workers especially in sectors such as construction; hospitality and wholesale and retail trade (Musa 2020).

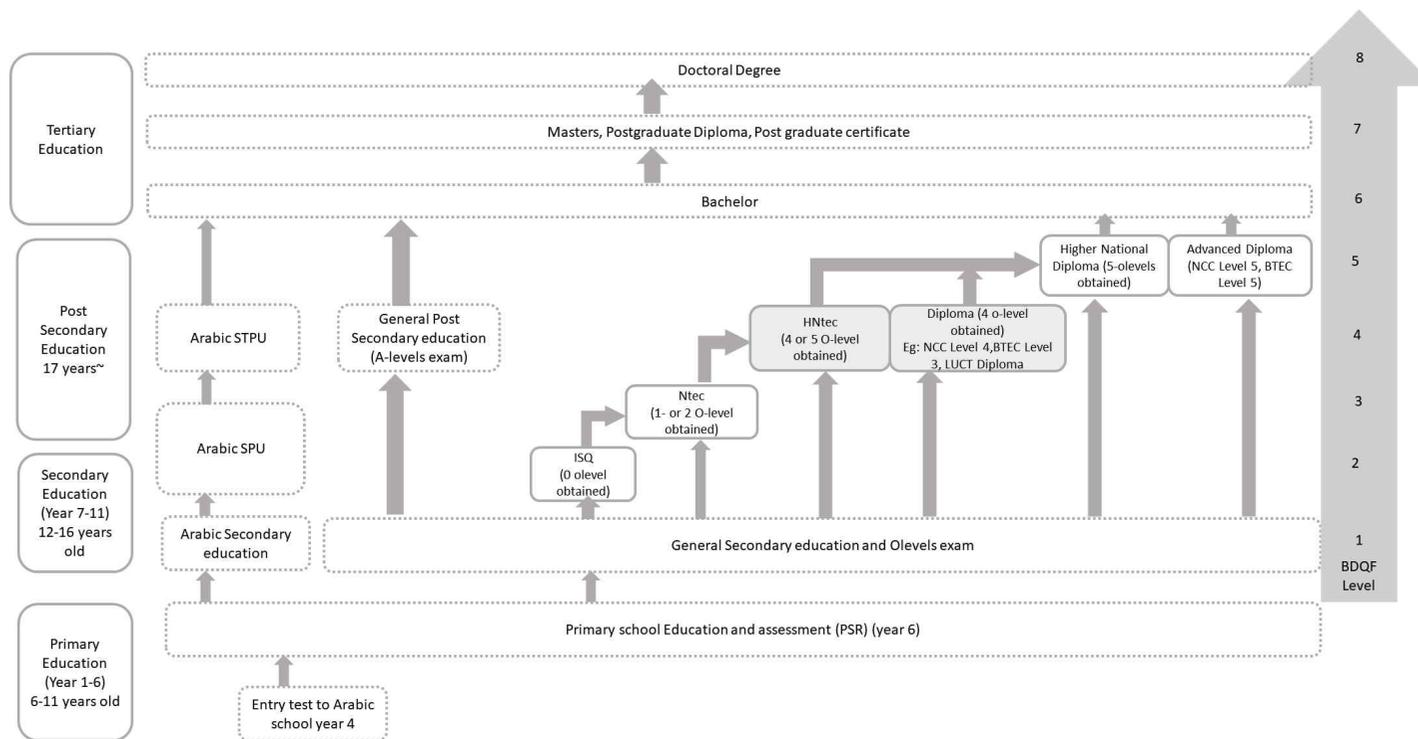
2. BDQF Level 4 and Post Secondary Vocational Students of Brunei

a. Structure of Post Secondary TVET Education in Brunei

In Brunei, majority of the students will undergo secondary education between the age of 12 to 16 years as well as the GCE O-levels examination which qualifies them to enter Post-secondary Education. As shown in figure II-1, after the O-levels exam and depending on the number of O-levels examination subject passed and their grades, students will have an option to pursue either academic stream of post-secondary education or called Pre-university education (GCE A levels qualification) where they will be required to attain at least 6 O-levels. If they obtained 5 o-levels and below, they could enter the TVET post-secondary education stream.

Post-secondary vocational education includes courses mapped at BDQF from level 3 to 5. This is denoted in figure II-1 with the unbroken box lines. This research will study post secondary vocational education students who are at BDQF Level 4 (denoted in figure II-1 as the shaded box) including Higher National Technical Certificate (HNTec) which is administered by the government; as well Business and Technology Education Council (BTEC) level 3 Diploma, Lim Kok Wing University of creative technology (LUCT) Diploma and National

Computing Council (NCC) Education Level 4 Diploma. which are administered by private institutions (Ministry of Education, 2013).



(Figure II-1) Brunei Education System and Brunei Darussalam Qualification Framework

Majority of TVET level 4 courses are provided by the Institute of Brunei Technical Education. Among their campus, the Business School was formed in 2005 to provide business-related education and training programmes. This illustrates the response shown by the TVET sector for the increasing demand of education and training programmes in the business field which was usually one of the highly desired course after O-levels. Additionally, through its Business Incubator Programme, the school also took in the role as an Enterprise Development Centre that caters to the graduates of the Brunei Darussalam Technical and Vocational Education Council (BDTVEC) programmes who wants to pursue an entrepreneurial career (Ministry of Education, 2013). BDTVEC however, is officially dismissed as of 2020.

It is important to note that entrepreneurial education is not formally provided as part of a compulsory module for in all TVET majors but in recent years the Ministry of Education has realigned the Technical and Vocational Education system to support the Brunei Vision 2035. This includes the promotion of close collaboration with industries with the aim to produce “*skilled and competitive workforce who are entrepreneurial, possess the appropriate qualifications, industry accredited skills, professional and highly employable*” (UNESCO, 2018, pg 8). To improve the employability of students in Institute of Brunei Technical Education (IBTE) 68 local companies was included in its apprenticeship program through a memorandum of understanding in 2017 (Othman, 2019). It is through the opportunities to attend short term entrepreneurial courses and the exposure to work in local companies, such as those in the apprenticeship programs, that entrepreneurial skills were aimed to be nurtured.

Thus, these has shown the importance of studying about the attributes related to entrepreneurship, career aspirations of students in post secondary TVET and to contribute to the policy implication on how the post secondary education can achieve its aim of creating an “*workforce who are entrepreneurial*” in Brunei.

b. Entrepreneurship Education and Policies in Brunei

At the national level, the Ministry of Education (MoE) had introduced ‘*Sistem Pendidikan Negara Abad Ke-21*’ (SPN21) or in English known as ‘National Education System for the 21st Century’ which emphasizes learning based on individual needs (Hamdan and Masri, 2015). This new framework, is sets apart from the educational policies that has been in placed for the last 20 years, and puts forward an emphasis on knowledge acquisition and application (Ministry of Education, 2013).

In the National Education System for the 21st Century, Entrepreneurship skills is one of the required skills in the SPN21 Curriculum and Assessment Framework that aimed to meet the MoE strategic plan initiative on quality education (Ministry of Education SPN 2013, pg 24). Entrepreneurship is considered as a value-added transferable skills which is to be integrated across all curriculum (Ministry of Education SPN 2013, pg 44). Specifically, school curriculum are expected to “*foster awareness the importance of entrepreneurial values; instil entrepreneurial traits of honesty and trustworthy; learn basic entrepreneurial skills and manage financial records and resources; acquire knowledge about financial planning; and inculcate positive attitude towards the*

practice of saving money” (Ministry of Education SPN 2013, pg 59)

These objectives are either achieved through subject-based, which is assimilated into school subjects; or through activity-based approach, whereby students will have the hands-on experience of performing business activities on their own (Hamdan and Masri, 2015).

At secondary education or high school level, there is an ongoing debate about when entrepreneurship education should be introduced to students. Some researchers have proposed that entrepreneurship education should start as early as possible, as the earlier schools start instilling entrepreneurial values and thinking in young people, the more effective the results will be. (Paço et al., 2011; Pihie, & Bagheri 2010; Kourilsky and Walstad, 1998, Wilson, Kickul and Marlino, 2007). Early formal entrepreneurship education affects the attitudes of students, influencing their direction of future career, and affect their tendency to venture into entrepreneurship in adulthood (Paço et al., 2011). Kourilsky and Walstad (1998) indicate that the very early stimulus of entrepreneurial attitudes, even before high school, can encourage students to choose entrepreneurship as a career option. Students should be guided and prepared for their future career as literature suggest that adult form their career expectations and intentions during their teenage years (Pihie, & Bagheri, 2010; Wilson, Kickul & Marlino, 2007).

According to SPN21 acquiring knowledge in entrepreneurship starts year 9 to year 10/11 which is at highschool level. In this stage of formal education learners should master learning areas in general education, consolidate life skills/basic employment skills, development of aptitude and interests, personality, attitudes and values, and develop talents and interests to: strengthen the skills of

lifelong learning; strengthen the mastery of science, mathematics, languages and other areas to prepare them for pre-vocational and higher education; develop an understanding of the career pathway available in the job market either in government or private sectors; acquire knowledge in entrepreneurship; and strengthen their interest and appreciation of culture and arts. (SPN, 2013, pg 52).

Other entrepreneurship development initiatives in Brunei have been in existence for quite some time. Initially, most of the entrepreneurship trainings and incubations were provided by various government agencies such as 'LiveWIRE', Another effort in developing entrepreneurship culture in Brunei is iCentre under joint cooperation between BEDB, the Authority for Info-communications Technology Industry of Brunei Darussalam (AITI) and BIBD (Bank Islam Brunei Darussalam) which conducts business plan competition the 'IGNITE Entrepreneurship Challenge' and is an incubator for the start-up. Ministry of Education Brunei conducts programme known as BEES involves the ministry, a company and the university. (Sulaiman, 2014).

There are several entrepreneurial initiatives developed by the Bruneian government, which are accessible to vocational high school students in general. These initiatives were developed to improve ecosystem for entrepreneurship (Polsaram et al, 2011) including Youth Skills Development Projects, Village Enterprise Financial Grants, Promising Local Enterprise Development Scheme (PLEDS) projects and creating institutes that focuses specifically on easing Entrepreneurship for youth such as Darussalam Enterprise, DARE (OECD Development Centre, 2014). However, most of these institutions and programs efforts focus on only on improving the ease of doing business by providing

grants and consultation on business administration and legal matters, and financing of businesses in Brunei instead of instilling the required entrepreneurial skills through various means of entrepreneurship education. Moreover, as the culture of entrepreneurship is still in its infancy stage, most of these programs targets the starting up or expansion of Small and Medium Enterprises, rather than trying to expose entrepreneurship experience from secondary school level.

c. Labour Force Indices of Technical and Vocational School Graduates in Brunei

In general, the Labour Force Participation Rate (LFPR) of Brunei Darussalam is about 62.7% as of 2017. The overall unemployment rate for Brunei had rapidly increased from 6.9% in 2014 to 9.3% in 2017 (International Labour Organization, 2014; Department of Economic Planning and Development, 2017), whereby youth aged 15 to 24 consist of 28.9% of the unemployed (Department of Economic Planning and Development, 2017, pg 3).

Technical and vocational school graduates make up about 16.5% of the total unemployed population in 2017, while the highest proportion are secondary school graduates which make up about 62.6% of the total unemployed population (refer to Table II-1). Similarly, technical and vocational school graduates consist of about 20.9% of the total youth unemployment rate. As Brunei ranks first in the highest unemployment rate in the South East Asia Region, it has since become the nation's priority to solve the issue of unemployment through various means including entrepreneurship. While there is no specific studies that identify the causes for unemployment of vocational school graduates; in general, the persistently high and increasing unemployment rates among youth contributed by their unwillingness to accept lower wages job, persistent challenges in industrial diversification and the lack of robustness in the private sector (Razak, 2012). The challenges in achieving economic diversification, on the other hand is persistent as there is a considerably small market size for businesses to flourish, a small pool of skilled workers as well as a lack of entrepreneurial skills (Siddiqui & Athmay, 2012).

<Table II-1> Technical and Vocational School Graduates in Relation to Labour Force Indices

Labour force indices	Definition and Measurement	Proportion in relation to the total population (%)		*Proportion of Technical and Vocational graduates in relation to the rates (%)		Proportion of secondary school graduates in relation to the total (%)	
		2014	2017	2014	2017	2014	2017
Labour Force Participation Rate	LFPR is defined as the ratio of the labour force to the working age population (15 years and over), expressed as percentage:	65.6		62.7		proportion by educational attainment not measured	
Unemployment Rate	The unemployment rate is defined as the ratio of the unemployed population to the total population in labour force (employed + unemployed), expressed as percentage:	6.9	9.3	13.3	16.5	66.2	62.6
Long term underemployment	the long term unemployment rate – measured as the sum of all those unemployed for longer than a year as a percentage of the labour force	3.7		4.4		proportion by educational attainment not measured	
Time-Related Underemployment as a percentage of total employment	This indicator relates to the number of employed persons whose hours of work in the reference period are insufficient in relation to a more desirable employment situation in which the person is willing and available to engage.	6.5		10.7		proportion by educational attainment not measured	
Youth	The youth unemployment	25.3	28.9	17.6	20.9	69.3	65.4

Unemployment	rate is defined as the ratio of the youth unemployed population to the total youth population in labour force (youth employed + youth unemployed), expressed as percentage:						
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*The Technical and Vocational Graduates included in the census may include those graduating from (Institute of Brunei Technical Education (IBTE) high schools and Ministry of Youth Culture and Sports (MYCS) Youth Skill Centre.

Source: Adapted and modified from several sections in Department of Economic Planning and Development Homepage, (2017)

d. Trends in Post Secondary Vocational Graduates Employment Choice

The mission of the Institute of Brunei Technical Institute (IBTE), which oversees seven post secondary vocational campus in Brunei, is to “*produce highly skilled and employable graduates that meet the stakeholders’ expectation through holistic learning environment*”. Hence, IBTE conducts the Graduates Unemployment Survey annually to investigate the outcomes of the graduates, six months after their convocation focusing on two performance indicators: employability rate and employers satisfaction rate. The percentage of post secondary vocational graduates who venture into entrepreneurship is less than 3% every year, while the unemployment rate stays above 20% since 2015. The proportion of graduates entering employment has increased since 2015 while, the percentage of graduates who further their studies are gradually decreasing since 2015 (IBTE, 2018). According to the survey conducted in 2018 on 1613 students who graduated in 2017, among those who are employed, only 1.9% are

self-employed, while about 11.9% works in government and 86.2% works in private industry (refer to table II-2).

These trends may incite several scholarly inquiries and investigation into the factors that may determine the career choice and entrepreneurial intention for the students, the causes for the low self-employment rate and the ways to promote entrepreneurship as a career choice in the Bruneian context.

<Table II-2> Table of Post Secondary Vocational Graduates Destination

Year	No. of Graduates (N)	Graduates respondents (n)	Graduate destination (%)			Employment Related Destination (% of employed graduates)		
			Employed	Further Study	Unemployed	Government	Private	Self Employed
2019	1537	1438	43%	21.6%	35.5	7.6	89.5	2.9
2018	1776	1613	51.8	24.0	24.2	11.9	86.2	1.9
2017	2064	1932	38.2	33	28.8	12.6	85.0	2.4
2016	2177	1957	41.3	37.7	21.0	11.0	86.3	2.5
2015 Sept	2326	2158	40.7	38.7	20.5	13.7	84.5	1.7
2015 Jan	1013	1013	37.9	34.6	18.3	14.3	83.1	2.6
2014	854	854	43.3	35.9	18.7	12.4	79.2	1.1

Source: Adapted from IBTE (2019, 2018, 2017, 2016, 2015a, 2015b, 2014) Graduate Unemployment Survey.

e. Educational Attainment Status of Most Business Owners

Currently, the records from Registration of Company (ROC) or from the Department of Planning and Development (DEPD) of Brunei only shows the key

statistics of business sizes but there is no specific statistical datasets that maps the educational attainments of the enterprise owners. Hence, it is difficult to understand the current proportion of business owners whose highest educational attainment is at vocational high school. However, according to the survey on status in employment conducted by the Department of Planning and Development (2017), individuals that engage in businesses could be categorised as “Employers” or as “Own account workers“. Hence, it could be implied that owners of entrepreneurial ventures may fall into these 2 categories. The highest proportion of the employer’s highest educational attainment is secondary level and similarly, the highest proportion for those who are own account workers are also from secondary level. As of 2017, employers with technical and vocational education level makes up only 12.9% and own account workers make up only 6.5% of the total population.

These trends implies that in Brunei, the a majority of enterprise owners are not those who graduate from tertiary education, but rather from secondary level education, thus strengthening the need to study about entrepreneurial intention from a secondary level.

<Table II-3> Proportion of Technical and Vocational School and Secondary Graduates as Employers or Own Account Workers

Status in employment	Definition	Total no. of individuals (and percentage) in relation to the total population		*Total no. of Technical and Vocational graduates (and percentage) in relation to the total number		Total no. Secondary school graduates (and percentage) in relation to the total	
		2014	2017	2014	2017	2014	2017
Employers	A person who runs a business on his own or in partnership and engages at least one paccessibility employee on a continuous basis in operating the business.	7009 (3.7)	5267 (2.8)	638 (9.1)	679 (12.9)	3731 (53.2)	2991 (56.8)
Own Account workers	A person who runs a business on his own or in partnership and engages at least one paccessibility employee on a continuous basis in operating the business.	7795 (4.1)	10727 (5.7)	551 (7.1)	699 (6.5)	4323 (55.5)	6806 (63.4)

*The Technical and Vocational Graduates included in the census may include those graduating from (Institute of Brunei Technical Education (IBTE) high schools and Ministry of Youth Culture and Sports (MYCS) Youth Skill Centre. **Source:** Adapted from the Department of Economic Planning and Development Homepage, (2017)

f. Barriers in Promoting Entrepreneurship through Education

Although there has been extensive policies and programs developed to promote entrepreneurship, entrepreneurial learning is still not evident in all levels

of education emphasizing the need to expand entrepreneurial learning within the structure of national education in Brunei. (OECD/ERIA, 2018). According to a survey on the Entrepreneurship ecosystem of 4 countries in ASEAN including Brunei (Polsaram et al, 2011), around 76% of SME owners stated that capacity building and skill building is needed for their employees, especially in management, finance, personal development, marketing, sales, production and operations. Moreover, Brunei ranks 53 out of 137 in the Global Entrepreneurship Index (Acs, Szerb & Lloyd, 2018, pg 50), whereby the lowest component scores was process innovation at 9% and startup skills at 15%. This indicates that businesses in Brunei are unable to use new technology and access to high quality human capital in STEM field, and most individuals lack of necessary skills to start own business.

On the other hand, policies regarding startups of Micro SME or SME has only been recently developed following the economic recession in 2014 (OECD Economic Research Institute for ASEAN and East Asia, 2012). Despite these policy reforms, there is currently still no legal SME definition in Brunei Darussalam. The commonly accepted classification of firm size is according to the number of employees as used by Department of Statistics in their census. The classification for SME is relatively low compared to OECD countries and this may potentially cause some enterprises to be excluded from these various programs.

To improve such situation, Brunei Darussalam has implemented a number of reforms to promote entrepreneurial education and entrepreneurial skill enhancement under Dare initiatives, however, according to OECD (2018) the

country needs to establish monitoring mechanisms and foundations to develop a national entrepreneurial education system. The development of entrepreneurial mindsets is generally regarded as a long term process, and for this reason the European Commission identifies entrepreneurship as one of eight key competencies that should be targeted in lifelong learning programmes.

A study on agripreneurs in Brunei (Musa, Idris and Basir, 2020), noted several institutional barriers promoting entrepreneurship in Brunei, In particular, there is a difficulty in accessing finance for starting up businesses on the grounds that there is an absence of a capital market and a stock exchange, as well as the hindrance due to lack of infrastructure and technology substitution in many institutions.

<Table II-4> Entrepreneurship Related Programs Target Groups and the Types of Services and Activities

Implementing agency	Name of Program	Target group	Types of Service or Activities			
			Financial Accessibility (grants or loans)	Consultation/Legal Advice	Mentoring	Skill building workshops
Ministry	Youth Skills Development Programme (YSDP)	SME	•		•	•
	Brunei Entrepreneurship Education Scheme (BEES)	Enrolled Secondary Students				•
	Village Enterprise Financial Grant	SME	•			
	Enterprise Expansion Programme (EEP):	SME				
	Loan schemes by the Ministry of Industry and Primary Resources (MIPR):	SME	•			
	Standards and Quality Certification Programme (MIPR)	SME/ME/LC				
Government Authority	ICT Competency Programme	SME				•
	Promotion and marketing services of Authority for Info-Communications Technology Industry (AITI)	SME		•		
	BEDB/AITI The future fund					
	BEDB Promising Local Enterprise Development Scheme (PLEDS):	SME/ME/LC	•			•
	BEDB Enterprise Technical Assistance Scheme (ETAS):	SME/ME/LC	•			
Academic Institution	Training and Employment Scheme (SLP):	SME/ME/LC	•			
	Opportunity Centre	SME		•		
	University Brunei Darussalam 'Success Weekends'.	K-12 (Year 1 to Year 12) and Tertiary students		•		•
Civil society organization/ Social Enterprise/Networks	IBTE Entrepreneurial Development and Guidance (IBTE EDGE)	Vocational Students			•	•
	Junior Achievement Brunei	Enrolled K-12 (Year 1 to Year 12) and Tertiary students			•	•
	Brunei Mentors for Entrepreneurs Network	SME		•	•	
	Young Entrepreneurs Association Brunei	Enrolled Secondary School/Tertiary students/ SME		•	•	

Source: Derived from OECD Development Centre, (2014 Pg 7); ASEAN Secretariat Jakarta (2015); University Brunei Darussalam Homepage (2019)

This part of the literature review seeks to establish the conceptual, operational and instrumental definition of entrepreneurial intention founded based on the basis of theoretical and empirical studies.

3. Concept and Measurement of Entrepreneurial Intention

a. Concept of Entrepreneurial Intention

Entrepreneurial intention, despite being phrased in various ways as shown in table II-5, essentially refers to the state of mind or process of thoughts which an directs the individual to put an effort into achieving the goal which is to set up a new business venture in the future. The decision to start a business venture involves intentional planning and a thinking process (Autio et al., 2001) and thus, is an intentional behaviour. Prior to the creation of a new legalized business entity, the entrepreneurship process consist of two major stages which is firstly, the development of the entrepreneurial intention and secondly, a gestation stage when they become a nascent entrepreneur who initiates business activities (Zapkau et al., 2015).

<Table II-5> Definition of Entrepreneurial Intent

Author	Definition
Song Eun Jeong (2018)	Intention to create a new independent organization and system in the future for the creation of new value

Cho, Y. J., & Lee, B. Y. (2016).	Planning to start a business in the future
Rusu (2015),	Any attempt at new business or venture creation, such as self-employment, a new business organization or the expansion of an existing business, by an existing business, an individual, a team of individuals, or an established business
Moriano, Gorgievski, Laguna, Stephan, & Zarafshani, (2012, p. 165).	The conscious state of mind that precedes action and directs attention toward entrepreneurial behaviors such as starting a new business and becoming an entrepreneur
Thompson, (2009, pg676)	A self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future. [However] that point in the future might be imminent or indeterminate, and may never be reached.
Krueger et al (2000)	The intention to start one's own business within five years after finishing university.
Boyd & Vozikis, (1994, pg 66)	Processes of thought that configured with a both rational thinking or analytical thinking (planned goal-directional behavior) and intuitive thinking (vision)
Bird (1988, pg 442)	Entrepreneurial intentions can be defined as a state of mind directing and guiding the actions of individuals towards the development implementation of new business concepts

This first stage or “entrepreneurial intention” stage have been used interchangeably with the term “self-employment intention” (Akmaliah & Hisyamuddin, 2009; Douglas & Sheperd, 2002; Tkachev & Kolvereid, 1999; Walter, Parboteeah & Walter, 2013). This is due to the understanding that entrepreneurial activities is one form of self employment. Self-employed refers to an individual operating businesses either as a sole proprietorship, partnership or limited partnership and data on self employment is usually used as proxy to study entrepreneurial activity, where such direct data sets are not available (Bjuggren, Johansson & Stenkula, 2010). Additionally, Pedersini & Colleto (2009)

define self employment as a work when “*wages directly depend on the profit or future profit gained from goods produced or services provided.*” However, this study will not use the term self-employment interchangeably with entrepreneurial intention, as the entrepreneurial process is much more complex and dynamic.

Although scholars acknowledge the complexity of an entrepreneurial process, most definitions of entrepreneurial intention in literature are general and unidimensional as they do not take into account the separate concepts of intention and entrepreneurial scope (table II-5). To further explore this, a separate concept of intention and entrepreneurship is reviewed in table II-6. In literature, there is no fixed definition that is agreed upon for entrepreneurship, resulting from the argument that there are no fixed boundaries or a defined focus being used when describing the concept (Bruyat & Julien, 2001; Ireland & Webb, 2007). However, through the review of past literature, it could be observed that the definitions may orient to 3 different focuses (refer to table II-6). Firstly, some researchers view entrepreneurship as the creation of new wealth and opportunities such as creating new products, processes and markets (Ireland, Hitt, and Sirmon 2003, pg 27; Cantillon, 1732, as cited in Minniti & Lévesque, 2008); secondly, others strictly view it from a firm or organization creation perspective (Bygrave and Hoffer, 1991; Carton, Hofer & Meekins, 1998; Dobrev & Barnett, 2005; Thornton, 1999). Thirdly, some researchers incorporate both the aforementioned concepts and acknowledge that entrepreneurship is the process of creating new opportunities within the context and realms of an organization (Rusu, 2015; Sharma and Chrisman, 1999).

<Table II-6> Definition and Scope of Entrepreneurship

Focus	Levels of analysis	Author	Definition
Creation of new wealth and opportunities (products, processes, and markets)	Individual	Richard Cantillon, 1732 (as cited in Minniti & Lévesque, 2008, pg 603).	A willingness to carry out forms of arbitrage involving the financial risk of a new venture
	Individual	Ireland, Hitt, and Sirmon (2003, pg 27)	Identification and exploitation of previously unexploited opportunities
	Individual	Shane and Venkatamaran (2002)	Identification and exploitation of business opportunities within the individual–opportunity nexus
Creation of new firms and organizations	Groups/Organization	Dobrev & Barnett, (2005, pg 434)	One’s ability to pursue a creative idea within the context of an existing organization—to mobilize resources in support of its development, and ultimately to bring it to fruition—is invariably affected by features of the organizational context
	Groups/Organization	Thornton (1999, pg 20)	Creation of new organizations which occurs as a context-dependent, social and economic process
	Groups/Organization	Carton, Hofer & Meeksm (1998, Pg 5)	The pursuit of a discontinuous opportunity involving the creation of an organization
	Groups/Organization	Bygrave and Hoffer (1991)	Functions, activities and actions associated with the perceiving of opportunities and the creation of organizations and these has two components which is the implementation of the action, and the agent carrying out the action.
Creation of new wealth and opportunities + Organizational	Groups/Organization	Sharma and Chrisman (1999, pg 13)	Acts of organizational creation, renewal, or innovation that occur within or outside an existing organization
	Individual /Groups/Organization	Rusu (2015, pg 37)	Any attempt at new business or venture creation, such as self-employment, a new business organization or the expansion of an

firms			existing business, by an existing business, an individual, a team of individuals, or an established business
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This disagreements on a fixed concept of entrepreneurship is further aggravated by the usage of the terminology in various levels of analysis in past studies, which may vary from individual level, group or whole organizations (Lumpkin and Dess, 1996, pg 138). This shows that entrepreneurship is concerned mainly in two aspects: creating changes in the individual entrepreneur and creating new values such as new wealth, opportunity or firms. Moreover, opportunities are not created by the entrepreneur alone but rather it is a combination of the source of technology, political or socio demographic and changes in the environment that create a room for entrepreneurial opportunities (Sørensen, Lassen & Hinson 2007). The definition of “entrepreneurial opportunities” have been reviewed by Davidsson (2015).

However, the degree to this changes or value creation can vary. Bruyat & Julien, (2001) proposed four types of entrepreneurship types based on the level of innovation involved which is entrepreneurial reproduction, entrepreneurial imitation, entrepreneurial valorization and entrepreneurial venture. Entrepreneurial reproduction involves little new learning for the entrepreneur and little value creation such as creation of a classic restaurant by a chef who has worked in a similar environment. Entrepreneurial imitation is a similar case whereby there is no significant value creation in the market, however, the entrepreneur creates significant changes in their learning or in the organizational managements. Entrepreneurial valorization involves an expert or a well-read person in a

particular field creates a high value creation, but since he is used to the field, there is no significant learning for the person. In the context of Brunei, the example would be creation of Smart Coating Technologies which was a patented product created by the university graduate students (Universiti Brunei Darussalam, 2021). Meanwhile entrepreneurial venture, which is one of the most ideal final product, involves a high innovation level and the product or service creates major changes in the environment or in the economic sector (Bruyat & Julien, 2001). An example would be creation of Apple technologies which changes the way the society lives and contributes to the digitization.

On the other hand, Intention in layman terms refer to the “*determination to act in a certain way*” (Merriam Webster Dictionary, 2019). According to Warshaw and Davis (1985), although there are numerous studies on intention by social psychologist, most of these researches do not define the construct with clarity. There are several theories that grounds the study of intention to behaviour or actions. One of the earliest theories of intention is the theory of intentional action by Lewin (1951), which states that intention is divided into three phases which is firstly the motivational processes, the decision to act on these motivation and the implementation of the intended action. Although, some intentional behaviour are initiated through choice as an expression of oneself which means these are self-determined or autonomous intention but some intentional behaviors are pressured by external psychological and environmental factors and these are termed as controlled intention (Deci and Ryan, 1987). Most definition on intentions are based on self-determined intention.

Similar to as how Lewin (1951) divides in construct into 3 phases or basis,

several definitions of self-determined intentions in past literature were analysed for the dimensions or phases of the construct. Table below summarizes the existing theories and definition of intention to date.

<Table II-7> Theories and the Definition of Self Determined Intention in Past Literature

Dimension	Theory or model	Definition	Construct basis
Multistaged/ Multidimensional on concept	Theory of intentional action (Lewin, 1951, as cited in Bagozzi, 1992 pg. 1988)	<p>“Intentional actions are usually considered the prototype of all acts of will...[Intentional action’s] first phase is a motivational process, either a brief or a protracted vigorous struggle of motives;</p> <p>the second phase is an act of choice, decision, or intention, terminating this struggle;</p> <p>the third phase is the consummatory intentional action itself.” Lewin (1951, as cited in Bagozzi, pg 1988)</p>	<ul style="list-style-type: none"> ▪ motivation ▪ intention ▪ implementation of action
	Model of action phases (Gollwitzer, 1990) Developed following Lewin (1926).	<p>“The goal state or desired outcome specified by the wish thus becomes an end state that the individual feels committed to achieve. The model describes this sense of obligation in stating that the individual has acquired a ‘goal intention.’” (p. 57)</p>	<ul style="list-style-type: none"> ▪ Goal intention
	Theory of intentional control (Heckhausen and Beckmann, 1990)	<p>“Even everyday experience shows that actions are controlled by intentions (goals pictured in the mind's eye) that continuously direct ongoing behaviour...The highest level consists of intentions in relation to the consequences of an action outcome. The middle level comprises intentions concerning the pursued end states of actions. These higher level intentions may be referred to as ‘goal intentions.’ Intentions at the third</p>	<ul style="list-style-type: none"> ▪ Goal intentions ▪ Implementation intentions (arrival of appropriate opportunity)

		and lowest level are referred to as instrumental intentions (<i>referred to as implementation intention in pg 38</i>) ' because they are directly connected to an action...After a goal intention has been formed, its enactment must frequently await the arrival of an appropriate opportunity or the completion of other pressing matters." (pp. 36–37)	
	Volitional models of goal directed behaviours (Bagozzi, 1992)	"To discover an important class of actions and outcomes when attitude theory needs refinement, it is useful to consider three species of intentions. The first two-present-oriented and future-oriented intentions-apply to actions proper, whereas the third — the goal-directed intention — addresses outcomes toward which one strives." (p. 194)	<ul style="list-style-type: none"> ▪ goal directed intention ▪ action intention
Unidimensional	Theory of planned behaviour (Ajzen, 1991)	"Intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behaviour." (p. 181)	<ul style="list-style-type: none"> ▪ motivation or willingness
	Theory of reasoned action (Fishbein and Ajzen, 2010)	"intention to refer to readiness to engage in a behavior, a construct that incorporates such concepts as willingness, behavioral expectation, and trying." (p. 43)	<ul style="list-style-type: none"> ▪ Readiness, willingness, behavioral expectation, and trying." (p. 43)
	Theoretical domains framework (Cane, O'Connor, and Michie, 2012)	"Intentions is concerned with the resolve to initiate or terminate a behaviour." (p. 12)	<ul style="list-style-type: none"> ▪ Resolve/Determination
	Atkinson (1964)	Determination to engage in a particular behaviour	<ul style="list-style-type: none"> ▪ Determination

	Theory of interpersonal behaviour (Triandis, 1980)	[Intentions are] instructions people give to themselves to behave in certain ways.” (p. 203)	
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Source: Table adapted and recategorized from Rhodes and Rebar (2017)

According to some scholars (Ajzen, 1991; pg181; Atkinson, 1964; Conner & Armitage, 1998, pg 1430; Cane, O’Connor and Michie, 2012; Fishbein and Ajzen, 2010; Galvão, Marques & Marques, 2018, pg721; Triandis, 1980), it generally refers to the state of mind or an individual’s willingness to put a conscious effort toward a specific goal or a path in order to achieve something or perform a certain behavior. Most of these scholars define intention as a singular dimension. It has also been mentioned that intention is also expressed as the function of attitude which links belief and behavior (Fishbein and Ajzen, 1975, pg 368). Past researches have shown that intentions are strong predictors of actual behaviour in other applied settings (Armitage & Conner, 2001; VanGeldereren et al. 2008). Intention models belong to the umbrella of social cognitive theory, proposed and developed by Bandura (1986), and the main principal is that individuals influence their own action.

Some researchers, however, have attempted in further conceptualizing intention with the argument that there is considerable gap between the intention formation and the implementation of actual behaviour, which is not addressed by the current intention models. For instance, Dholakia and Bagozzi (2002) argued that although the intention is formed, factors such as lack of resources or presence of barriers may affect the implementation. Thus, they proceed to conceptualize intention similar to Bagozzi’s (1992) concept which is to divide

into 2 different components: goal intention and implementation intentions. Similarly, several earlier researchers conceptualize intention as a multi-dimension or a multistaged process, as seen in the theory of intentional action by Lewin (1951, as cited in Bagozzi, 1992); Model of action phases by Gollwitzer (1990); Theory of intentional control (Heckhausen and Beckmann, 1990) and the Volitional models of goal directed behaviours (Bagozzi, 1992).

Goal Intention means an individual intent to reach the 'behaviour' but does not guarantee the completion as they may fail to deal effectively with the self-regulatory problems (Gollwitzer and Sheeran, 2006). This phase corresponds to the motivational phase during which the person decides to act. Whereas, Implementation intention corresponds to the link between an intended goal directed behaviour and an anticipated situation and this is the volitional phase during which a person plans how she/he is going to make the decision becomes reality (Gollwitzer and Sheeran, 2006). People forming implementation intentions commit themselves to a plan as to when and where they intend to act. Verplanken and Faes (1999) additionally questioned on how do individual intend to act, in the idea of implementation intentions.

With regards to this, Schlaegel and Koenig (2014) mentioned that further researches on intention should identify more antecedents that may better explain how entrepreneurial intention is formed, apart from what is accounted for by the Theory of Planned Behaviour and Shapiro's Entrepreneurial Event Model. They proposed that the degree to which initial entrepreneurial intentions are formed and are transformed into behavior depends on complex processes which includes goal intentions and implementation intentions which was not covered in his

research. These research gaps call for a better understanding of how to improve the entrepreneurial intention concepts and models to represent the holistic entrepreneurial process (Fayolle and Linan, 2014).

Based on observation drawn from the review above as well as weighing the different limitations of various definitions, the term entrepreneurship in this research will orient towards the third focus which includes both the creation of new wealth and opportunities as well as organizational firms and considering that the target group is post secondary vocational students and the low level of Brunei industrial growth, and that entrepreneurship is view as a means for creating employment, this study will not limit the scope of entrepreneurship (Bruyat & Julien, 2001) to just high level of innovation or Entrepreneurial venture but will include the intention of creating businesses with low innovation or value creation.

To integrate the review of the concepts, constructs and the gap in the literature, study will view entrepreneurship according to that defined by Rusu (2015), which is *“any attempt at new business or venture creation, such as self-employment, a new business organization or the expansion of an existing business, by an existing business, an individual, a team of individuals, or an established business”*, and intention refers to readiness to engage in a behaviour and incorporates willingness, behavioural expectation and trying (Fishbein and Ajzen, 2010, pg 43).

Moreover, to fill in the literature gap, conceptualize intent as a construct of goal determination, a construct similar to Goal intention and incorporates Fishbein and Ajzen, (2010) willingness and behavioural expectation; and Action Planning,

a construct similar to Implementation intention and includes the ‘trying’ concept.

b. Entrepreneurial Intention Model

Through literature review, there are several models that had been developed to study Entrepreneurial Intention including Entrepreneurial event model (Shapero 1982), Theory of planned behaviour (Ajzen 1991), Entrepreneurial attitude orientation (Robinson et al. 1991), Intentional basic model (Krueger and Carsrud 1993), Entrepreneurial potential model (Krueger and Brazeal, 1994), Davidsson model (Davidsson 1995) and identified the Ferreira et al. (2012) Model of Entrepreneurial Intention applying psychological and behavioural approaches.

<Table II-8> Intent Models and Predictive Ability

Models	Predictors of Entrepreneurial intent	Studies on predictive ability of the models	
		Author	Predictive ability
*Ajzen's (1991) Theory of Planned behaviour	<ul style="list-style-type: none"> ▪ Attitudes outcomes of the behavior ▪ Perceived social norm ▪ Perceived behavioral control 	Krueger, Reilly and Carsrud (2000, pg 423)	Adjusted R ² = 0.350 (p< 0.0001)
		Gird & Bagraim (2008)	R ² = 0.279 (p< 0.001)
		Schlaegel and Koenig, (2013)	R ² = .28
*Entrepreneurial event model (Shapero 1982),	<ul style="list-style-type: none"> ▪ Interaction between initiatives ▪ Abilities ▪ management ▪ relative autonomy and ▪ risk 	Krueger, Reilly and Carsrud (2000, pg 424)	Adjusted R ² = 0.408 (p< 0.0001) *Higher R ² than Azjen model. And Every component is

			significant
		Schlaegel and Koenig, (2013)	R ² = .21
Entrepreneurial attitude orientation (Robinson et al. 1991),	<ul style="list-style-type: none"> ▪ Attitude Prediction achievement ▪ Self-esteem, personal control, innovation ▪ Reactions (affective, cognitive or conative); 	Robinson et al. (1991),	R ² > .70, p< 0.001 (on all subscale)
Intentional basic model (Krueger and Carsrud 1993),	<p>Based on Ajzen theory plus exogenous factors</p> <ul style="list-style-type: none"> ▪ Attitudes outcomes of the behavior) ▪ Perceived social norm ▪ Perceived behavioral control ▪ Exogenous factors 	Not tested	Not tested
Entrepreneurial potential model (Krueger and Brazeal, 1994)	Based on the previous models of Shapero and Ajzen, supporting their evidence from the corporate venture and enterprise development perspectives;		
Davidsson model (Davidsson 1995).	<ul style="list-style-type: none"> ▪ General attitudes (Change, Compete, Money, Achievement, Autonomy) ▪ Domain attitudes (Pay off, Societal, Contribution, Know-how) ▪ Current situation/personal background (employment status) 	Davidsson model (Davidsson 1995).	R ² = 0.51 (p< 0.0001)
An Integrated Model of Entrepreneurial Intent (Schlaegel and Koenig, 2013)	<ul style="list-style-type: none"> ▪ Attitude towards the behavior ▪ Subjective norm ▪ Entrepreneurial Self Efficacy ▪ Perceived behavioural control ▪ Perceived Desirability ▪ Perceived Feasibility 	Schlaegel and Koenig, (2013)	R ² = 0.31

<p>Model of Entrepreneurial Intent (Ferreira et al. 2012 pg 429)</p>	<ul style="list-style-type: none"> ▪ Behavioural Approach (Personal Attitude, Subjective Norm, Perceived Behavioural Control) ▪ Psychological Approach (Locus of control, propensity to risk, self confidence, Need for achievement, Tolerance of Ambiguity) 	<p>Ferreira et al. (2012 pg 429)</p>	<p>R² = 0.622</p>
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*Main Model (most other models are modification or adaptations of these two theories)
Source: Adapted from Ferreira et al. (2012 pg 429); Guerrero et al. (2008, pg 39), Schlaegel and Koenig, (2013); Davidsson (1995).

Amongst the theories presented above, Ajzen's theory of planned behavior (Ajzen, 1991) has been widely operationalized in past studies on entrepreneurship. The theory of planned behaviour has its roots in the theory of reasoned action (TRA), which was proposed by Ajzen and Fishbein, 1980; Fishbein and Ajzen (1975). This consist of behavioural intention which is affected by subjective norms and attitudes.

Another commonly used theory is the Shapero and Sokol's model of the Entrepreneurial Event (SEE) is an important theory in the research of entrepreneurial intentions. It has been referred to as an implicit intention model specific to the entrepreneurship domain (Krueger et al., 2000) due to the fact that when it was introduced, it was not explicitly proposed as an intention model, though it was quickly deemed and utilized as such in the literature. The models purported an explanation for the processes that lead to an entrepreneurial event, specially the launching a new venture (Kollmann & Kuckertz, 2006).

The model assumes that human behaviour directed by an inertia until an a

detrimental external force interrupts that inertia such as an abrupt job termination. Nevertheless, the interruption of the inertia could also be a result of a positive events such as obtaining funds or business grants. These interruptions trigger a change in behaviour and the victim is always forced to make decisions that seek the best opportunity available. (Krueger et al., 2000). According to Shapero, behaviour is dependent upon credibility and propensity to act whereby credibility demands behaviour to be both feasible and desirabl. In summary, the entrepreneurial event is viewed as a result of cultural, social and personal factors.

Developed using metanalysis of literatures using Ajzen theory and Shapero EEM, Schlaaegel and Koenig (2013) includes a variable desire as a mediating variable to the original determinants of Entrepreneurial intent. This was a response to the argument in prior researches which had argued that Ajzen Theory of Planned Behaviour and the Shapero's EEM constructs overlap due to the inclusion individual's willingness and capability constructs in the model.

Meanwhile, in another model of entrepreneurial intent which was applied to study secondary students, Ferreira et al (2012) incorporates Azjen's Theory of planned behaviour as part of their behavioural variables and several psychological characteristics which are related to entrepreneurship. The psychological constructs includes among others, propensity to take Risk and Innovativeness which impacts intention.

Another conceptual model of the entrepreneurial decision process (Franke and Lutjhe, 2004, pg 273), was applied on the research of business administration major students in university. In their model of entrepreneurial decision, internal factors such as wilingness to take risks, need for independence,

and locus of control and external factors such as market, financing, society, university (inspiration, training, networking) affect attitude towards self employment and hence intention.

Based on the review above, it is noted that entrepreneurial intention is formed through various internal psychological factors and external economic, social and cultural factors.

c. Measurement of Entrepreneurial Intention

In literature, many of the entrepreneurial intention concept is conceptualized into single construct variable such as pure behavioural intent which is based on general self-efficacy and controllability of a situation (Linan, Moriano and Jaen, 2016; Linan and Chen, 2009). However, there are entrepreneurial intention measures that are constructed based on their interest to be entrepreneurs (Zhao, Seibert & Hills, 2005).

<Table II-9> Measurement of Entrepreneurial Intention (EI)

Author	Target Group	Number of items	Scale	Scale reliability	Basis of development	Items
Linan, Moriano and Jaen (2016)	Adult with university Degree	5 Items	7 point scale	Cronbach's Alpha of 0.89	<ul style="list-style-type: none"> ▪ Pure intention measure based on general self-efficacy and controllability 	<ul style="list-style-type: none"> ▪ It is very likely that I will start a venture someday ▪ I am willing to make any effort to become an entrepreneur ▪ I have serious doubts whether I will ever start a venture ▪ I am determined to start a business in the future ▪ My professional goal is to be an entrepreneur
Cho, & Lee (2016)	University	6 items	5 point scale	Cronbach's alpha of 0.913	<ul style="list-style-type: none"> ▪ Based on Krueger(1993), Crant(1996), Liñán & Chen(2009), Davidsson(1995), Jeong & Cho (2013), Jin & Park (2014), Lee & Baek (2012). 	<ul style="list-style-type: none"> ▪ Currently I am working at a specific plan to start a business ▪ I have a clear plan to start a business in the near future ▪ I have experience in collecting start up information ▪ Currently I am receiving specific counseling or advice to start a business ▪ I have been thinking specifically about capital funds ▪ I want to start a business someday
Schenkel, D'Souza and Braun	University	3 items	5 point scale	Cronbach's alpha of 0.896	<ul style="list-style-type: none"> ▪ Based on Krueger et al (2000) but does not specify 	<ul style="list-style-type: none"> ▪ To what extent have you considered starting your own business? ▪ To what extent have you prepared to start your own business? ▪ How likely is it that you are going to start your own

(2014)						business in the next five years?
Top, Çolakoğlu, & Dilek (2012)	Vocational highschool	10 items	5-point likert scale	Cronbach Alpha is found as 0,88.	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ I become ready to be Entrepreneur. ▪ I follow good business opportunities and have ideas. ▪ I get necessary knowledge to manage my business. ▪ I try to get necessary skills to manage my business ▪ I believe that I will go to success by taking lessons from failures. ▪ I continuously learn about my business. ▪ I become sure that my project will hold on market. ▪ I become sure that my opinion will realize my targets. ▪ I become sure that my opinion will be successful. ▪ I am sure that one day I will set my business
Linan, Urban and Guerrero (2011)	University students	6 items	7 point likert scale	Cronbach's of 4 item (non negative) is 0.809	<ul style="list-style-type: none"> ▪ Similar to Linan and Chen (2009) but includes 2 items on reverse/negative question 	<ul style="list-style-type: none"> ▪ I am ready to do anything to be entrepreneur ▪ I will make every effort to start and run my own business ▪ I have serious doubts about ever starting my own business (Negative question) ▪ I am determined to create a business in the future ▪ My professional goal is to be an entrepreneur ▪ I have very low intention of starting a business (Negative/reversed question)
Pihie (2009)	University Student	11 items	5-point likert scale	Cronbach α value ranged between	<ul style="list-style-type: none"> ▪ Modification of previous instruments developed by several authors such as Ajzen and Fishbein 	<ul style="list-style-type: none"> ▪ I will choose a career as an entrepreneur. ▪ I prefer to be an entrepreneur rather than be an employee in a company ▪ I am prepared to do anything to be an entrepreneur.

				.74 and .96.	(1980), Kolvereid (1996), Krueger (2000), Chen, Green and Crick (1998), Zaccessibilityatol (1993), and Hassan (2007).	<ul style="list-style-type: none"> ▪ I'll make every effort to start and run my own business. ▪ I have thought seriously to start my own business after completing my study. ▪ I have a strong intention to start a business someday. ▪ I'm determined to create a firm in the future. ▪ I put effort to make more money. ▪ I want to be my own boss. ▪ I will start my business in the next 5 years. ▪ I will start my business in the next 10 years.
Linan and Chen (2009)	University students	6 items	7 point scale	Cronbach's alpha of 0.913	<ul style="list-style-type: none"> ▪ They mentioned that they use pure intention measure based on 6 items that measure "general self-efficacy" unlike other past researches and one measure that use "controllabiity" 	<ul style="list-style-type: none"> ▪ I am ready to do anything to be an entrepreneur ($\alpha=.654$) ▪ My professional goal is to become an entrepreneur ($\alpha=.839$) ▪ I will make every effort to start and run my own firm ($\alpha=.645$) ▪ I am determined to create a firm in the future ($\alpha=.914$) ▪ I have very seriously thought of starting a firm ($\alpha=.782$) ▪ I have the firm intention to start a firm some day ($\alpha=.856$)
Zhao and Hills (2005)		4 items	5 point likert scale (very little to a great	Cronbach alpha of 0.88	<ul style="list-style-type: none"> ▪ Based on interest to start a business. 	<ul style="list-style-type: none"> ▪ (Interest) How interested are you in starting a business in the next 5 to 10 years. ▪ (Interest) How interested are you in acquiring a small business in the next 5 to 10 years. ▪ (Interest) How interested are you in starting and building a high-growth business in the next 5 to 10 years.

			deal)			<ul style="list-style-type: none"> ▪ (Interest) How interested are you in acquiring and building a company into a high-growth business ▪
Rueda, Moriano & Liñán, (2015).	University graduate	4 items	7 point likert scale	composite reliability (rc) 0.96	<ul style="list-style-type: none"> ▪ Assesses the perceived likelihood of an individual to choose an entrepreneurial career. ▪ Developed based on Ajzen's (2006) methodological recommendations of how to construct a TPB questionnaire 	<ul style="list-style-type: none"> ▪ (Likelihood/general self-efficacy) 'It is likely that someday I will create a new business' ▪ (willingness) 'I am willing to make every effort to become an entrepreneur'
Chen, Green and Crick (1998)	Students and current business owners	5 items	5 point likert scale	Cronbach alpha of 0.92	<ul style="list-style-type: none"> ▪ Mixture of interest, self prediction or general self-efficacy and pure intention items 	<ul style="list-style-type: none"> ▪ (Interest) How interested are you in setting up your own business ▪ (Intention) To what extent had you considered setting up your own business, ▪ (Intention) To what extent had you preparing to set up your own business ▪ (Likelihood/general self-efficacy) How likely are you going to try hard to set up your own business ▪ (Likelihood/general self-efficacy) How likely are you to set up your own business

4. Variables Related to Entrepreneurial Intention

From a review both meta-analytical literatures and empirical researches (refer to Table II-10), it could be observed that the variables related to entrepreneurial intention could be categorized into four major categories. Firstly, variables related to perception of entrepreneurial behaviour including personal attitude, subjective or social norm, perceived behavioural control is commonly investigated in studies that uses the theory of planned behaviour as their ground basis (Bagheri & Pihie, 2014; Bhat & Singh, 2018, Entrialgo & Igleisis, 2016; Zapkau et al., 2015, Xu, Ni & Ye; 2016.

Secondly is psychological traits such entrepreneurial self-efficacy (Bagheri & Pihie. 2014; Chen, 2019; Şahin, Karadağ, & Tuncer, 2019; Shahab et al., 2019; Ladd, Hind, & Lawrence, 2019) locus of control, propensity to risk, self confidence, need for achievement, tolerance for ambiguity. In this category of variables, Aure (2018), in particular, have studied on how grit affects the entrepreneurial intention.

Thirdly is human capital related variables including work or labour experience, entrepreneurship education and prior entrepreneurial exposure (Entrialgo and Igleisis, 2016; Iakovleva, Kolvereid, and Stephen, 2011; Soria-Barreto et al., 2017; Volery et al. 2013; Zhang, Duysters, and Cloodt, 2013). Gorgievski, Stephan, Laguna and Moriano (2017) has also included entrepreneurial competencies and entrepreneurial knowledge in addition to entrepreneurial education as variables that affect entrepreneurial intention.

Fourthly, other related variables related to their social environment such as

age, country, creativity, school type and family background. The table below shows only recent entrepreneurial intention literatures between 2008 and 2019.

The studies of entrepreneurial intention has been conducted for a wide range of target group including secondary schools, university students, nascent entrepreneurs and employees. Among these studies, there are several researches that studies that investigates antecedents variables of Entrepreneurial Intention in Vocational Training students and this includes demographics, Individual traits, and set of skills acquired from business and/or entrepreneurship education. (Buli & Yusuf, 2018; Ni & Ye; 2018; Galvao, Marques & Marques, 2018).

<Table II-10> Variables Related to Entrepreneurial Intention (EI) in Recent Literatures (2019-2008)

Study	Type of study	Country	Target group	Theory	Related Variables			
					Perception on behaviour	Psychological Traits	Human Capital Variables	other variables
Chen (2019)	Empirical		U	SCCT	SN	ESE		EO
Shahab, Chengang, Arbizu, & Haccessibilityer (2019)	Empirical	China and Spain	U	TPB	PA	ESE	WEX, EE	EC
Şahin, Karadağ, & Tuncer. (2019).	Empirical	Turkey	U, W	Not mentioned		ESE, Big 5		
Ladd, Hind, & Lawrence, (2019)	Empirical	International	U	Not mentioned		ESE, EO		G. Country
Aure (2018)	Empirical	Philippine	S	TPB	SN	ESE, Big 5, Grit	,	
Zaremohzzabieh et al (2019)	Metaanalysis	Various countries	U, NA, W		PA, SN, PBC,, PD, PF	Big 5	EE	
Nowiński,et al (2019)	Empirical	Visegrad countries	U	Not mentioned	-	ESE	EE	G
Buli & Yusuf (2018)	Empirical	Ethiopia	VHS	TPB	PA, SN, PBC			
Ni & Ye (2018).	Empirical	China	VHS				EE, EK, EComp	
Gorgievski, Stephan, Laguna and Moriano (2017)	Empirical		U	TPB	PA, SN	ESE	Opennes,	

Soria-Barreto, Honores-Marin, Gutiérrez-Zepeda and Gutiérrez-Rodríguez (2017)	Empirical	Chile	U	TPB	PA, SN, PBC		, EE, Labour experience,	ST, G
Galvão, Marques & Marques (2018)	Empirical	Portugal	VHS	TPB	PA, SN, PBC		EE,	FB, G, A,ST
Bhat & Singh (2018)	Empirical	India	U	TPB	PA, SN, PBC		EE,	G,
Xu, Ni & Ye (2016)	Empirical	China	S	TPB	PA, SN, PBC	LC, OR, NA, IN	EE	
Entrialgo and Iglesias (2016)	Empirical	Spain	U	TPB	PA, SN, PBC		EE, WEX	FB, A,
Zapkau, Schwens, Steinmetz and Kabsz (2015)	Empirical	Germany	U, W	TPB	PA, SN, PBC		(Parent rolemode, WEX)	
Bagheri & Pihie (2014)	Empirical	Malaysia	U	TPB	PA, SN	ESE		
Bae, Qian Miao and Fiet (2014)	Metaanalysis	Various	U, S				EE,	FB
Mueller, Zapkau and Shwens (2014)	Empirical	Germany and Ethiopia	U	TPB	PA, SN, PBC		(Direct entrepreneurial experience, rolemodel)	
Zhang, Duysters, and Cloudt (2013)	Empirical	China		EEM/TPB	PD, PF		EE, ,	G, ST
De Clereq, Honig and Martin (2013)	Empirical	Canada	U	EEM				
Volery et al (2013)	Empirical	Switzerland	S		PD, PF,	NA, ESE, PR, IN	EK, EC,	G,A,

Espíritu-Olmos and Sastre-Castillo (2012)	Empirical	Spain	U			LC, TA, PR, EXT		G
Ferreira, Raposo, Rodrigues, Dinis and Do Paco (2012)	Empirical	Portugal	S	EEM	PA, SN, PBC,	LC, OR, NA, SC IN, TA,		
Lucas and cooper (2012)	Empirical	United kingdom	W	EEM/TPB	PD, PF, N	ESE		
Moriano et al (2012)	Empirical	6 countries	U	TPB	PA, SN,	ESE		
Shiri, Mohammadi, and Hosseini (2012)	Empirical	Iran	U	TPB,EEM	SN, PD			SS, RM
Lakovleva, Kolvareid, and Stephen (2011)	Metaanalysis		U		PA, SN		WEX	G, A,
Gird and Bagraim (2008)	Empirical		U	TPB	PA, SN, PBC,			

Target group: VHS Vocational High school, S Secondary, U University, NA Nascent entrepreneurs, W workers

Theory: SCCT Social Cognitive Career Theory. TPB Theory of planned behaviour, EEM Entrepreneurial Event

Perception of behaviour Variables: PA personal attitude, SN Subjective/Social norm, PBC Percieved behavioural control, PD, PF (percieved desirability, percieved feasibility)

Personal trait: N Necessity, LC locus of control, PR Propensity to risk, EXT Extroversion, SC Self confidence, NA Need for achievement, Big5- Big 5 personality trait, TA

Tolerance of ambiguity, IN innovativeness,

Human Capital Variables: EE Entrepreneurial education, EK Entrepreneurial Knowledge, ECom Entrepreneurial Competence, EC Entreprenrurial creativeness.

Others: FB (Family background, G Gender, A, Age, ST School type, WEX work experience, Prior entrepreneurial exposure, EO Expectation outcome.

According to Foyelle and Linan (2014), researches of entrepreneurial intention studies has 5 focus and these are firstly, researches which investigates the core entrepreneurial models, theories and methods; secondly, research that focus on personal-levels such as cognitive and mental schemas may form entrepreneurial intentions; thirdly, researches investigating into the relationship between entrepreneurial education and intention; fourthly, researches studying into how cultural context and national and regional institutions affect entrepreneurial intentions and fifth, researches that consider the intention- behaviour link. This means that majority research usually have the tendency to focus on investigating a narrow scope such as relationship of just psychological factors to intention; or study of national level policies to entrepreneurial intention.

This research will attempt to not only view personal or psychological variables such as self-efficacy and entrepreneurial orientation, but also to view their human capital variables which is entrepreneurial learning as well as other environmental factors which includes their national level policies and socio-cultural norms in the form of social support.

a. Entrepreneurial Learning

i) Concept of Entrepreneurial Learning

Learning is traditionally defined as a change in behaviour. (De Houwer, Barnes-Holmes, & Moors, 2013). Entrepreneurial learning is conventionally perceived as an individual level variable where an individual acquires and develops the skills and abilities or the tendencies needed to enter or grow a business venture (Preedy et al, 2020). This could also refer to the experiential process where the personal experience of an entrepreneur or a potential entrepreneur is transformed into knowledge, which in turn can be set to guide the choice of new experiences. However, experiences do not directly lead to entrepreneurial knowledge but gaining of new experiences and the development of new knowledge can rather be described as a process where experiences are transformed into experientially acquired knowledge (Politis, 2005).

In past literature, entrepreneurial learning could either be focused on experiential learning, social learning or self-directed learning components within the entrepreneurial education (Preedy et al, 2020) and this learning of entrepreneurial related knowledge can occur in various situations through 1) classroom instruction, 2) workplace learning and 3) self-directed learning.

For the case of instruction inside the classroom, entrepreneurial learning can occur through formal and direct entrepreneurial education programs and subjects; or embedded within the classroom instruction. In general, entrepreneurship education consists of *“any pedagogical [program] or process of education for*

entrepreneurial attitudes and skills” (Fayolle, Gailly, & Lassas-Clerc, 2006, p. 702; Bae et al. 2014, p. 219).

Linan (2004, pg 163) on the other hand, define entrepreneurship education as: *“The set of education and training activities, within the educational system or not, that tries to develop in the participants the intention to execute entrepreneurial behaviours, or some of the elements that affect this intention, such as entrepreneurial knowledge, the desire for entrepreneurial activity or its viability”*. Entrepreneurship education in Brunei is conducted formally through school organized workshops or seminars and informally through incubation projects and entrepreneurship at campus, entrepreneurship village, entrepreneurship day and business plan exhibition (Hamdan and Masri, 2015).

On general education levels, Brunei Darussalam has taken substantial steps towards formulating and implementing a more entrepreneurship-oriented education system as competencies related to entrepreneurship have been embedded within the SPN21 education system as a general transferable competency (OECD/ERIA, 2018). Brunei Darussalam has also developed National Entrepreneurship agenda (NEA), was developed in 2014, as a collaboration between Ministry of Education and University Brunei Darussalam whereby their initiatives include “success weekends” which provides students with exposure to challenges and games related to entrepreneurship and several transferable skills such as basic communication and teamwork.

One of the gaps in past research is that many studies looked at entrepreneurial learning through participation in formal entrepreneurship education and ignored role of extra curricular activities and impact on student learning

(Pittaway et al, 2011). According to Pittaway et al. (2011), summer schools, games, petitions, exchanges, mentoring, clubs and societies, workshop programs and business support programs could also be seen as part of extra curricular activities. Extra curricular workshop programs are usually formal and structured and is delivered by either the school or an external institute, while entrepreneurship societies and clubs could include informal and non-accredited student clubs whose which provides exposure to enterprising skills for students (Pittaway et al. 2011).

Most of the Entrepreneurship education programs in Brunei occurs outside of the classroom. According to Linan, (2004, there are four types of entrepreneurship education which is the entrepreneurial awareness education, education for startup, education for entrepreneurial dynamism and continuing education for entrepreneurs. If these categories were to be applied to EE programs in Brunei as in Table II-11, most of the current programs which are done during extra curricular activities are those which focus on entrepreneurial awareness Education and the education for start-up. However, there is less programs that focus on improving the competencies of entrepreneurs after the start up phase.

<Table II-11> Entrepreneurship Education Outside of Class and its Types

Types	Purpose	Mapping to EE programs in Brunei
Entrepreneurial awareness education	To increase the number of people having enough knowledge about small enterprises, self-employment and entrepreneurship, so that they consider that alternative as a rational and viable option.	<ul style="list-style-type: none"> ▪ Youth Skills Development Programme (YSDP) ▪ Brunei Entrepreneurship Education Scheme (BEES)

		<ul style="list-style-type: none"> ▪ University Brunei Darussalam 'Success Weekends' ▪ IBTE Entrepreneurial Development and Guidance (IBTE EDGE) ▪ Junior Achievement Brunei
Education for start-up.	To prepare participants to be the owner of a small conventional business, as are the great majority of all new firms. It would be centred on the specific practical aspects related to the start-up phase: how to obtain financing; legal regulations; taxation; and so on	<ul style="list-style-type: none"> ▪ BEDB Promising Local Enterprise Development Scheme (PLEDS): ▪ IBTE Entrepreneurial Development and Guidance (IBTE EDGE) ▪ Junior Achievement Brunei ▪ Opportunity Centre
Education for entrepreneurial dynamism.	To dynamic entrepreneurial behaviours after the start-up phase to increase the intention of becoming an entrepreneur, but also the intention of developing dynamic behaviours when the enterprise is already in operation.	<ul style="list-style-type: none"> ▪ ICT Competency Programme
Continuing education for entrepreneurs.	As an adult education to allow improvement of the existing entrepreneur's abilities	<ul style="list-style-type: none"> ▪ ICT Competency Programme

Source: Types and purpose adapted from Linan (2014)

Another program is the Junior Achievement (JA) program which is managed by an non-governmental organization which designed experiential learning programs, for entrepreneurship related skills, catered mainly for primary and secondary schools as part of their extra curricular activities.

On vocational secondary school level, IBTE has initiated an entrepreneurial experience programme called the IBTE Entrepreneurial Development and Guidance (IBT EDGE) which goal is to nurture the mind-set of students and graduates fully utilize their skills for business activities (IBTE, 2018).

Another program operated by the Entrepreneurship and Business Unit, Curriculum Development Department, Ministry of Education, called Brunei Entrepreneurship Education scheme (BEES) caters for secondary, vocational and technical students which allows participants to attain practical and realistic overview of the business life as well as to develop several important skills such as communication, teamwork and presentation (ASEM Education, 2018 pg 2).

Work based learning, on the other hand, in this study refers to the learning or skill gained through experiences in a work place. Researches show that prior work experience is an important source of human capital for entrepreneurs (Kim, Aldrich and Keister, 2006). Specifically, experiences to positively influences perceived behavioural control or self-efficacy as it allows the individual to obtain the necessary entrepreneurship related competences; as well as attitudes (Kautonen et al. 2010)

Direct experiences for post secondary education students includes going for internships in a small or newly founded firm as part of their experiential learning. Alpert et al (2009) shows that internship provide an experience of Learning by doing in a real business with guidance and supports. Small firm is able to provide an ideal work environment where people can comfortable share their experiences and knowledge and learn new skills especially in starting a business (Rotefoss & Kolvereid, 2005).

For most entrepreneurship students or students in Business major, internship is a requirement as they allow the students to better understand the connection between the study in the class room and real world experience (Dobratz, Singh and Abbey, 2015). For most students in BDQF level 4 in government school,

internship or experiential learning in the workplace is part of their curriculum and requirements to graduate.

ii) Measurement of Entrepreneurial Learning

There are several ways in measuring learning such as 1) measuring the learning time or the degree of participation the student has in entrepreneurial modules or 2) measuring the learning outcomes especially in perceived competencies gain through the entrepreneurial education. It is important to note that in entrepreneurial researches, there are many similar concept to entrepreneurial learning such as “entrepreneurial knowledge”, “entrepreneurial education”, “entrepreneurial competencies” and entrepreneurial skills“. Yet the measurements for these are similar to measurement of the learning mentioned above.

a) Measurement through Learning Time, Degree of Participation in an Entrepreneurship Program

According to Zhang, Duysters and Cloudt (2014), entrepreneurship education is measured 1 for students who plan to acquire such education, and to 0 for students with no such education and no plans to acquire it. According to, Bae et al. (2014), the commonly used instrument to measure entrepreneurship education is “*Did you attend any entrepreneurial theory course in the school?*” and “*Did you attend any entrepreneurial awareness or attitude course in the school?*” This is on a 2 point scale where 1 meant “no,” 2 meant “Yes“ Cronbach’s alpha was 0.910. Wilson, Kickul and Marino (2007) measure participation through a 2 scale

which is 1 for participation in entrepreneurial courses or 0 for participation in non entrepreneurial courses

However, Linan, Urbano and Guerrero, (2011) and Linan, Rodriguez Cohard, Rueda- Cantuche (2011) measures the influence of the specific modules that could be considered as entrepreneurship education and how it has helped them develop several aspects including knowledge about entrepreneurial environment, greater recognition about entrepreneur figure, preference to be an entrepreneur, necessary ability to be an entrepreneur and intention to be an entrepreneur.

b) Measuring as Learning Outcome as Perceived Competencies Gained Through Entrepreneurship Education

However, some have measured this based on the perceived competencies. For example, Kyndt and Baert (2015) had developed and validated the instrument to measure entrepreneurial competencies by testing on a sample of aspiring entrepreneurs in a variety of sectors in Finland. The 78 items developed were based on Lackéus (2013) categorisation of entrepreneurial competencies and these include perseverance, self knowledge, orientation towards learning, awareness of potential returns, decisiveness planning for the future, Independence, ability to persuade, building networks, seeing opportunities, insights into the market and social and environmentally conscious conduct. These were measured on a 6 point likert scale with following response options '1= never', '2=seldom', '3=sometimes', '4=often', '5=most of the times', and '6=always'.

On the other hand, Schelfhout, Bruggeman and De Maeyer (2016) had

developed and validated an instrument consisting of 11 subcompetences, including performance orientation, creativity, taking initiative, taking calculated risks, perseverance, leadership, communication skills, planning and organizing, decisiveness, collaboration, reflection. However, instead of using likert scale, they have used scaled behavioural indicators (from absent to expert competency) which was aimed at revealing the extent at which the respondent has mastered the competences. The items were tested on secondary education students aged 16-18. Only 21 items were retained after testing for its validity and its reliability. The reliability of the scale is measured using cronbach alpha is 0.78.

One of the more widely used questionnaire by Linan and Chen (2009) which is EIQ (Entrepreneurial Intention Questionnaire) measures entrepreneurial capacity of an individual which inquires respondents regarding their satisfactory level in the stated capacities to be an entrepreneur through 6 items, The questions include “*Do you think you have a satisfactory level in Opportunity recognition, creativity, problem solving, leadership and communication skills, development of new products and services, networking and making professional contacts*”. The items were measured on a 7 point likert scale from 1 (no capacity) to 7 (very high capacity) and these EIQ was tested on a sample of university students.

Mets, Kozlinkska and Raudsaar (2017) on the other hand summarised the entrepreneurial competences that makes up the learning outcomes of entrepreneurship education and these are divided into cognitive, affective and psychomotor, which is in accordance to Bloom’s taxonomy of learning.

<Table II-12> Entrepreneurial Cognitive Outcomes

Cognitive outcomes	Affective outcomes	Skill based (psychomotor)
<ul style="list-style-type: none"> ▪ Basics of accounting, finance, technology, marketing ▪ Business modelling ▪ Opportunity recognition ▪ Understanding the broad picture and context of work life and economy ▪ Understanding of business start-ups and procedures ▪ Innovation and creativity processes ▪ Entrepreneurship process ▪ Ethics of enterprises ▪ Risk and uncertainty 	<ul style="list-style-type: none"> ▪ Independence/autonomy ▪ Social confidence ▪ Motivation ▪ Determination to meet objectives ▪ Curiosity ▪ Ambition and drive ▪ Sense of initiative ▪ Tolerance to failure ▪ Self-belief and self-esteem ▪ Passion for entrepreneurship ▪ Entrepreneurial self-efficacy 	<ul style="list-style-type: none"> ▪ Business planning and modelling ▪ Organization ▪ Project management ▪ Marketing ▪ Leadership, motivating others ▪ Team and individual work ▪ Negotiation ▪ Risk-taking ▪ Lateral thinking ▪ Commitment ▪ Managing uncertainty ▪ Solving problems ▪ Creative thinking ▪ Resolving conflicts

Source: Mets, Kozlinkska and Raudsaar (2017)

There are more scholars that attempted improve to conceptualized the outcome of entrepreneurial knowledge or learning. Matlay (2008) for instance divided the entrepreneurial knowledge into business strategy, business risk, marketing, marketing research, finance, human resources, business planning and business idea development. Ramsgaard and Østergaard, (2017), on the other hand conceptualized entrepreneurial learning during internships as bridging theory to practice, identifying opportunities, value creation, reflection, understanding of employability, feedback and examination, developing professional identity and reflection. Meanwhile Tseng (2013) has tried to conceptualize self-directed

learning domain as learning about oneself, learning about the environment and entrepreneurial networks, learning about the business, learning about the small business management, learning about the nature and management of relationships. Entrepreneurial knowledge on opportunity recognition and entrepreneurial experience on start up experience, management experience and industry specific experience.

Most of the learning outcomes even for entrepreneurial learning originate from Bloom's original Framework. The publication of Bloom's original Taxonomy of Educational Objectives in 1956 presented a one-dimensional and hierarchical explanation of how individuals attain knowledge as it proposed a progression of an individual through stages of knowledge acquisition including knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1956). These learning outcomes are divided into cognitive domains, psychomotor and affective domain whereby the cognitive domain refers to the acquisition of knowledge, the psychomotor refers to the nurturing of skills and the affective domain refers to the formation of attitudes (Leach, 2007).

More specifically, an individual are able to define theoretical terminologies at knowledge level; the individual could then provide an example of the theories and understand it when working on an assigned problems. At a higher application level, that individual will recognize the means and methods for solving different sets of problems; meanwhile the individual attains a higher cognition which is analysis if they could explain the reasons behind a problem solving process. Further up the taxonomy which is the synthesis Level of learning an individual can two different problem solving processes into a new

innovative means and at the highest level of learning, a student could evaluate the best solution which is customized to the problem at hand. (Leach, 2007).

However in this study, entrepreneurial learning would only focus on the cognitive learning as the psychomotor domain would refer to the longterm cultivation of hands-on skills which may occur mostly out of classroom. This study will also not take affective domain into account as this may be similar to the two variables efficacy and entrepreneurial orientation. Leach (2007) used this Bloom's framework to create guidelines for setting objectives for entrepreneurial teaching especially on idea generation. However, a more simplified taxonomy was used based on Anderson and Kratgwohl (2001).

b. Environmental Support

Environmental support in this research refers to the perception of external factors aside from an individual's own learning institution or their own innate characteristics, which is able to provide ease to create business. Previous research has found that several environmental factors affect entrepreneurial intention or the performance of businesses and include 1) access to capital or financial support (Cetindamar et al, 2012; Indarti and Langenberg, 2004;) knowledge of potential business sectors (Kristiansen and Indarti, 2004), 3) social networks (Sequeira et al 2007; Indarti and Langenberg, 2004), 4) government support or government policy (Chittithaworn, 2011; Cho and Lee, 2016; Franke and Luthje, 2004), and 5) educational system at school.

i) Concept of Environmental Support

Access to capital is one of the most important factors in establishing any new businesses and it is evident that entrepreneurs may give up on their entrepreneurial careers due to the inability to access funding (Indarti and Langenberg, 2004). The capital needed to start a new business can be obtained through various means including personal savings, bank loan or angel investor injection as well as from family or friends (Cetindamar et al, 2012). Cetindamar et al, (2012) found that found that family capital was positively associated with the likelihood of engaging in entrepreneurship.

On the other hand, social networks play an important role not only in

motivating a potential entrepreneur, but also in gaining access to the resources during planning of the businesses. Some findings shows the link between an entrepreneur's perception of easy access to information within social network and intention to start a business (Sequeira et al 2007; Indarti and Langenberg, 2004). The lack of governmental support has been found to be one of the barriers to the development of businesses (Indarti and Langenberg, 2004).

ii) Measurement of Environmental Support

The measurement of environmental support varies according to the way the researchers conceptualize them. For instance for the variable financial support, Franke and Luthje, (2004) measures financing through two items "*It is easy to obtain venture capital*" and "*Banks do not readily give credit to start up companies*". Indarti and Langenberg (2004) measures capital through 3 items including "*Existing capital is sufficient to maintain and expand the business*"; "*if needed, it is easy to get additional capital*"; and "*I have accessible alternatives of capital resources if needed*". On the other hand, government policies is also an important variable identified in past researches. It is measured by Franke and Luthje, (2004) using four items including "*There are sufficient subsidies available for new companies*"; "*Qualified consultant and service support for new company is available*"; "*the beauracratic procedures for founding a new company are unclear*"; "*State laws are adverse to running a company*". Indarti and Langenberg (2004) measures government support through 3 items including "*government support to my business is satisfactory*"; "*i got business permit and other permit easily and quickly*" and "*during running of business, I have no*

problems when having contact with the government". However, Indarti and Langenberg (2004) had researched on nascent entrepreneurs.

Government policies could be seen as "structural support" and Gelard & Saleh (2011) measures 4 items: "*in Iran, the government encourages entrepreneurs to establish a firm*"; "*State laws (rules and regulations) are adverse to running a business*"; "*Tax regulation gives facilities to entrepreneurs*"; "*Iran economy provides many opportunities for entrepreneurs*". The Chronbach alpha is found to be 0.66. On the other hand, Shu et al. (2019) measures government institutional support with scale adopted from Li and Atuahene-Gima (2001); CR = 0.891, Cronbach's $\alpha = 0.887$). Questions include "*The central and local governments have provided us with necessary technology information and support*" ($\alpha = 0.801$); "*The central and local governments have provided us with support to seek for financial resources*" ($\alpha = 0.854$); "*The central and local governments have provided us with beneficial policies and project*" ($\alpha = 0.892$); "*The central and local governments have provided us with direct financial support such as taxreduction and subsidy*". However, these questions are mixed with both policies, financial accessibility and institutional accessibility.

For social support, Gelard & Saleh (2011) studied 4 contextual factors including the construct informal network. According to them informal networks are based on relationships formed with families, friends, neighbours to gather relevant data or opportunities regarding business opportunities. Their survey includes 5 items under the construct informal network, "*If I decide to become an entrepreneur, my parents will support me*"; "*If I decide to become an entrepreneur, my family members will support me*"; "*If I decide to become an*

entrepreneur, I will consult my family members”; “*If I decide to become an entrepreneur, my friends will support me,*” “*If I decide to become an entrepreneur, my families will give me emotional support*” The Chronbach alpha is found to be 0.75.

Carr and Sequeria (2007) studied perceived family business support using 8 items on a 5 point likert scale with 1 being extremely negative and 5 being extremely positive. The items include “My parent(s) feel _____ about my starting a business.”; “My spouse/significant other feels _____ about my starting abusiness” “My brother/sister feels _____ about my starting a business.” “In general my relatives feel _____ about my starting a business” “My neighbor feels _____ about my starting a business.” “My co-worker(s) feels _____ about my starting a business.” “In general my acquaintances feel _____ about my starting abusiness.” “My close friends feel _____ about my starting a business.”

c. Self-Efficacy

i) Concept of Self-Efficacy

Before an individual initiates and pursues goal-directed tasks, he/she invokes personal cognitive capabilities to evaluate, and integrate information about personal skills relative to specific challenges and to form beliefs about his or her probabilities of attaining success. In a general sense, self-efficacy measures this individual's personal belief in his or her own skills and abilities to initiate a task and lead it to success and involves people's assessment of their own abilities and capacity to mobilise the motivations, cognitive resources, and or courses of action needed to exercise control over life events (Bandura, 1997). Self-efficacy is a motivational construct that has been shown to influence an individual's cognitive decision making and psychological stability (Bandura and Locke, 2003) and hence influence the choice of activities and goal (Zhao, Seibert & Hills, 2005; Chen, Greene and Crick, 1998).

Self-efficacy belief refers to a type of self reflection in which an individual forms to overcome difficulty and decisions related to their action and thus, in simpler terms, it could constitute of the confidence on their own work competency and the beliefs that they can perform a specific outcome successfully (Naktiyok, Karabey and Gulluce, 2010). In other words, individual's perceptions of self-efficacy, rather than their actual ability that motivates them to perform an entrepreneurial behavior Kingon et al., 2002). Self-efficacy is one a form of sociocognitive which influences career aspirations of Children (Bandura,

Barbaranelli, Caprara, and Pastorelli, 2001) and it is a critical antecedent of entrepreneurial intentions and behavior (Zhao, Seibert & Hills, 2005). Research by Markman et al. (2002) further suggests that self-efficacy reliably predicts scope of career options considered, occupational interests, perseverance in difficult fields, and personal effectiveness.

Self-efficacy in an entrepreneurial outcome can be thus, be defined as an individual's confidence in his or her ability to successfully perform entrepreneurial roles and tasks, was positively related to students' intentions to start their own business (Chen, Greene and Crick, 1998). Breakwell (1992, p35) on the other hand explains in more details and define it as "People's perceptions of their own capabilities influence how they act, their motivation levels, their thought patterns and their emotional reactions in demanding situations. without the subjective belief that it is possible to act in certain ways, action is unlikely to occur.". However, it is argued that there has been various definitions of self-efficacy in past researches and that some of the self-efficacy is focused only on beliefs on the individual capability on a particular task.

Thus, Drnovšek, Wincent, & Cardon (2010) in relation to the social cognitive theory, proposes that self-efficacy in an entrepreneurial task refers to two types of beliefs firstly is the goal beliefs, which refers to an individuals' beliefs regarding their capabilities to attain goals and, control beliefs; which refers to control positive and negative cognition that an entrepreneur has during the process of starting-up a business.

Self-efficacy in an entrepreneurial task includes at least two dimensions: the type of goal beliefs which includes tasks and outcomes, and type of control

beliefs which includes negative or positive that exist in the context of business start-up processes.

This is similar concept perceived feasibility in Shapero and Sokol's Model of Entrepreneurial event - perceived feasibility refers to the degree of a person's belief in their personal competence to start a business. Although personal experience and self confidence, to some extent influences this belief, it is the individual's self-efficacy that was identified as a critical antecedent variable to their feasibility to do a business perceptions (Krueger et al, 2000; Chen, Greene and Crick, 1998). Thus, in this study self-efficacy will reflect the perceived feasibility in shapero and sokol's model.

ii) Measurement of Self-Efficacy

There are various ways of measuring entrepreneurial self-efficacy ranging from measurement of self-efficacy of individuals in their goals of creating an business in the future, their skills related to forming an entrepreneurship, and a more specific measurement of an individual self-efficacy in specific task related to the process of entrepreneurship [Refer to Table II-12].

For the specific measurements of Entrepreneurial Self Efficacy, for instance, one of the commonly used instrument has been the 22-item multi-dimensional measure developed by Chen et al. (1998), which had mentioned that Entrepreneurial Self Efficacy is made up of 5 sub dimensions which is Marketing, Innovation, Management, Risk Taking and Financial Control. The instrument are expressed to check the certainty of the respondents in a specific task. For example, "What is you Degree of certainty in performing each of the

roles/tasks". The scale is on a 5 point likert scale which is completely unsure (1) to completely sure (5). The scale reliability was checked and is at Cronbach a- .89.

DeNoble, Jung and Ehrlich (1999) developed another 22 items that was domain specific to entrepreneurship process. The measure was developed by obtaining and analyzing the responses from entrepreneurs in which they had to describe the challenges that they had faced in the beginning of a business. and these measure comprises six sub-dimensions which capture an entrepreneur's self-efficacy in relation to developing new product and market opportunities, building an innovative environment, initiating investor relationships, defining core purpose, coping with unexpected challenges, and developing critical human resources. The questionnaire expression is designed to check their perceived capability for example "How capable do you believe you are in performing each of the following tasks?". It is on a 5 point likert scale where 1 is "Strongly disagree" and 5 is "Strongly agree"

Zhao, Seibert and Hills (2005) developed 4 items that measures the confidence of respondents at different phase of entrepreneurship such as at opportunity identification, Creating new products, Thinking creatively, Commercializing an idea or new development. This is measured at a 5 point scale with cronbach alpha of 0.78.

Barbosa, Gerhardt and Kickul (2007)'s ESE has 4 sub dimension and these are opportunity identificaton, self-efficacy, relatioinschip self-efficacy, managerial self-efficacy and tolerance self-efficacy however this scale is not as popular.

McGee et all (2009) 19 item was conceptualized from the entrepreneurial

tasks embedded in the venture creation process model. Entrepreneurial activities are categorised based on four phases of entrepreneurial activities as proposed by Stevenson et al (1965); where by a 19 item suitable according to business creation which is searching, planning, marshalling and implementation. The questionnaire is designed to ask for the self perceived confidence of the respondent in a particular task, for example “*How much confidence do you have in your ability to ...?*”. It is on a 5 point likert scale.

<Table II-13> Dimensions of Entrepreneurial Self Efficacy and its Operationalizing Instrument

Instrument	Specific Task in Entrepreneurship	Number of items	Scale	Basis of development	Instrument expressions:
Chen, Greene and Crick (1998)	<ul style="list-style-type: none"> ▪ Marketing ▪ Innovation ▪ Management ▪ Risk Taking ▪ Financial Control 	22 items	5-point scale: from completely unsure (1) to completely sure (5) Chronbach a- .89	Based on the roles that is hold by an individual	<ul style="list-style-type: none"> • “Degree of certainty in performing each of the roles/tasks”
De Noble et al (1999)	<ul style="list-style-type: none"> ▪ Developing new product and market opportunities ▪ Building and innovative environment ▪ imitating investor relationship ▪ defining core purpose ▪ Coping with unexpected challenges ▪ developing critical human resource 	23 items	<ul style="list-style-type: none"> • 5-point scale: from strongly disagree (1) to strongly agree (5) 	Issues faced in the startup or early development of their company	<ul style="list-style-type: none"> • “How capable do you believe you are in performing each of the following tasks?”
Zhao, Seibert & Hills (2005)	<ul style="list-style-type: none"> ▪ Identify new business opportunities ▪ Creating new products ▪ Thinking creatively ▪ Commercializing an idea or new development 	4 items	5-point scale: from no confidence (1) to complete confidence (5) (Conbach .78).	Based on different phases of entrepreneurship	How much confidence do you have in your ability to...

Mc Gee et al (2009)	<ul style="list-style-type: none"> ▪ Searching ▪ Planning ▪ Marshalling ▪ Implementating:people ▪ Implementing: financial 	19 items	5-point Likert scale (1 = very little, 5 = very much)	Based on the different phase in development of a startup development process.	<ul style="list-style-type: none"> • “How much confidence do you have in your ability to ...?”
Barbosa et al (2007)	<ul style="list-style-type: none"> ▪ Opportunity identification ▪ Relationship ▪ Managerial ▪ Tolerance 	18 items	<ul style="list-style-type: none"> • 5-point scale: from very little (1) to very much (5) 	Based on the entrepreneurial life cycle	
Barakat et al (2014)	<ul style="list-style-type: none"> ▪ Innovation ▪ financial value ▪ team work ▪ product development ▪ startup process ▪ leadership ▪ creativity 	17 items	<ul style="list-style-type: none"> • 5-point scale: or 6 point scale 	Based on task related to entrepreneurship in the context of creativity and innovation	Not yet validated

d. Entrepreneurial Orientation

i) Concept of Entrepreneurial Orientation

Entrepreneurial Orientation, in general, refers to the processes, practices and decision making activities that lead to the act of entrepreneurship (Lumpkin and Dess, 1996, p 136) and is mostly studied at firm level and perspective. Entrepreneurship was first conceptualized as consisting of three dimensions (Miller, 1983) and was further expanded to consist of five different dimensions of entrepreneurial orientation as autonomy, innovativeness, risk-taking, proactiveness, and competitive aggressiveness which are used to determine the levels of entrepreneurship in an organization (Lumpkin and Dess, 1996). . Krauss et al. (2005) later added two more elements to this framework, namely achievement orientation and learning orientation.

In recent years, researches have suggested and studied entrepreneurial orientation as an individual level construct (Koe, 2016). These research view Entrepreneurial Orientation as the entrepreneurial competencies that can be learnt through proper entrepreneurship education (Koe, 2016) or through experiential learning (Sahoo and Panda, 2018). These research agrees that individual level entrepreneurial orientation consist of the same dimensions or construct as firm level entrepreneurial orientation (Rauch, 2009) and by modifying how a question is asked these dimensions, the items used to measure this variables was proposed to better fit the individual

More specifically, previous research shows that the innovativeness, proactiveness, and risk-taking traits gave reliable results for determining an

individual's EO (Bolton and Lane, 2012) while autonomy and competitiveness aggressiveness have little empirical validation. Moreover according to, Frunzaru and Cismaru, (2018), other dimensions of Individual Entrepreneurship orientation such as autonomy and competence may be formed when the individual is more mature and hence may not be appropriate to study for student level.

Hence, the three variables form the most consistently used constructs to measure Individual Entrepreneurial Intention in many recent studies (Frunzaru and Cismaru, 2018; Koe, 2016; Martins and Perez, 2020). Innovativeness at individual level refers to the an individual's ability to pursue new opportunities as well as their creativity. Proactiveness is the ability to anticipate future problems or demands. Risk-taking is ability to take personal risk and willingness to make commitments

ii) Measurement of Entrepreneurial Orientation

Most of the studies (Frunzaru & Cismaru,, 2018; Koe, 2016; Ibrahim & Mas'ud, 2016; Martins and Perez, 2020; Popov et al. 2018) of entrepreneurial orientation of students adapted the scale developed by Bolton and Lane (2012) as a basis for developing their questionnaires because these are developed for students. and according to Frunzaru and Cismaru, (2018) this scale could be used analyze the entrepreneurship education in higher education level. The instrument used a five-point Likert scale with 3 items measured risk-taking, 4 measured innovativeness, and 3 proactiveness. The scale ranged from 1 = "strongly disagree" to 5 = "strongly agree". The reliability as re-measured by Koe (2016) for Risk taking is 0.766; for innovativeness is 0.843 and for proactiveness is 0.864.

5. Relationship Among Variables Related to Entrepreneurial Intention

a. Direct Relationship Between Selected Latent Variables to Entrepreneurial Intention

i) Entrepreneurial Learning

Entrepreneurial education and entrepreneurial learning forms part of the human capital that may lead to the increased intention of an individual. Despite so, literature pertaining to the effect of entrepreneurial education or learning on entrepreneurial intention are inconclusive with some studies reporting a direct and positive effect of entrepreneurial learning and entrepreneurial intention, while some studies reporting a negative effect. This mixed results may be due to wide variation in which entrepreneurial learning is measured.

Some studies measure participation in entrepreneurial education and shows that this raises the intention of students to create business ventures. For instance, study by Bae et al. (2014) shows a small relationship between entrepreneurship education and EI ($\rho = 0.143$). While Hattab (2014), found that education has a positive impact on students' perceived desirability of self-employment. And she concluded that education was found to increase the degree of favourability of entrepreneurship among Egyptian students ($\rho = 0.03$). Robinson and Sexton (1994) empirically suggest a strong effect of education to the intention to be an entrepreneur, however in their studies they had not distinguish the types of educational programs. The meta analysis by Lorz, Muller and Volery (2011) found that there are around 41 papers that shows a positive effect, while there

are 2 studies that reported a negative impact; while 6 studies reported a mixed or insignificant impact. For example, Petridou & Glaveli, 2008, studied on 104 rural woman members of cooperatives who had participated in training program. Their studies requires respondents to answer a questionnaire which rates their perceived degree at how their training program has improved the entrepreneurial skills and attitudes. Their results show that entrepreneurial education positively affects entrepreneurial skill and attitudes, cooperative viability, work family balance and IT skills.

On the contrary, are also several studies that demonstrates a negative effect of entrepreneurial education. For example, von Graevenitz et al., 2010) found a negative relationship between entrepreneurial education and entrepreneurial intention. Osterbeek et al (2010) studies the impact of entrepreneurship education in a compulsory course using a difference-in-difference framework. Since, students may have self selected into different school locations, location choice and this treatment is instrumented. The results show that the effect on the students self assessed entrepreneurial skill is insignificant. and the effect of course on the entrepreneurial intention is negative. This negative impact may be due to respondents having more realistic view of what is needed to start own business or their perceived feasibility, or participants may dislike program.(Osterbeek et al, 2010).

In terms of work experience, past studies have shown that prior work experience to positively influences perceived behavioural control as work experience allow the individual to obtain the necessary entrepreneurship related competences; as well as attitudes (Kautonen et al. 2010). This means that it does

not directly impact the intention but rather mediated by attitude, subjective norm and perceived behavioural control. According to Kautonen et al, (2010), Perceived behavioural control is the perceived ease or difficulty of performing the behaviour. This can generally be referred to as general efficacy in performing behaviour. Qualitative study by Botha & Bignotti (2016) on the effect of internship to entrepreneurial self-efficacy and entrepreneurial education in university students in South Africa shows that there is empirical support for the positive influence of internships on the development of interns' EI and ESE. Meanwhile study by Nurhuda and Soenarto (2018) on role of internship experience and role of teachers on entrepreneurial interest of students in four vocational schools in Indonesia shows that there is a positive and significant influence on the interest in entrepreneurship.

Findings in the studies of relationship between entrepreneurial learning and entrepreneurial intention demands shows an unclear direction of the effect of entrepreneurship education on entrepreneurial intention and demands further discussion. Thus it is hypothesized that entrepreneurial learning will have a direct and positive effect on entrepreneurial intention.

ii) Environmental Variable

Moreover, there are several studies that studied the effect of environmental variables on entrepreneurial intention through various exogenous variables. One of the environmental factors that shows a direct positive relationship with intention to start a business is the policies that supports entrepreneurship including tax

regulation or business regulations and its ease of process. (Huang et al. 2021; Turker and Selcuk, 2008; Gelard and Saleh, 2011). This variable exist in past literature by various names such as “structural support” or “entrepreneurial policy”.

Huang et al (2021), through their hypothesized structural equational model, investigated the direct relationship between entrepreneurship policy and entrepreneurial intention as well as the indirect effect of entrepreneurial policy through entrepreneurial practice and entrepreneurial spirit of students and graduates from various majors in universities in Guangdong Province, China. study shows that there is a the significant direct effect of entrepreneurial policy perception of students on their intention to start a business ($\beta=.469$, $P<0.001$).

Turker and Selcuk (2008), through their hypothesised structural model, investigated the direct relationship between contextual factors such as perceived relational support, perceived structural support and perceived school support on entrepreneurial intention of university students in Turkey. In their study, the student’s perceptive relational support which refers to the sentimental and monetary support of family and friends.

Gelard and Saleh (2011) studied the effects of contextual factors on entrepreneurial intention of accounting and management major university students in Tehran including educational support, structural support, informal network and formal network. Their regression analysis yields a positive relationship between entrepreneurial intention and perceived structural support ($p<0.01$, Pearson Correlation =0.129, $y=0.229x + 6.241$).

Similarly, access to financial capital or perception of the availability of financial support has many various names in past literature including “financial support” or “access to finance” or “access to financial capital”. There are several studies that found positive and significant relationship between financial accessibility to intention (Hoong, 2019), while there are some that found insignificant relationship (Vuong et al, 2020; Nguyen, 2020).

In a PLS-SEM study of relationship between contextual factors that influence social entrepreneurial intention, Hoong (2019) found that there is a positive relationship between access to finance and entrepreneurial intention of Malaysian Undergraduate students ($\beta=.264$, $P<0.001$) and concluded that especially in the early conception of a business, the higher the financial accessibility, the higher the intention to become a social entrepreneur as finance could be used to trade in for other resources such as human resources.

However there are also study that yields insignificant results. Research on IT major university students in Vietnam (Vuong et al, 2020) by found that financial accessibility do not have a significant direct relationship with entrepreneurial intention, but rather financial accessibility has a significant indirect relationship with entrepreneurial intention through attitude towards entrepreneurship ($\beta=.349$, $P<0.05$). Another study in Vietnam (Nguyen, 2020) shows that the direct effect of access to finance on entrepreneurial intention is positive but insignificant but access to finance has direct positive and significant relation on entrepreneurial behavioural control ($\beta = 0.201$; sig. < 0.001). In a study of entrepreneurial intention of Korean potential entrepreneurs, Park, Kim and Ko, (2015) did not find a significant relationship between financial support and entrepreneurial

intention.

This variable comes with various names in past literatures, it could also be referred to as “relational support” or “social support” or “informal networks”. Social networks was found to have a direct and significant relationship to entrepreneurial intention of university students in Turkey. In Gelard and Saleh (2011) studies, there is as an insignificant relationship between informal network, which refers to the emotional support provided by family and friends, and intention to start a business of accounting and management major university students in Tehran.

iii) Entrepreneurial Self-Efficacy

On the other hand, past research provides evidence that ESE is a strong predictor of EI as individuals with higher self-efficacy tend to have higher entrepreneurial intent Markman et al. 2002; Udayanan, 2019; Tinoco and Bayon; 2020, Wang, Chang, Yao and Liang, 2016).

Tinoco and Bayon (2020) studies the effect of entrepreneurial education, self-efficacy beliefs and entrepreneurial intention of secondary students or pre university students from 10th and 11th grade in Colombia. The findings show that GSE has a significantly positive influence on EI among pre-university students ($\beta = 0.12$, $p < 0.05$). Similarly, EE has a positive and significant impact on EI ($\beta = 0.49$, $p < 0.05$) of students, that is, frequent exposure to entrepreneurial activities generates a positive effect on EI. On the other hand, Udayanan (2019)

studied the role of self-efficacy to intention of students who are enrolled in a business program in college. Their findings show that SE influences EI of the students and GSE explains entrepreneurial intention of the students to the extent of 80%.

Wang, Chang, Yao and Liang (2016) hypothesised that self-efficacy of students from agriculture college in Taiwan will positively predict their entrepreneurial intention and that self-efficacy and in this study self-efficacy is defined generally based on Bandura and is measured unidimensionally using 8 items scale developed by Chen, Gully and Eden (2001). Their findings show that the hypothesis is supported. Markman et al. (2002) found that inventors with higher self-efficacy choose to use their inventions in the creation of new ventures but their low efficacy inventors prefer to be employed in companies. This implies that self-efficacy helps an individual to explore new opportunities create business ventures E-education as a predictor of self-efficacy and self-efficacy as a predictor of entrepreneurial intentions.

On the other hand, some show a non significant effect of self-efficacy on intention to create a business. For example Boukamcha. (2015) has a similar hypothesis for sample of participants who are already in business incubators. his findings show that His findings show that education training positively influence the trainees perceived self-efficacy $t (t= 3.15, df= 239, p= 0.012)$ and $F [F (1, 238) 9.44, p= 0.000)$. However perceived self-efficacy does not have significant effect on trainees' entrepreneurial intention ($0.272 < 0.5$). Boukamcha (2015) did not discuss as to the reason why this hypothesis was unsupported as expected.

iv) Entrepreneurial Orientation

Lastly, past studies have evidently shown a direct relationship between entrepreneurial orientation and entrepreneurial intention. Koe (2016) for instance investigated 176 undergraduate students for the effect of entrepreneurial orientation (EIO) and entrepreneurial intention and concluded that the relationship between IEO and entrepreneurial intention was statistically significant as ($R^2=0.457$). When exploring the direct effects of the 3 constructs to entrepreneurial intention, they found mixed and inconclusive results. Firstly, there is a direct and positive effect of proactiveness ($\beta = 0.631$, $p < 0.01$) and innovativeness ($\beta = 0.585$, $p < 0.01$) to intention, however risk-taking ($\beta = 0.047$, $p > 0.05$) did not show a significant influence on intention.

Martins and Perez (2020), on the other hand, studied the entrepreneurial orientation of undergraduate students from different majors and its effect on intention. Although they are from different majors, the university has incorporated courses designed to promote entrepreneurial spirit among students of different academic major thus all students at the university have to enrol in at least one subject that provides them with knowledge about entrepreneurship. Meanwhile, Frunzaru and Cismaru (2018) studied the relationship of IEO and education to entrepreneurial intention for Romanian students in three different universities in fields of marketing and communication. Students in communication do not have entrepreneurial courses in their curriculum while the marketing students do.

Robinson and Stubberud (2014) who measures the relationship of 3 constructs of entrepreneurial orientation which is innovativeness, proactiveness and risk taking to entrepreneurial intent through pre and post test survey. They found

the impact of entrepreneurship education on IEO of students, which, in turn, affects their intentions to adopt an entrepreneurial career. Results show that the effect of the IEO on the EI, was supported ($\beta = 0.516$, $p < 0.01$). Their findings show that students with a higher IEO, need for achievement, self-efficacy, attend entrepreneurial education and have at least one parent entrepreneur or a higher level of education have a significantly higher intention of engaging in their own business. Finally, Ibrahim and Masud (2016) studied IEO for students drawn across all faculties and level of education at a management university in Malaysia. hypothesised that entrepreneurial orientation will be positively related to entrepreneurial intention and that Entrepreneurial orientation will moderate the relationship between entrepreneurial skills and entrepreneurial intention. the study found a significant and positive relation between entrepreneurial orientation and entrepreneurial intention ($\beta = 0.36$; $t = 5.620$; $p = 0.00$). The moderating result shows that entrepreneurial orientation moderates the relationship between ES and entrepreneurial intention ($\beta = -0.26$; $t = 3.936$; $p = 0.00$).

b. Direct Relationship Between Exogenous Latent Variables

Past studies has shown that environmental variable is directly related to entrepreneurial orientation and entrepreneurial self efficacy. Bandura's Social Cognitive Theory posited that individuals acquire certain behaviour by the interaction of a micro-level characteristics such as individual's personal differences, or a more macro level characteristics such as institutional environment or cultural context (Newman et al, 2019). For instance, an environment which provides more eased policy regulations and more opportunity

to obtain financial resources for start ups, as well as providing the emotional needs is said to have improve the self-efficacy of an individual in starting up a business (Elnadi an Gheith, 2021; Luthans & Ibrayeva, 2006; Zhang & Huang, 2021).

On the other hand, learning to become an entrepreneur is a complex process that is an amalgamation of the individual's experiences from their learning institutions, working place or their everyday life (Toutain et al, 2017). Environment factors such business friendly policies not only plays a positive influence on the development of more learning programs and efforts in entrepreneurship within a country (Dodd and Hynes, 2012; Motoyama and Knowlton, 2016; Lévesque, Minniti, and Shepherd; 2009), it also influences the pedagogical tools used in the programs to create more effective learning for an individual (Elmes et al, 2012; Parker, 2006).

On a more individual level, environmental variables are claimed to have an affect on the entrepreneurial orientation. Past researches has studied environmental by examining the environmental hostility in a particular place. Environmental hostility refers to industry conditions characterized by “precarious industry settings, intense competition, harsh, overwhelming business climates, and the relative lack of exploitable opportunities” (Covin and Slevin, 1989)

Although most of these in studied through a firm perspective, it is suggested that environmental support in firms such as percieved dynamism, technological opportunities, industry growth and more (Antoncic, 2007) will provide more space for workers to act entrepreneurially. There are however, limited studies on entrepreneurial orientation on an individual level except that of Sahoo and Panda

(2019) who found that there is a direct and significant relationship between access to financing access to business information, social networks and university support on individual-level entrepreneurial orientation (Sahoo and Panda, 2019).

In short, places that provide more environmental support such as supportive policies, access to finance and social norms will increase not only the perception of cognitive learning of individuals, but it also contributes to the high self-efficacy and entrepreneurial orientation

Moreover, there is a relationship posited between entrepreneurial learning to entrepreneurial self efficacy and entrepreneurial orientation. Premised on both the Social Learning Theory and the Social Cognitive Learning theory, self-efficacy could be developed or changed by the direct and indirect experience (Lebusa, 2011). According to Bandura, this change is determined by the way an individual learns, absorb and transforms 4 different types of information- performance accomplishments, vicarious experience, verbal persuasion and physiological states. These informations can be provided through entrepreneurial education or learning and thus prior research have sought to confirm this (Darmanto and Yuliari, 2018; Jiang, Xiong and Cao, 2016; Newman et al. (2018), Nowinski et al, 2019; Hao, Seibert, & Hills, 2005).

More than that, entrepreneurial learning is said to affect an individual's entrepreneurial orientation as it strengthens students' positive attitudes which is directly related to their orientations; secondly, it would allow them to become more autonomous in their decision; and finally entrepreneurial education programs help students development skills and competencies that is required in creating a

startup (Marques et al. 2018). This led to several studies that explore the positive relationship between entrepreneurial learning and entrepreneurial orientation (Koe, 2016; Martins and Perez, 2020; Frunzaru and Cismaru, 2018; Robinson and Stubberud, 2014; Ibrahim and Masud, 2016).

Accordingly, the higher the perception of learning through classroom, out-of-school projects and internships, the more confident students will be in their abilities needed to start a business and the higher their risk-taking, proactiveness and innovativeness is.

Entrepreneurial orientation is also shown to have a direct relationship to entrepreneurial self efficacy. The behaviour of managers' of a company or business is linked more closely to their own perceptions of control processes and outcomes in that situation. In entrepreneurship especially where situations may be unpredictable and call for risk taking efforts (Krueger & Dickson, 1994). To date, there are limited studies which solely explore the effects of individual risk-taking, innovativeness and proactiveness tendencies on entrepreneurial self-efficacy. Rather, studies that examines the mediating effect of entrepreneurial self-efficacy found a direct positive relation to entrepreneurial self-efficacy (Prabhu, 2012; Kumar and Shukla, 2019; Zhao, Seibert & Hills, 2005). In contrast to this, Krueger & Dickson (1994), posits that higher self efficacy will lead to more risk taking behaviour which suggest an opposite pathway from that is theorised in this research.

c. Indirect Relationship between Entrepreneurial Intention with Entrepreneurial Self-Efficacy and Entrepreneurial Orientation.

i) Mediating Role of Entrepreneurial Self-Efficacy

It could be posited that there is a mediating effect of self-efficacy between entrepreneurial learning to intention. Jiang, Xiong and Cao (2016) investigated the effect of entrepreneurial education quality, entrepreneurial self-efficacy and entrepreneurial intention in university students majoring in Engineering and science education. In his studies entrepreneurial self-efficacy plays mediating role

between entrepreneurial education quality and entrepreneurial intention. ($\beta = 0.28$, $p < 0.01$)

Nowinski et al, (2019) studied the impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intention of final year university students of both business and non-business major with assumption that these students are likely to be exposed to entrepreneurship education at tertiary level. Entrepreneurial education was measured using one question which asked the respondents to assess on a 1–5 scale how much time during their university studies was devoted to studying entrepreneurship (where 1 denoted no or very little time). The results indicate that entrepreneurship education contributes to entrepreneurial intentions but it does so indirectly via improving students' ESE. The direct path between entrepreneurial education (EE) and entrepreneurial intentions (EIs) is non-significant. the impact of EE on EIs is fully mediated by three dimensions of ESE: marshalling, searching and planning (β indirect effect = 0.128; p indirect effect $\leq .01$). The explained variance for the full model (R^2) is 0.236

Newman, Obschonka, Schwarz, Cohen, and Nielsen (2018) articulated the relationship between self-efficacy and entrepreneurship education and training. Specifically, they related mastery to the use of live case studies and business plans, vicarious learning to observation and interaction with successful role models, and social persuasion to mentoring and feedback received on assignments through a systematic review of past papers. (Newman et al, 2018).

Hao, Seibert, & Hills, (2005), in their studies on master of business administration students in 5 universities found that the perceptions of formal

entrepreneurship learning ($\beta = .45, p < .01$), entrepreneurial experience ($\beta = .35, p < .01$), and risk propensity ($\beta = .18, p < .05$) to entrepreneurial self-efficacy, respectively, are each positive.

For Perceptions of formal learning, they asked how much they had learned during their MBA education regarding typical areas of entrepreneurship (opportunity recognition, opportunity evaluation, starting a business, and corporate entrepreneurship). A 5-point Likert scale was used to measure responses to each item, ranging from 1 (very little) to 5 (a great deal). Cronbach's alpha for this scale was .79.

Darmanto and Yuliari (2018) found through their quantitative study university entrepreneurship students in Indonesia that both entrepreneurial knowledge and entrepreneurial experiences significantly contribute to entrepreneurial self-efficacy which in turn significantly contributes to entrepreneurial intention.

Some studies have shown that exposure to entrepreneurial role model strengthens perceptions of entrepreneurial self-efficacy (Solesvik, 2013; Boyd and Vozikis, 1994). There are several studies which proves that exposure to role models to be important for individuals such as Boyd and Vozikis (1994), Locke and Schone (2004) and Rahman and Day (2013). However, Carver and Scheier (1998) argued that inspirational impact of entrepreneurial role models varies according to the individual's goal.

On the other hand, self-efficacy is also said to have a mediation between environmental support to intention. Although there is not much study that studies the mediating role of entrepreneurial efficacy to Relationship between Environmental support and entrepreneurial intention, there are several studies that

find significant relationship. Study by Elnadi and Gheith (2021) finds that entrepreneurial ecosystem including access to finance, governmental policies and regulations, government programs and support, infrastructure, cultural factors, social factors and education and training, have a significant and positive effect to entrepreneurial intention and this relationship is mediated by entrepreneurial efficacy ($\beta = 0.165$, $p < 0.05$). Zhang, J., & Huang, J. (2021) also found a mediating effect between entrepreneurial environment to entrepreneurial intention ($\beta = 0.455$, $p < 0.05$). Moreover, there are studies that examine the relation between Ajzen's TPB' Subjective norm as social support of family and structural support and educational support to perceived behavioural control which are conceptualized closest to self-efficacy. Although there is a weak effect, it is still found to be a positive effect between both educational support and relational support to self-efficacy (standardized $\beta = .28$, standardized $\beta = .28$, respectively). While there are many studies that relate efficacy to intention. Thus, it is worth looking into the mediating role of entrepreneurial efficacy to relationship between environmental support and entrepreneurial intention.

Moreover, self-efficacy has a mediation effect to entrepreneurial orientation and entrepreneurial intention. Past research has not looked into the relationship between entrepreneurial orientation and entrepreneurial efficacy as one variable, however, there are past researches that show a significant and positive effect of the observable variables of entrepreneurial intention to entrepreneurial intention. For instance risk taking (Zhao, Seibert & Hills, 2005) is found to be positively and directly related to entrepreneurial self-efficacy ($\beta = .18$, $p < 0.05$). Whereas,

proactiveness ($\beta = .60, p < 0.05$)..found to have a positive and direct relation to entrepreneurial self-efficacy and is found to completely mediate the relationship between proactive personality and entrepreneurial intention (Prabhu, 2012).

Kumar and Shukla (2019), also found that proactive personality, $\beta = 0.377, p < 0.001$) had a significant relationship with dependent variable, EI, in the absence of any. While proactive personality, $\beta = 0.181, p < 0.001$) also had a significant relationship with mediator (self-efficacy) and mediator had a significant relationship with dependent variable ($\beta = 0.459, p < 0.001$). and thus finds a mediation relationship of entrepreneurial self-efficacy to entrepreneurial intention.

While past studies have found that entrepreneurial orientation has direct and positive relationship with entrepreneurial intention (Koe, 2016; Martins and Perez, 2020; Frunzaru and Cismaru, 2018; Robinson and Stubberud, 2014; Ibrahim and Masud, 2016). Thus it is hypothesized that Entrepreneurial self-efficacy will have a mediating effect on the relationship between entrepreneurial orientation and entrepreneurial intention ($EO \rightarrow EE \rightarrow EI$)

ii) Mediating Role of Entrepreneurial Orientation

There are several studies which could suggest a mediating role of entrepreneurial orientation to the relationship between entrepreneurial learning and intention. Marques et al (2018) hypothesized that entrepreneurship education has an effect on 3 dimensions of entrepreneurial orientation. This study was done on university students with engineering, business, and social science and thus some

has classes in entrepreneurship and some do not. His hypothesis is derived based on the perspective whereby EE impact students' IEO in three ways. First, as EE typically regards entrepreneurship in a positive light regarding earnings compared to other career options, this strengthens students' positive attitudes and, thus, increases the positive impact of these attitudes on IEO. Second, the more students are aware of entrepreneurship, the clearer are their expectations of how entrepreneurship will influence their lives. This, in turn, makes their decisions less dependent on opinions, entrepreneurship and social reference groups. Finally, EE seeks to help students develop the skills and competencies needed to take advantage of business opportunities. Thus, when students receive more EE, from the outset, they become more confident in their ability to create and evaluate entrepreneurship opportunities and to secure the resources they need to take advantage of these chances. The results support the conclusion that EE has an impact on the innovation ($\beta = 0.129$, $p < 0.01$) and proactivity dimensions ($\beta = 0.097$, $p < 0.01$) of students' IEO, but no influence on the risk-taking dimension was detected.

Meanwhile, past studies have found that entrepreneurial orientation has direct and positive relationship with entrepreneurial intention (Koe, 2016; Martins and Perez, 2020; Frunzaru and Cismaru, 2018; Robinson and Stubberud, 2014; Ibrahim and Masud, 2016). Thus, it is hypothesized that there is a mediating effect of entrepreneurial orientation in the relationship between entrepreneurial learning to entrepreneurial intention.

Moreover, studies on entrepreneurial orientation and entrepreneurship performance in companies show that there is a positive and direct effect of

certain environmental variables such as access to finance (Fatoki, 2012), social norms to entrepreneurial intention. Sahoo studied the direct relationship between access to financing($\beta= 0.248$, $p<0.01$) , access to business information ($\beta= 0.238$, $p<0.01$) , social networks($\beta= 0.169$, $p<0.01$) and university support ($\beta= 0.247$, $p<0.01$) on individual orientation and found a significant effect (Sahoo and Panda, 2019). Meanwhile, entrepreneurial orientation has direct and positive relationship with entrepreneurial intention (Koe, 2016; Martins and Perez, 2020; Frunzaru and Cismaru, 2018; Robinson and Stubberud, 2014; Ibrahim and Masud, 2016). Thus, it is hypothesized that there is a mediating effect of entrepreneurial orientation in the relationship between environmental variable to entrepreneurial intention

iii) Double Mediation of Entrepreneurial Orientation and Self-Efficacy

Past studies suggest a double mediating effect of entrepreneurial orientation and self efficacy on the relationship between entrepreneurial learning and entrepreneurial intention. To date there is little work that examines the antecedents of Entrepreneurial Orientation at the individual level and its mediating role between variables and entrepreneurial intention. However, there are studies that postulates a positive relation between entrepreneurial learning and entrepreneurial orientation (Nair, Sandar and Paramasivam, 2019; Marques et al, 2018). And there are studies that show the observable variables of of entrepreneurial orientation are directly related to entrepreneurial efficacy (Zhao,Seibert & Hills, 2005, Prabhu, 2012, Kumar and Shukla, 2019). While

past studies have found that entrepreneurial efficacy is positively and directly related to entrepreneurial intention (Markman et al. 2002; Udayanan, 2019; Tinoco and Bayon; 2020, Wang, Chang, Yao and Liang, 2016). Thus it is worth to examine whether there is a double mediation between entrepreneurial orientation and self-efficacy on the relationship between entrepreneurial learning and entrepreneurial intention.

Similarly, there might also be double mediating effect of entrepreneurial orientation and self efficacy on the relationship between environmental variable and entrepreneurial intention. Studies on entrepreneurial orientation and entrepreneurship performance in companies show that there is a positive and direct effect of certain environmental variables (Fatoki, 2012; Sahoo and Panda, 2019) to entrepreneurial intention. Moreover entrepreneurial orientation are found to be directly related to entrepreneurial efficacy (Zhao,Seibert & Hills, 2005, Prabhu, 2012, Kumar and Shukla, 2019). While past studies have found that entrepreneurial efficacy is positively and directly related to entrepreneurial intention (Markman et al. 2002; Udayanan, 2019; Tinoco and Bayon; 2020, Wang, Chang, Yao and Liang, 2016). Thus it is worth to examine whether there is a double mediation between entrepreneurial orientation and self-efficacy on the relationship between environmental variable and entrepreneurial intention.

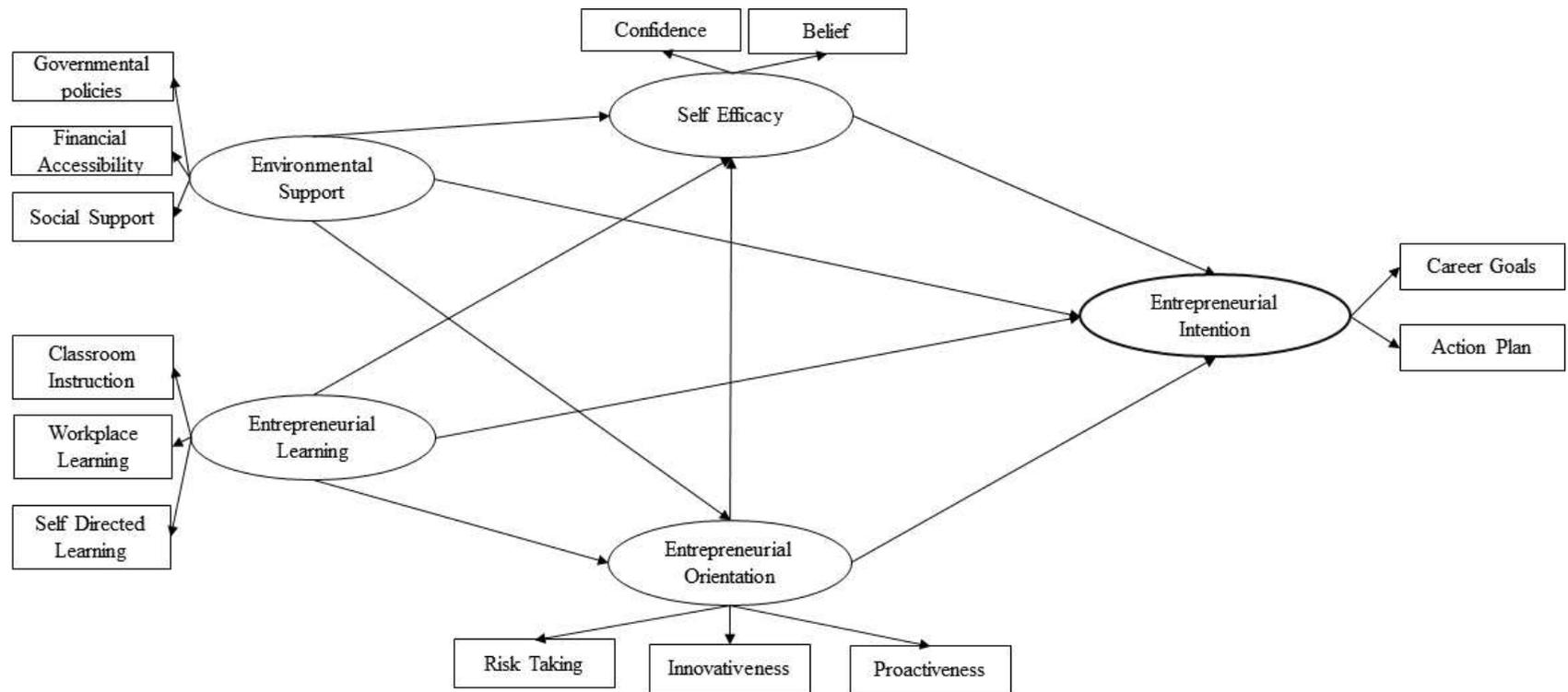
III. Research Method and Procedures

1. Research Design

The research model of this thesis was adapted from previously theorized models mainly from Shapero's entrepreneurial event model (Shapero & Sokol, 1982), the theory of planned behaviour (Ajzen, 1991), and social cognitive theory (Bandura, 1986). This research investigated the entrepreneurial intention of students at an early stage of their career decision-making process, which could be influenced by their perception of feasibility and their belief in themselves towards their capacities.

The proposed model focuses on variables that determine entrepreneurial behavior decision making. This is done by examining the development of entrepreneurial intention, psychological personal related variables, human capital related variable as well as external environmental support related variables in order to explore their impact on the entrepreneurial intention of an individual such as entrepreneurial learning, self-efficacy, orientation, environmental support and entrepreneurial intention.

The specified model proposed has 5 main latent variable which is exogenous entrepreneurial intention and 4 endogenous latent variables entrepreneurial learning, environmental support, self-efficacy, and orientation that is hypothesized to have direct positive effects on entrepreneurial learning.



(Figure III-1) Structural Equation Model of Exogenous Variable with Entrepreneurial Intention of BDQF Level 4 Students

2. Population and Sample

The target population defined in this study are students in their final year for vocational high school students at BDQF Level 4 including Higher National Technical Education Certificate (HNtec), Business and Technology Education Council (BTEC) level 3 Diploma, Lim Kok Wing University of Creative Technology (LUCT) Diploma and National Computing Council (NCC) Education Level 4 Diploma.

In Brunei, as of, there are a total of 12 vocational and technical schools which provide courses at BDQF Level 4, whereas there are 8 schools are administered by the Ministry of Education Institute of Brunei technical Education (IBTE) and about 7 private post - secondary vocational schools offering BDQF level 4 courses.

A major constraint in estimating the sampling size is the difficulty of obtaining most recent data especially for private institutions as some has refused to provide the most recent data sets due to confidentiality. Thus, for the government school, the data that was provided was from 2019 including the enrollment of new students in 2019. The table III-1 shows the number of enrollment of new students and it is estimated that these students would be graduating in 2021 that would add up to a total number of 985 students.

<Table III-1> Enrolled Students in BDQF Level 4 as of 2019 for IBTE Institutes

Administrating body	School	Number of newly Enrolled Student 2019	Number of students graduated in the year 2019
Government Ministry of Education (IBTE)	1. School of Aviation	88	105
	2.School of Business	265	257
	3.School of Building technology services	136	122
	4.School of Energy and Engineering Central (EEC)	106	74
	5.School of Hospitality and tourism	158	79
	6.School of Information and communications technology	167	167
	7.School of Energy and Engineering Satellite (EES)	95	75
	8. School of Agrotechnology and Applied Science (AAS)	125	106
Total		1140	985

Source: Unpublished internal document received from IBTE officer

For the private school population, the estimates are derived from unpublished and internal data, however as most of the population number are not provided and considered confidential.

<Table III-2> Enrolled Students in BDQF Level 4 for Private Institutes

Administrating body	School	Number of graduants in 2018 (from MOE statistics)	Estimated graduants in 2021 (Unpublished and internal)
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Private school technical vocational level	9. Laksamana College of Business (LCB)	-	Data not disclosed
	10. Cosmopolitan College of Commerce and Technology (CCCT)	214	124
	11. Kolej Institute of Graduate Studies (KIGS)	-	13
	12.Kemuda Institute (KI)	-	Data not disclosed
	13,Micronet International College	152	Data not disclosed
	14,BICPA	-	Data not disclosed
	15.Mahakarya Institute	-	5
	Total		(Unknown)
Total			

Thus, estimating from various available sources of published data is done (Not sure what do you mean here). Based on the data deriving from handbook of TVET, admissions to TVET BDQF level 4 from 2016 to 2018 is as follows: between 2016 (2100 students), 2017 (1790 students) and 2019 (1647 students), but, data is not available for 2019. This means that the admission is between 2100 to 1647 for BDQF level 4 in both government and private institutions. Moreover, according to the handbook, in 2018, the graduates from TVET in BDQF level 4 in 2018 is 899 for government led IBTE and 521 for private institutions (total of 1420). This means that the ratio is about 1.72: 1

SEM requires a larger sample size as some SEM estimates may not be accurate when the sample size is not sufficiently large (Kline, 2011). There is a diverse opinion on what can be considered a sufficient amount of sample size in

order to produce a valid and reliable results in SEM.

Hair et al. (2011), suggested that between 15 to 20 observations for each independent variable is adequate. If this is followed, in this research there is 11 independent observable variables (11x15), and thus 165 observations would be adequate for this research. In another opinion, Kline (2011) considers the ideas sample size to parameter or variable ration to be 20:1. The total parameters in this study is 13 (13 x20), and thus 260 observations would be sufficient to conduct this research if suggestion were to be taken into account.

While Boomsma (1983) proposes that the general rule of SEM sample size to be greater than 200 but recommends 400. According to the review by Shah and Goldstein (2006), SEM median sample size is typically within 200 cases. However, Krejcie & Morgan (1970) argue for a total population of about 1400 to 2000 individuals, a minimum sampling size of 301 to 322 is sufficient to create an overall representation in the population.

Considering the mentioned suggestions and to minimize effect that will arise from issues related to multivariate data abnormality, anomalies issues, complexity of models as well as to account from overall representation in the studied population, a sampling size of 320~400 responses is targeted.

Following the assumption from above, the ratio of students in schools according to the administrating body is 1.72: 1 and the sample size targeted is 209 respondents from IBTE or MOE administered schools and 121 from private vocational institutions including.

3. Instrumentation

The latent variables in this model are entrepreneurial Intention, self-efficacy, environmental support, entrepreneurial learning and entrepreneurial orientation.

a. Entrepreneurial Intention

This study conceptualizes latent variable entrepreneurial intention as an aggregate model of two observable variables where 1) the career goal and 2) action plan which is the specific intention and plan to reach the outcome, jointly produce a higher entrepreneurial intention.

Entrepreneurial intention is defined as the state of mind or process of thoughts which directs the individual to put an effort into achieving the goal which is to create any attempt at new business or venture creation, such as self-employment, a new business organization or the expansion of an existing business, by an existing business, an individual, a team of individuals, or an established business, be it in the near future or after more 5 years.

Career goal refers to the phase when the individual starts to form motivation to reach a set a career goal in the future. This variable is measured by 6 items that show the readiness, willingness or determination to achieve a certain goal and these are based on selected items Linan and Chen (2009) which measures intention. Items include “I am ready to do anything to be an entrepreneur” ($\alpha=.654$), “My professional goal is to become an entrepreneur” ($\alpha=.839$), “I am determined to create a firm in the future” ($\alpha=.914$), “I have the firm intention

to start a firm some day” ($\alpha=.856$). Although this was initially measured on a 7 point scale, in this research, it will be measured on a 5 points scale, 1 (strongly disagree) to 5 (strongly disagree). A few items from the original scale were omitted because of similarities in meaning to the previous questions. A higher score indicates a higher determination to reach their goals of becoming an entrepreneur.

Action plan, which is similar to implementation intention concept, measures whether the individual has specific plans to implement their intended behaviour. This is operationalized using 5 items adapted from Cho & Lee (2016) which measures the items on a 5-point scale and the items include “Currently I am working on a specific plan to start a business”. (Cronbach Alpha 0.896), ”I have made a detailed plan regarding ... where to start a business. (Cronbach Alpha 0.909); I have made a detailed plan regarding ... how to start a business. (Cronbach Alpha 0.893). The internal reliability of both the pilot and actual study is shown in Table III-2 and both Internal reliability is Cronbach α is more than 0.8 indicating a high reliability.

<Table III-3> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Intention

Observable variable	Pilot (n= 67)		Actual (n=404)	
	Internal Reliability (Cronbach Alpha)	Total No of Items	Reliability	Total No of Items
Career Goal	.811	4	.858	6
Action Plan	.820	5	.843	5

After the pilot test, feedback received from students in the pilot study and

second feedback from selected experts, the final survey one negative or reverse coded item is added “I have very low intention of starting a business” from Linan, Urban and Guerrero (2011). The purpose of included a negative item is to ensure that in the final survey the participants are giving consistent answer. One more item "I will make every effort to start my own business in the near future” is added from Linan and Chen (2009). Moreover, the confirmatory factor analysis is as shown in Table III-3 and shows that all standardised factor loadings is more than 0.5.

b. Entrepreneurial Learning

Entrepreneurial learning shall be looked as learning that occurs through three classrooms which are: classroom instruction, workplace learning and self - directed learning and questionnaires are formed based on Bloom’s Taxonomy of Learning cognitive outcomes of learning.

Classroom instruction is defined as the perception of whether the cognitive learning through school curriculum has provided knowledge, comprehension, analytical skills, application, evaluation and creation of certain cognitive outcomes related to entrepreneurship. This scale is developed for this study from Bloom’s taxonomy of learning and entrepreneurial cognitive outcomes is derived from Mets, Kozlinska & Raudsaar (2017).

Similarly, workplace learning is defined as perception of whether cognitive learning through work experiences, workshops outside of school compound or similar form of workplace learning has provided respondents with cognitive

knowledge related to working in an entrepreneurial setting. These cognitive outcomes are derived from Ramsgaard and Østergaard, (2017) conceptualization of learning outcomes in work experiences such as internships.

Within the same vein, self - directed learning is defined as perception of whether cognitive through learning that they have initiated on their own has provided respondents with cognitive knowledge specific certain outcomes. These outcomes are derived from Tseng, (2012) conceptualization of self-directed learning domain in entrepreneurship.

The internal reliability of both the pilot and actual study is shown in Table III-4 and both Internal reliability Cronbach α is between .879 to .912 indicating a high reliability.

<Table III-4> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Learning

Observable Variable	Pilot (n= 67)		Actual (n=404)	
	<i>Internal Reliability (Cronbach Alpha)</i>	Total No of Items	<i>Reliability</i>	Total No of Items
Classroom Instruction	.870	6	.919	6
Workplace Learning	.819	5	.910	5
Self-Directed Learning	.820	5	.877	5

*Note: n=403 for Work based learning and self-directed learning (one case excluded, listwise deletion)

n=404 for classroom learning

After the pilot test, feedback from students in the pilot study and second feedback from selected experts, the final survey retains all questions. However, to

the questions related to “Self Directed Learning” additional explanations are added. For example, in the pilot survey item 1 is “I have acquired knowledge related to myself” and in the actual survey it is modified to “I have acquired knowledge related to myself (such as my strength and weaknesses)” in order to supplement the statement and make it more understandable.

The confirmatory factor analysis is as shown in Table III-4 and shows that all standardised factor loadings is more than 0.5.

<Table III-5> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Entrepreneurial Learning

Observable Variable	Items (Coding)	B	β	S.E	CR
Classroom Instruction	ELC1	1.000	0.693	0.045	
	ELC2	1.027	0.783	0.039	15.530***
	ELC3	1.152	0.848	0.040	18.450***
	ELC4	1.238	0.849	0.042	20.900***
	ELC5	1.086	0.844	0.038	19.998 ***
	ELC6	1.100	0.826	0.041	46.118***
Workplace Learning	ELW1	1.000	0.834	0.018	47.003***
	ELW2	1.073	0.879	0.014	62.969 ***
	ELW3	0.943	0.882	0.017	17.372 ***
	ELW4	0.903	0.741	0.025	16.16 ***
	ELW5	0.943	0.784	0.022	16.751 ***
Self-Directed Learning	ELS1	1.000	0.517		
	ELS2	1.578	0.757	0.164	9.638 ***
	ELS3	1.726	0.859	0.169	10.21 ***
	ELS4	1.805	0.872	0.176	10.274 ***

	ELS5	1.783	0.78	0.182	9.779 ***
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Note: ***p<0.00, Chi-square = 422.826, df = 101, P = .000 TLI= 0.937,
CFI= 0.937, RMSEA= 0.089, SRMR 0.041

c. Environmental Support

Environmental support is defined as the perceived environmental conditions or perceived contextual factors outside of the student's school or beyond their personality, that provides opportunities for them to achieve a goal which is to set up a business in the future. This will be measured through three observable variables which are: government policy, financial accessibility and family support

Government policy refers to the perception of individual about whether Brunei has policies that supports the creation of new businesses. For the variable "Government policies" items from Franke and Lutjhe (2004) is utilized. "There are sufficient subsidies available for new companies"; "Qualified consultant and service support for new company is available"; "the bureaucratic procedures for founding a new company are unclear"; "State laws are adverse to running a company".

Items on financial accessibility include items from Shwarz (2009)'s "environmental support". This includes items such as "It is easy to obtain funding such as venture capital for the creation of new business."

Items on family support include items from Gelard and Saleh (2011)'s and Turulja et al (2020) "Informal network variable". this includes items such as "If I decide to become an entrepreneur, my parents will support me".

The internal reliability of the actual study is shown in Table III-4. The Internal reliability for government policy and financial accessibility is low in the

pilot study. In the actual study, the reliability for governmental policy is still below Cronbach Alpha 0.7, and if item EVP2 (Reverse coded) and EVP3 (Reverse coded) is removed reliability become 0.769. Similarly, for financial accessibility, the reliability is still below 0.6 and thus item EVF2 is removed.

<Table III-6> Internal Reliability of Instrument of Observable Variables Measuring Environmental Support

Observable Variable	Pilot (n= 67)		Actual (n=404)	
	<i>Internal Reliability (Cronbach Alpha)</i>	Total No of Items	<i>Reliability</i>	Total No of Items
Government Policy	.454	4	.593 (.762*)	8 (6)
Financial Accessibility	.398	2	.571 (.638*)	5(4)
Social Support	.777	4	.861	5

*Note: n=403 for government policy (one case excluded, listwise deletion)

* If item EVP2 (Reverse coded) and EVP3(Reverse coded) is removed reliability become .762

*If item EVF2 (Reverse coded) is removed reliability become .638

The pilot test shows a low internal reliability for governmental policy (Cronbach α = .454) and financial accessibility (Cronbach α = .398) . Due to the lack of time, a second pilot test was not conducted. However, to supplement the low internal reliability for governmental policy, only 3 items from Franke and Lutje (2011) was retained, while the final item from Franke and Lutje (2011) “There are sufficient government subsidies available for new and growing firms.” that was initially under the variable “Government policy” was moved to the

“Financial Accessibility” Variable. Additionally, to supplement this, 5 items from Farashah (2015) and Turulja et al (2020) that measures institutional regulation is added. This includes *“The support for new and growing businesses is a high priority for policy at the government level.”*.

Moreover, in response to feedbacks that advised on explaining about specific law the item was referring to, the item “Law in Brunei are unfavourable for the creation and operation of a new business” is supplemented with an explanation “(Law here refers to any law and regulations related to creating of business such as regulations for registering new businesses, obtaining Business license, importing and exporting, labour law and more)”.

For Financial Accessibility, in the pilot study there was only 2 items from (Shwarz 2009) and these are retained. Additional 2 items from Aragon-Sanchez et al (2016) items that measure “financial support“ is added which includes “My family would support me with a financial institution (access to bank account/ loans) to create company“ and one items from Franke and Lutje (2011) that was initially in the “government policy“ was also added.

For the Social support, the item from Gelard and Saleh (2011) and Turulja et al (2020) which is “If I decide to become an entrepreneur, my families will give me emotional support” is added to the actual survey.

<Table III-7> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Environmental Support

Observable Variable	Items (Coding)	B	β	S.E	CR
Government policy	EVP1	1.000	0.484		
	EVP4	1.185	0.523	0.196	6.042 ***
	EVP5	1.542	0.709	0.234	6.579 ***
	EVP6	1.337	0.598	0.210	6.353 ***
	EVP7	1.054	0.512	0.185	5.71 ***
	EVP8	1.68	0.731	0.247	6.81 ***
Financial Accessibility	EVF1	1.000	0.350		
	EVF3	2.577	0.682	0.464	5.557 ***
	EVF4	2.972	0.837	0.537	5.537 ***
	EVF5	0.871	0.431	0.193	4.516 ***
Social Support	EVS1	1.000	0.896		
	EVS2	0.998	0.935	0.042	23.963 ***
	EVS3	0.639	0.569	0.050	12.682 ***
	EVS4	0.528	0.515	0.051	10.356 ***
	EVS5	0.736	0.576	0.054	13.747***

Note: ***p<0.00, Chi-square = 316.622, df = 87, CMIN/DF= 3.639, NFI= .83, TLI= .935, CFI= .869, RMSEA= .086,, RMR= .046,

d. Entrepreneurial Self-Efficacy

This study conceptualize latent variable self-efficacy as an aggregate model of two observable variables whereby 1) confidence and 2) beliefs. This is based

on the conceptualization of Drnovšek, Wincent, & Cardon (2010).

Confidence which means the individuals' confidence in their capabilities to attain goals or specific outcome which is entrepreneurship. It will be operationalized using Wilson, Kickul and Marlino (2007) items, which was measured by a 6-item self-assessment scale. The items on this scale represent competencies related to business/entrepreneurial success, and were developed based on expert interviews with business leaders. The items included "being able to solve problems," "making decisions," "managing money," "being creative," "getting people to agree with you," and "being a leader." However, in the original questionnaire the respondent were asked to rate themselves against peers as they rated their self-efficacy level on a 5-point Likert scale (1 = a lot worse; 5 = much better). Internal reliability was .79 (middle/high school), and .82 (MBA). In this study however, it would be rephrased to "how confident are you in your ability to..." and will be on a 5 point likert scale (1= Not confident at all, 5- Very confident). The higher the value the more confident the respondent is.

Beliefs is the extent to which the individual believe that the outcome behaviour, in this case entrepreneurship, is under their control. It will be operationalised according to the "Perceived Control Behaviour" items adapted from Tsai, Chang and Peng (2016). This is measured on a 5 point likert scale where by 1 indicates strongly disagree and 5 is strongly agree. The higher the points, the more they belief that being an entrepreneur is easy or within their control. The reliability was measured at Cronbach alpha 0.7.

<Table III-8> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Self-Efficacy

Observable Variable	Pilot (n= 67)		Actual (n= 404)	
	Internal Reliability (Cronbach Alpha)	Total No of Items	Reliability	Total No of Items
Confidence	.857	6	.917	6
Beliefs	.620	6	.724	6

*Note: n=403 for Confidence (one case excluded, listwise deletion)
n=402 for Belief (two case excluded, listwise deletion)

Although the internal reliability for belief was at (Cronbach $\alpha = .620$), this research decides to retain the questionnaire and supplement the final questionnaire what this research define belief as which “*perception of your capacity to reach a certain outcome (such as starting a business of a company) and belief of how much you are able to control outcome*”

<Table III-9> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Entrepreneurial Self Efficacy

Observable Variable	Items (Coding)	B	β	S.E	CR
Confidence	EEC1	1.000	0.774		
	EEC2	1.018	0.78	0.065	15.602 ***
	EEC3	0.92	0.745	0.062	14.781 ***
	EEC4	0.984	0.8	0.061	16.101 ***
	EEC5	1.104	0.855	0.063	17.458 ***
	EEC6	0.99	0.829	0.059	16.822 ***
Beliefs	EEB1	1.000	0.63		

	EEB2	0.907	0.3	0.01	12.211***
	EEB3	0.994	0.705	0.098	10.124 ***
	EEB4	0.926	0.571	0.107	8.687 ***
	EEB5	0.843	0.431	0.421	8.227 ***
	EEB6	0.955	0.579	0.109	8.786 ***

Note: ***p<0.001, Chi-square = 125.393,, df = 34 P=.000 CMIN/DF= 3.688, NFI= 0.934, TLI= .935, CFI= v RMSEA= .087, SRMR= 0.000,

e. Entrepreneurial Orientation

This is defined as an individual perspective and is defined as the innovativeness, risk taking and pro-activeness competences that could be gained through proper entrepreneurship education or experiential learning. For Risk taking variable, 3 items from Bolton and Lane (2012) which was tested for its reliability by Koe (2016) was operationalized. This includes item such as “I like to take bold action by going into the unknown.” The internal reliability for these 3 items are Cronbach α = .766 according to Koe (2016)

For Innovativeness variable, 4 items from Bolton and Lane (2012) which was tested for its reliability by Koe (2016) was operationalized. This includes item such as “I often like to try new and unusual activities that are not typical but not necessarily risky.” The internal reliability for these 4 items are Cronbach α = .843 according to Koe (2016)

For proactiveness variable, 3 items from Bolton and Lane (2012) which was

tested for its reliability by Koe (2016) was operationalized. This includes item such as “*I usually act while anticipating or predicting problems, needs or changes in the future* ” The internal reliability for these 3 items are Cronbach $\alpha = .758$ according to Koe (2016)

<Table III-10> Internal Reliability of Instrument of Observable Variables Measuring Entrepreneurial Orientation

Observable Variable	Pilot (n= 67)		Actual (n= 357)	
	Internal Reliability (Cronbach Alpha)	Total No of Items	Reliability	Total No of Items
Risk Taking	.566	3	.784	6
Innovativeness	.646	4	.715 (.778)	6 (5)
Proactiveness	.733	3	.834	6

Note: n=402 for Risk taking (twocase excluded, listwise deletion)

Note: n=402 for Proactiveness (one case excluded, listwise deletion)

*If item EO12 (Reverse coded) is removed reliability become .778

Although the internal reliability for Innovativeness was lower than previous studies (Cronbach $\alpha = .646$), this research retains the items. It is thought that the items maybe too abstract for the students to understand hence supplementary explanation to the instruction was added such as “The following are questions related to your degree of openness and creativity as well as how ready you are to follow new ways when you are given new projects, assignments, activities or opportunities which you do not have much information about, in daily life, school or at work.”. Additionally 2 items from Gorostiaga et al (2016) was also operationalized. This include question such as “I like to work and take part in groups where new or innovative ideas emerge”. This is to put more familiar

context for the students. They had tested for the items' Internal Reliability using Ordinal Omega Coefficients (0.75).

For Proactiveness, the questions are also retained and additional explanations are added to the instruction. Additionally 3 items from Gorostiaga et al (2016) was also operationalized. This include question such as "In class I'm often the first person to propose things."They had tested for the items' Internal Reliability using Ordinal Omega Coefficients (0.71).

For Risk taking, the questions are also retained and additional explanations are added to the instruction. 4 items from Gorostiaga et al (2016) was also operationalized. This include question such as "In order to create something of value you have to be prepared to make mistakes". They had tested for the items' Internal Reliability using Ordinal Omega Coefficients (0.68)

<Table III-11> Confirmatory Factor Analysis of Instruments of Observable Variables Measuring Entrepreneurial Orientation

Observable Variable	Items (Coding)	B	β	S.E	CR
Risk Taking	EOR1	1.000	0.561		
	EOR2	1.367	0.725	0.142	9.617 ***
	EOR3	1.186	0.598	0.139	8.539 ***
	EOR4	1.293	0.726	0.134	9.624 ***
	EOR5	1.054	0.582	0.126	8.386 ***
	EOR6	1.182	0.653	0.131	9.039 ***
Innovativeness	EOI1	1.000	0.573		
	EOI2R	0.136	0.076	0.102	1.324 ***
	EOI3	1.331	0.721	0.135	9.875 ***

	EOI4	1.266	0.709	0.129	9.775 ***
	EOI5	1.114	0.662	0.119	9.362***
	EOI6		0.635		
Proactiveness	EOP1	1.114	0.665	0.107	10.386 ***
	EOP2	1.283	0.746	0.113	11.319 ***
	EOP3	1.227	0.783	0.105	11.701 ***
	EOP4	0.777	0.449	0.104	7.456 ***
	EOP5	1.245	0.665	0.133	9.393 ***
	EOP6	1.132	0.681	0.107	10.569 ***

Note: ***p<0.001, Chi-square = 420.244, df = 132, P= .000 CMIN/DF= 3.184 NFI= .83, TLI= .856, CFI= .876, RMSEA= .078,

After the modifications after the pilot test, the final variables and instruments are shown in table III-12

<Table III-12> List of Final Survey Variables and Instruments

Category	Variable	Item Code (* items removed in final analysis)	Instrument	Total items
Independent Variable	Entrepreneurial intention	Goal Determination	I-1-6 Linan and Chen (2009)	11
		Action Plan	II 1-5 Cho,& Lee (2016)	
Dependent variable	Entrepreneurial Self-Efficacy	Confidence	IV-1-6 Wilson, Kickul and Marlino (2007)	12
		Belief	IV-1-6 (IV-2, 5 removed) Tsai, Chang and Peng (2016)	
		Government	V 1-8 Franke and Lutjhe	18

	Environmental Support	Policies	(VI- 2, 3 removed)	(2004); Farashah (2015); Turulja et al (2020)	
		Financial Accessibility	VI 1-5 (*VI-2 removed)	Shwarz (2009); Aragon-Sanchez et al (2016); Franke and Lutjhe (2004);	
		Social Support	VII-1-5	Gelard and Saleh (2011); Turulja et al (2020)	
	Entrepreneurial Learning	Classroom instruction	VIII-1-6	Developed from conceptualization by Mets, Kozlinsk & Raudsaar (2017); Bloom and Leach (2007)	16
		Workplace Learning	IX 1-5	Developed from conceptualization by Ramsgaard and Østergaard, (2017)	
		Self Directed Learning	XI 1- 5	Developed from conceptualization by Ramsgaard and Østergaard, (2017) Tseng, (2012)	
	Entrepreneurial Orientation	Risk Taking	XII -1-6	Bolton and Lane (2012) and Gorostiaga et al (2016)	18
		Innovativeness	XIII 1-6 *XIII-05 removed		
		Proactiveness	XIV 1-6		
Total					75

4. Data Collection

a. Pilot Study

For the pilot study, data was collected using online survey forms, by identifying a few specific teachers in IBTE Schools. The purpose was to explore the usefulness of the survey to be used in the main study, assessing the time taken by students to complete it, the understandability and readability of the format of the online survey and how understandable the language was. In general it takes students to complete the survey within 8-11 minutes. After the pilot study, random 15 students were contacted and asked for verbal and written feedback on the questionnaires. About 75 responses were received for the pilot study and 67 was used.

b. Actual Study

As the study involves governmental schools and for formality, the purpose of this research was informed clearly to the head of the Institute of Brunei Technical Education for formalities, and the actual survey was sent to the Department of Research for Institute of Brunei Technical Education (IBTE) as well as to the respective heads of each schools for government school for formalities through both link and 100 physical questionnaires. For private school, it was sent to the principal of private schools including Laksamana College, Cosmopolitan college. Micronet, Kemuda Institute, Mahakarya Institute and BICPA through online link and physical questionnaires only to Kemuda institute

as they have requested for it.

For Ethical purposes, the first part of the survey informed that agreeing to complete the questionnaire was voluntary and it was implied, if they agreed to participate, that they had given their informed consent to participate in the survey and the use of the information for this study only for academic purposes. They were also informed that the collection of contact details is only for the purpose of giving incentives and will be deleted after incentives are given.

5. Data Screening and Analysis

a. Data Screening

The data collected through both online and physical questionnaire (n= 448) were screened according to specific criteria. Firstly, the eligibility of the respondents were checked and respondents who are not in TVET level 4 were excluded (6 responses). Secondly, duplicated submissions from both online questionnaire and physical questionnaire were checked and excluded (4 responses)

Moreover, missing values were checked using SPSS for its characteristics. The percentage of remaining missing value is 2.9 % and these missing data is from the physical questionnaires only. little's Missing Completely at Random Test (MCAR test) was perform to the missing data and it shows significant Chi-square results and thus it indicates that the missing data was not randomly distributed (Chi-Square = 1145.798, DF = 738, Sig. = .000). As the data is not missing at random, it indicates a need to be cautious especially in the researcher is treating the missing data using Listwise Deletion or singularly impute missing

values. However, Schafer (1999) asserted that a missing rate of 5% holds no significant consequence on statistical inferences and as the missing value is 2.9%, it is safe to use observed data. For SEM analysis, missing data flag which is 999 is input into the missing data.

After that, outliers were excluded using several criterion. Univariate outliers are checked by examining whether the observations for each questionnaire items is ± 3 Standard Deviation away from the mean using the z score (11 responses) and checking whether this seemed to be a random process. Additionally, this is cross checked with Q-Q plot and box plot as well as pattern of the data is looked to see whether the data to be excluded seemed to be an outlier.

Since SEM is a multivariate analysis and thus multivariate outliers were also examined in terms of Mahalanobis D-squared and thus, cases with outliers were excluded (5 responses). Moreover, those whose age are 26 above are also excluded from this study (8 responses). Excluded respondent ID and the reasons are in Appendix 6.

The descriptive analysis of the sample population (n=404), as shown in Table III-14, shows that female (n=243, 61.%) make more of the sample population than male (n=161, 39.9%). Most of the respondents age group is between 19 to 22 years old (n=320, 79%), followed by those in age range of 23 to 26 years old (n=51, 13%) and those in the age range of 16-18 are the least making up of only 8% (n=33). the population consist of mostly students from governmental organizations, making up about 80.7% while private institution make up onlu 19.3% of the population. Among the governmental vocational institution, most students are from School of Business (16.6%) School of

Building technology services (15.6%), School of Information and communications technology (16.8%) and the least respondents is from School of Energy and Engineering Satellite (EES) making up only 1.5%. Meanwhile, for the private institution majority of respondents are from Kemuda Institute (8.9%) while the least is from Mahakarya Institute of Arts Asia (1%) and there is no respondents for BICPA even though questionnaire has been asked to be distributed.

<Table III-13> Descriptive Statistics of the Respondents

Demographic Variables		<i>Freq</i>	<i>%</i>	Mean	Median	SD	
Gender	Male	161	39.9	1.6	1	.490	
	Female	243	60.1				
Age	16-18	33	8	20.44	20	1.676	
	19-22	320	79				
	23-26	51	13				
Vocational Institution	Governmental Institution	326	80.7	1.19	1	.395	
	Private institution	78	19.3				
	Governmental Institution						
	School of Aviation	22	5.4	5.57	5	3.519	
	School of Business	67	16.6				
	School of Building technology services	63	15.6				
	School of Energy and Engineering Central (EEC)	25	6.2				
	School of Hospitality and tourism	51	12.6				
	School of Information and communications technology	68	16.8				
	School of Energy and Engineering Satellite (EES)	6	1.5				
	School of Energy and Engineering Satellite (EES)	24	5.9				
	Private institution						
	Laksamana College of Business (LCB)	7	1.7				
Cosmopolitan College of Commerce and Technology (CCCT)	11	2.7					

	Kolej Institute of Graduate Studies (KIGS)	9	2.2			
	Kemuda Institute (KI)	36	8.9			
	Micronet International College	11	2.7			
	BICPA	0	0			
	Mahakarya Institute	4	1.0			
Attended internship/work attachment	Yes	296	73.3	1.27	1	.443
	No	108	26.7			
Place of attachment	1.Government	143	35.4	2.4	3	1.172
	2.Semi private company	40	9.9			
	3.Private company	136	33.7			
	4.None	85	21.0			
Have own business	Yes	116	28.7	1.71	2	.453
	No	288	71.3			
Have family business*	Yes	134	33.2	1.67	2	.472
	No	268	66.3			

n=404

*n=402 for family business (2 missing cases)

b. Data Analysis

The data collected in this study will use IBM SPSS Statistics 26.0 for Windows and Mplus 7.

<Table III-14> Data Analysis Methods

Research Assumptions and objectives	Data Analysis	Software
Internal Reliability	Chronbach's Alpha	IBM SPSS Statistics 26.0
Univariate normality	Box plot to detect outliers	IBM SPSS Statistics 26.0
	Descriptive Statistics	IBM SPSS Statistics 26.0

	(Frequency, Skewness and Kurtosis)	
Multivariate normality	Multivariate normality	IBM SPSS Statistics 26.0
Correlation coefficient and Collinearity	Correlation, Tolerance and VIF	IBM SPSS Statistics 26.0
Verify Goodness of fit of the hypothesised structural equational model, Discriminant validity	Confirmatory Factor Analysis	Mplus 7
	AVE	Mplus 7 + formula
Direct effects between entrepreneurial intention and other variable	Model Testing	Mplus 7

Since the model includes factors and mediating effects, this study opts for Structural Equation Modelling (SEM) as the means to test its hypotheses. SEM is defined as a multivariate technique combining aspects of multiple regression and factor analysis allowing simultaneous examination of a series of intrrelated dependence relationships among the measured variables and latent constructs as well as between several latent constructs (Hair et al, 2010, p634). Simply, SEM is a collective of statistical models that investigate and explain the relationship between multiple variables.

<Table III-15> Overall Model Fit Indices and Acceptable Level of Fit Applied in this Thesis

Statistic measurement	Test Indices	Threshold for this research	Threshold for this research
Chi sq	χ^2 p value	Hair et al (2010); Satorra and Bentler (1994)	$05 < p \leq 1.00$

		$0 \leq \chi^2 \leq 2df$ is good fit $2df < \chi^2 \leq 3df$ acceptable fit $.05 < p \leq 1.00$ good fit $.01 \leq p \leq .05$ Poor fit	
Absolute fit measurement	Root Mean Square Error of Approximation (RMSEA)	Browne and Cudeck (1993), RMSEA values $\leq .05$ can be considered as a good fit, values between $.05$ and $.08$ as an adequate fit, and values between $.08$ and $.10$ as a mediocre fit, whereas values $> .10$ are not acceptable. Hu and Bentler (1999) suggested an RMSEA of less than $.06$ as a cutoff criterion	≤ 0.08
	CMIN/df	Marsh & Hocevar (1985) < 5 Kline (1998) < 2 or 3	< 5
	Goodness of Fit index, GFI	The usual rule of thumb for this index is that $.95$ is indicative of good fit relative to the baseline model, while values greater than $.90$ are usually interpreted as indicating an acceptable fit	≥ 0.9
	SRMR	$0 \leq SRMR \leq .05$ Good fit $.05 < SRMR \leq .10$ Acceptable fit	
Incremental fit measurement	Normed fit index, NFI	NFI values range from 0 to 1, with higher values indicating better fit. The usual rule of thumb for this index is that $.95$ is indicative of good fit relative to the baseline model (Kaplan, 2000, p. 107), *affected by sample size	≥ 0.9
	TLI	Tucker-Lewis (1973) Schumacker and Lomax (2010)The fit index range between 0 and 1, a perfect fit produce TLI/NFI=1 Values close to 0.95 reflects a good fit.,	≥ 0.9
	Comparative fit index CFI	The CFI ranges from zero to one with higher values indicating better fit. A rule of thumb for this index is that $.97$ is indicative of good fit relative to the independence model, while values greater than $.95$ may be interpreted as an acceptable fit. Hu and Bentler (1999); hair et	≥ 0.9

		al (2010); Kline (2011)	
Parsimonious fit measurement	Parsimony normed fit index PNFI	higher values indicating a more parsimonious fit.	≥ 0.5
	PCFI	≥ 0.5	≥ 0.5
	PGFI (Parsimony of goodness fit index)	≥ 0.5	≥ 0.5

For the Confirmatory Factor Analysis, the CMIN/df (=chi-squared divides by degree of freedom). CFI assumes that all latent variables are uncorrelated (null/independence model) and compares the sample covariance matrix with this null model. RMSEA presents how well the model, with unknown but optimally chosen parameter estimates, would fit the population's covariance matrix. NFI assesses the model by comparing the χ^2 value of the model to the χ^2 of the null model. RMR is the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model (Hooper et al., 2008).

IV. Results

1. Characteristics of the Sampled Respondents

In order to understand further the characteristics or profile of the sampled respondents, descriptive statistics, cross tabulation descriptive statistics and to explore whether the mean of each observable variables differs according to each demographic variables (gender, age, school type, work attachment experience, own business and family business).

a. Descriptive Statistics

As part of the demographic characteristics, the mean value of the response of the overall sample population for each observable variable was found to be between 2.9575 to 3.9901. For the latent variable entrepreneurial learning, the mean value of its observable variable career goal (3.6215) and action plan (3.1406).

For the latent variable entrepreneurial learning, the mean value of its observable variable classroom instruction (2.9575), workplace learning (3.1771) and self-directed learning (3.2546) For the latent variable environmental support the mean value of its observable variable governmental policy (3.3403), financial accessibility (3.0792) and social support (3.9901). For the latent variable entrepreneurial self-efficacy the mean value of its observable variable Confidence (3.2550) and Beliefs (3.2416). For the latent variable entrepreneurial orientation the mean value of its observable variable risk taking (3.6860), innovativeness

(3.8396) and proactiveness (3.6079).

<Table IV-1> Descriptive Statistics for the Variables in the Model

Variable (n=404)	Min.	Max.	Mean	SD
Entrepreneurial Intention				
Career goal	1.67	5.00	3.6215	0.64537
Action Plan	1.00	5.00	3.1406	0.73227
Entrepreneurial Learning				
Classroom Instruction	1.00	5.00	2.9575	0.83125
Workplace learning	1.00	5.00	3.1771	0.82796
Self-Directed Learning	1.20	5.00	3.2546	0.80034
Environmental Support				
Government Policy	1.83	5.00	3.3403	0.48611
Financial Accessibility	1.50	5.00	3.0792	0.57494
Social Support	2.20	5.00	3.9901	0.64157
Entrepreneurial Self-Efficacy				
Confidence	1.00	5.00	3.2550	0.75019
Beliefs	1.83	5.00	3.2416	0.55371
Entrepreneurial Orientation				
Risk Taking	1.50	5.00	3.6860	0.60394
Inovativeness	2.20	5.00	3.8396	0.58298
Proactiveness	2.00	5.00	3.6079	0.59503

b. Profile of Sampled Respondents

The table below shows that students who have experience work attachments are mostly from government school rather than private school. Moreover, those who owns their own business and those whose family has businesses are mostly between the age range of 19 to 22 years old.

<Table IV-2> Cross Tabulation of the Sampled Respondents Characteristics

Variable	Observable variable	Gender		School		Work Attachment		Own Business		Family Business	
		Male	Female	Government	Private	Yes	No	Yes	No	Yes	No
Gender	Male	-	-	-	-	118	43	38	123	41	118
	Female	-	-	-	-	178	65	78	165	92	150
School	Government	119	207		-	271	55	91	235	102	222
	Private	36	42		-	25	53	25	53	32	46
Age	16-18	14	19	26	7	16	17	10	23	8	23
	19-22	122	198	263	57	237	83	90	230	113	207
	23-26	25	26	37	14	43	8	16	35	13	38

Unit= person

c. Differences in Observed Variable Values for Each Latent Variable

The influences of age on the exogenous variable entrepreneurial intention and its observable variables were compared as well as the influences of age on other endogenous variables and their observable variables were also compared to further explore the characteristics of the population. Independent non-parametric test was used to test effect of variables that consist of two categories such as gender, work experiences, family business and own business. Whereas, ANOVA was used to test effect of variables with three or more variables such as age and work attachment types.

i) Gender Differences

The differences of male and female students were explored and result of T-test have shown no significant effect of gender on the differences between male and female's entrepreneurial Intention, entrepreneurial learning, environmental support and entrepreneurial orientation. However, the difference between the means of confidence of both male and female population are statistically different ($z = -2.351, P < .05$). This indicates that male generally have higher confidence in their ability than female in this research.

<Table IV-3> Differences in Means According to Gender

Variable	Mann Whitney U test	
	Mean Rank	Z Value

Entrepreneurial Intention	Career Goal	Male	198.84	-0.514
		Female	204.92	
	Action Plan	Male	205.10	-0.366
		Female	200.78	
Entrepreneurial Learning	Classroom Instruction	Male	211.33	-1.240
		Female	196.65	
	Workplace learning	Male	204.64	-0.301
		Female	201.08	
	Self-Directed Learning	Male	201.61	-0.125
		Female	203.09	
Environmental Support	Government Policy	Male	212.89	-1.476
		Female	195.61	
	Financial Accessibility	Male	210.55	-1.142
		Female	197.17	
	Social Support	Male	190.67	-1.666
		Female	210.34	
Entrepreneurial Self-Efficacy	Confidence	Male	219.19	-2.351*
		Female	191.44	
	Beliefs	Male	200.29	-0.311
		Female	203.96	
Entrepreneurial Orientation	Risk Taking	Male	214.51	-1.691
		Female	194.54	
	Inovativeness	Male	198.92	-0.504
		Female	204.87	
	Proactiveness	Male	211.64	-1.285
		Female	196.44	

Note 1: Freq Male (n=161), Female (n243)

Note 2: *p<.05

Note 3: Test of Normality Kolmogorov smirnov is P<.05, and Shapiro wilk test p<.05

Note 4: Data is not normally distributed- Non parametric Mann Whitney test was runned

d. School-type Differences

The differences of students from both government and private school were explored and result of test have shown no significant differences in the mean of students from government and private schools for most observable variables. However, the difference between the means of self-directed learning perception ($z = -2.088$, $P < .05$), government policy ($z = -2.378^*$, $P < .05$) and confidence ($z = -1.763^*$, $P < .05$) of both population are statistically different. This indicates that students in private institute generally have higher perception of learning that occurs through self-directed learning opportunities, higher perception of government policies, and higher confidence in their own ability, than those in the public institutions.

<Table IV-4> Differences in Means According to School Type

Variable			Mann Whitney U test	
			Mean Rank	Z Value
Entrepreneurial Intention	Career goal	Government Inst	197.61	-1.726
		Private Inst	222.93	
	Action Plan	Government Inst	199.52	-1.053
		Private Inst	214.94	
Entrepreneurial Learning	Classroom Instruction	Government Inst	199.14	-1.186
		Private Inst	216.55	
	Workplace learning	Government Inst	196.59	-2.088
		Private Inst	227.20	
	Self-Directed Learning	Government Inst	196.29	-2.195*
		Private Inst	228.46	
Environmental	Government Policy	Government Inst	195.83	-2.378*
		Private Inst	230.37	

Support	Financial Accessibility	Government Inst	199.15	-1.193
		Private Inst	216.49	
	Social Support	Government Inst	202.86	-0.127
		Private Inst	201.00	
Entrepreneurial Self-Efficacy	Confidence	Government Inst	197.52	-1.763*
		Private Inst	223.32	
	Beliefs	Government Inst	200.65	-0.655
		Private Inst	210.24	
Entrepreneurial Orientation	Risk Taking	Government Inst	205.22	-0.961
		Private Inst	191.14	
	Inovativeness	Government Inst	199.90	-0.919
		Private Inst	213.36	
	Proactiveness	Government Inst	198.18	-1.527
		Private Inst	220.57	

Note 1: Freq No Govt Institution (n=326), Private Institution (n=78)

Note 2: *p<.05

Note 3: Test of Normality Kolmogorov smirnov is P<.05, and Shapiro wilk p<.05

Note 4: Data is not normally distributed- Non parametric test was runned

e. Work Attachment Differences

The differences of students who have work attachment and those who don't were explored and result of test have shown no significant differences in the mean of students from who have work attachment experience or not, for most observable variables.

<Table IV-5> Differences in Means According to Exposure to Work Attachment

Variable			Mann Whitney U test	
			Mean Rank	Z Value
Entrepreneurial Intention	career goal	Work Attachment	197.14	-1.532
		No Work Attachment	217.19	
	Action Plan	Work Attachment	198.70	-1.089
		No Work Attachment	212.92	
Entrepreneurial Learning	Classroom Instruction	Work Attachment	201.39	-0.317
		No Work Attachment	205.54	
	Workplace learning	Work Attachment	200.86	-0.468
		No Work Attachment	206.98	
	Self-Directed Learning	Work Attachment	201.12	-0.396
		No Work Attachment	206.29	
Environmental Support	Government Policy	Work Attachment	197.60	-1.415
		No Work Attachment	215.93	
	Financial Accessibility	Work Attachment	197.88	-1.333
		No Work Attachment	215.17	
	Social Support	Work Attachment	202.10	-0.116
		No Work Attachment	203.61	
Entrepreneurial Self-Efficacy	Confidence	Work Attachment	201.76	-0.212
		No Work Attachment	204.52	
	Beliefs	Work Attachment	202.30	-0.058
		No Work Attachment	203.05	
Entrepreneurial	Risk Taking	Work Attachment	206.79	-1.228

Entrepreneurial Orientation	Innovativeness	No Work Attachment	190.75	-0.268
		Work Attachment	201.57	
	Proactiveness	No Work Attachment	205.06	-0.040
		Work Attachment	202.64	
		No Work Attachment	202.12	

Note 1: Work Attachment (n=295), No Work Attachment (n=108)

Note 2: *p<.05

Note 3: Test of Normality Kolmogorov smirnov is P<.05, and Shapiro wilk test p<.05

Note 4: Data is not normally distributed- Non parametric Mann Whitney test was runned

f. Owning a Business Differences

The differences in these means students who have possess their own business and not were explored and result of test have shown that there is significant differences in the mean of students who owns a business and those that do not, on all variables. This means that those who owns a business have a higher mean in all observable variables. For example, the group that owns a business has a higher perception of entrepreneurial learning.

In this research, the students were asked if they have experienced operating small businesses before. In general creating a small firm or company requires formal registration which is not easy to acquire by students at post secondary level, this “small business” refers to informal and unregistered small businesses that is operated on their own time as a part time or hobby, either through selling of things on online platform such as instagram or on market.

<Table IV-6> Differences in Means According to Owning a Business

Variable			Mann Whitney U test	
			Mean Rank	Z Value
Entrepreneurial Intention	Career Goal	Own Business	273.84	-7.820*
		No Own Business	173.77	
	Action Plan	Own Business	274.88	-7.947*
		No Own Business	173.35	
Entrepreneurial Learning	Classroom Instruction	Own Business	271.74	-7.584*
		No Own Business	174.61	
	Workplace learning	Own Business	268.33	-7.221*
		No Own Business	175.98	
	Self-Directed Learning	Own Business	265.28	-6.889*
		No Own Business	177.21	
Environmental Support	Government Policy	Own Business	232.53	-3.324*
		No Own Business	190.40	
	Financial Accessibility	Own Business	226.77	-2.685*
		No Own Business	192.72	
	Social Support	Own Business	238.44	-3.946*
		No Own Business	188.03	
Entrepreneurial Self-Efficacy	Confidence	Own Business	264.48	-6.808*
		No Own Business	177.54	
	Beliefs	Own Business	262.33	-6.570*
		No Own Business	178.40	
Entrepreneurial Orientation	Risk Taking	Own Business	246.25	-4.801*
		No Own Business	184.88	
	Inovativeness	Own Business	245.29	-4.699*
		No Own Business	185.27	
	Proactiveness	Own Business	258.42	-6.132*
		No Own Business	179.98	

Note 1: OwnBusiness (n=116), No Own business (n=288)

Note 2: *p<.05

Note 3: Test of Normality Kolmogorov smirnov is P<.05, and Shapiro wilk test p<.05

Note 4: Data is not normally distributed- Non parametric Mann Whitney test was runned

g. Family Business Differences

The differences in the means students who has family member that conducts businesses were explored and result of test have shown that there is significant differences in the mean of students who owns a business and those that do not, on all variables. This means that those who has family business have a higher mean in all observable variables. For example, the group family owns a business has a higher entrepreneurial intention, perception of entrepreneurial learning, perception of environmental support and more.

<Table IV-7> Differences in Means According to Family Business

Variable			Mann Whitney U test	
			Mean Rank	Z Value
Entrepreneurial Intention	Career goal	Family Business	245.94	-5.441*
		No Fam Business	179.28	
	Action Plan	Family Business	243.25	-5.120*
		No Fam Business	180.63	
Entrepreneurial Learning	Classroom Instruction	Family Business	235.44	-4.152*
		No Fam Business	184.53	
	Workplace learning	Family Business	241.42	-4.891*
		No Fam Business	181.54	
	Self-Directed Learning	Family Business	242.93	-5.077
		No Fam Business	180.79	
Environmental Support	Government Policy	Family Business	215.43	-1.723*
		No Fam Business	194.53	

	Financial Accessibility	Family Business	222.71	-2.621*
		No Fam Business	190.89	
	Social Support	Family Business	230.02	-2.621*
		No Fam Business	187.24	
Entrepreneurial Self-Efficacy	Confidence	Family Business	235.72	-4.199*
		No Fam Business	184.39	
	Beliefs	Family Business	236.82	-4.331*
		No Fam Business	183.84	
Entrepreneurial Orientation	Risk Taking	Family Business	219.32	-2.184*
		No Fam Business	192.59	
	Inovativeness	Family Business	227.62	-3.204*
		No Fam Business	188.44	
	Proactiveness	Family Business	240.67	-4.797*
		No Fam Business	181.92	

Note 1: Family Business (n=134), No Family business (n=268)

Note 2: *p<.05

Note 3: Test of Normality Kolmogorov smirnov is P<.05, and Shapiro wilk test p<.05

Note 4: Data is not normally distributed- Non parametric Mann Whitney test was runned

2. Fitness of the Structural Equation Model

a. Univariate and Multivariate Normality of the Model

The descriptive statistics of entrepreneurial intention, entrepreneurial learning, environmental support, entrepreneurial self-efficacy and orientation are as follows in <Table IV-8>.

<Table IV-8> Normality Test of the Model

Latent Variable	Observable variable	Skewness Index	Kurtosis
Entrepreneurial Intention	Career Goal	0.026	-0.163
	Action Plan	-0.126	-0.133
Entrepreneurial Learning	Classroom Instruction	0.008	-0.213
	Workplace learning	-0.119	-0.232
	Self-Directed Learning	-0.075	-0.287
Environmental Support	Government Policy	0.678	0.747
	Financial Accessibility	0.068	0.554
	Social Support	-0.196	-0.680
Entrepreneurial Self-Efficacy	Confidence	-0.115	0.112
	Beliefs	0.212	0.540
Entrepreneurial Orientation	Risk Taking	-0.087	-0.039
	Inovativeness	0.103	-0.621
	Proactiveness	0.144	-0.300
Multivariate		31.821 CR=15.22	

The multivariate kurtosis index of these observed variables is statistically significant (Multivariate index = 31.821, Critical ratio=CR=15.22) shows that multivariate normality is not met and the Critical ratio C.r has to be below the acceptable range of 5.000. However, Kline (2011) recommended using more precise measures of skewness index (SI) and kurtosis index (KI) to detect severe non-normality. It has been suggested that “Variables with absolute values of SI > 3.0 are described as ‘extremely’ skewed”; and “absolute values of KI > 10.0 suggest a problem, and absolute values of KI > 20.0 indicate a more serious one” (Kline, 2011). Relating to this, the Skewness Index are not greater than 3

and and Kurtosis index of the variables are not greater than 10. The skewness ranges from -0.196 to 0.678 and kurtosis ranging from -0.680 to 0.747 .

b. Correlation and Multicollinearity Among Observable Variables

Pearson correlation were utilized to examine the complex relationships among the observable variables. The bivariate correlations underlying the structural equational model are shown in Table IV-9. The correlations between most observational variable items were statistically significant verifying the linearity in the observable variables that is investigated. Moreover, the correlation coefficient between the observable variables of each latent variable was generally larger than the correlation coefficient between the observed variables of different latent variables, this means that the concept validity is verified.

Davis (1971) considered the variables to have very strong association if the coefficient was 0.70 or higher; having substantial association if the coefficient was between 0.5 to 0.69 ; having moderate association if the coefficient is between 0.3 to 0.49 , and having low association if coefficient is between 0.1 to 0.29 . Meanwhile, Hopkins (1997) considered that there is near or almost perfect correlation if the coefficient is 0.9 to 1 ; very large correlation if the coefficient is 0.7 to 0.9 ; large correlation if the coefficient is between 0.5 to 0.7 ; moderate correlation if the coefficient is between 0.3 to 0.5 ; and small correlation if the coefficient is between 0.1 to 0.3 . A high correlation is shown between Self-directed learning and Work based learning ($r=.751$, $p<.01$) as well as classroom instruction and workplace learning ($r=.732$, ($R=.751$, $p<.01$))

There are positive, statistically significant with moderate correlation between

entrepreneurial intention and entrepreneurial learning ($r = .538 \sim .453, p < .01$), entrepreneurial self-efficacy ($r = .663 \sim .586, p < .01$). Meanwhile there is a positive, statistically significant with moderate to low correlation between Entrepreneurial intention and environmental support ($r = .404 \sim .427, p < .01$) and orientation ($r = .470 \sim .239, p < .01$). All of the are statistically significant indicating that the outcome are dependent on the student's perception of each observable variable.

<Table IV-9> Correlation Coefficient of the Observable Variables

Latent Variable	Observable variable	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬
Entrepreneurial Intention	① Career goal	1												
	② Action Plan	.639**	1											
Entrepreneurial Learning	③ Classroom Instruction	.496**	.538**	1										
	④ Workplace Learning	.509**	.453**	.764**	1									
	⑤ Self-Directed Learning	.510**	.515**	.741**	.776**	1								
Environmental Support	⑥ Government Policy	.322**	.404**	.312**	.306**	.313**	1							
	⑦ Financial Accessibility	.227**	.292**	.207**	.216**	.238**	.403**	1						
	⑧ Social Support	.404**	.241**	.258**	.250**	.255**	.312**	.440**	1					
Entrepreneurial Self-Efficacy	⑨ Confidence	.594**	.663**	.582**	.602**	.583**	.442**	.335**	.263**	1				
	⑩ Beliefs	.586**	.589**	.573**	.515**	.559**	.316**	.295**	.285**	.651**	1			
Entrepreneurial Orientation	⑪ Risk Taking	.287**	.239**	.267**	.328**	.296**	.217**	.154**	.271**	.315**	.298**	1		
	⑫ Innovativeness	.386**	.300**	.360**	.471**	.459**	.312**	.160**	.379**	.375**	.345**	.542**	1	
	⑬ Proactiveness	.470**	.448**	.464**	.538**	.504**	.376**	.246**	.350**	.582**	.488**	.453**	.613**	1

Note 1: ***p<0.01

The presence of multicollinearity implies that one is using redundant information in the model. Multicollinearity is assessed by examining tolerance and the Variance Inflation Factor (VIF). Small tolerance value indicates that the variable under consideration is almost a perfect linear combination of the independent variables already in the equation and that it should not be added to the regression equation. All variables involved in the linear relationship will have a small tolerance and should be greater than 0.1.

The Variance Inflation Factor (VIF) measures the impact of collinearity among the variables in a regression model. The Variance Inflation Factor (VIF) is $1/\text{Tolerance}$, it is always greater than or equal to 1. There is no formal VIF value for determining presence of multicollinearity. Values of VIF that exceed 10 are often regarded as indicating multicollinearity.

The multi-collinearity for the value items are shown in Table IV-10. The VIF is found to be between 1.444 and 3.516 while the tolerance is shown to be between 0.284 and 0.705 VIF should not be greater than 10 and tolerance should be greater than 0.1

<Table IV-10> Multi-Collinearity Between the Observable Variable of Each Latent Variable

Latent Variable	Observable variable	Tolerance (>.1)	VIF (<10)
Entrepreneurial Intention	① Career goal	0.506	1.977
	② Action Plan	0.479	2.090
Entrepreneurial Learning	③ Classroom Instruction	0.322	3.101
	④ Workplace learning	0.284	3.516
	⑤ Self-Directed Learning	0.317	3.152
Environmental Support	⑥ Government Policy	0.688	1.454
	⑦ Financial Accessibility	0.693	1.444
	⑧ Social Support	0.689	1.450
Entrepreneurial Self Efficacy	⑨ Confidence	0.357	2.803
	⑩ Beliefs	0.474	2.108
Entrepreneurial Orientation	⑪ Risk Taking	0.675	1.481
	⑫ Innovativeness	0.477	2.095
	⑬ Proactiveness	0.452	2.214

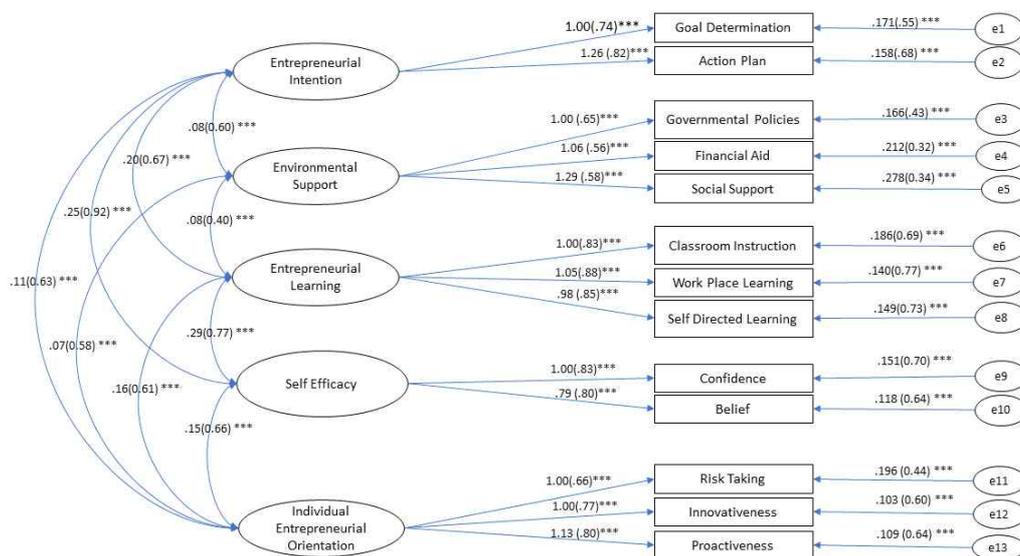
c. Fitness of the Measurement Model

To investigate the first research hypothesis and objectives, and before to conducting the path analysis, Confirmatory Factor Analysis discriminant validity, convergent validity and construct reliability was performed to confirm the appropriateness of the variables in this study.

d. Confirmatory Factor Analysis

The relationship among the latent variable entrepreneurial intention,

entrepreneurial learning, environmental support, entrepreneurial self-efficacy and entrepreneurial orientation and its observable variables were tested on a 5 factor measurement model using confirmatory factor analysis as shown in Diagram 6.



[Figure IV-1] Confirmatory Factor Analysis

Several model of fit indices were inspected to examine the overall model fit. The CFA for the value items are Chi-square value did not show acceptable fit ($\chi^2= 203.222$ $df= 59$ $P= 0.000$) as it is significant indicating that the model predicted relations that were significantly different from the relationship observed in the sample.

However, other measurement shows acceptable fit including TLI= 0.931 CFI= 0.948 , RMSEA= 0.078, SRMR=. 0.042 and thus the total goodness of fit was determined to be acceptable according to the threshold set in this research as shown in table IV-11. Consequently, the fit indices indicates that the

hypothesized measurement model fits the data well.

<Table IV-11> Measure of Goodness of Fit

Statistic Measurement	Fit Indices	Threshold for this Research	Result	Model Fit Verification
Chi Square		P>0.05	($\chi^2= 203.222$ df= 59 P= 0.000)	Not acceptable fit
Absolute fit measurement	RMSEA	≤ 0.08	0.078	Borderline
	SRMR	≤ 0.08	0.042	Good fit
Incremental fit measurement	TLI	≥ 0.9	0.948	Acceptable fit
	CFI	≥ 0.9	0.931	Acceptable fit

e. Construct Validity

Two main components of construct validity are: (a) convergent validity and (b) discriminant validity. In the context of CFA, convergent validity is determined if all of the items in a scale have high factor loadings for a latent construct. Convergent validity can be established in CFA through size of the factor loadings (above 0.7) and variance extracted (above 0.5) to indicate adequate convergence (Hair et al., 2011). In other words the value of the standardised regression weights determine the strength of a relationship and should be at the minimum β of 0.5 although those above 0.7 are more desirable. All of the observable variables are higher than 0.7 except government policy ($\beta= 0.636$), financial accessibility ($\beta= 0.598$) and social support ($\beta= 0.609$) are below 0.7.

<Table IV-12> Convergence Validity

Latent Variable	Observable variable	B	β	S.E	T
Entrepreneurial Intention →	① Career goal	1.000	0.781	0.029	17.474 ***
	② Action Plan	1.258	0.807	0.032	18.339 ***
Entrepreneurial Learning →	③ Classroom Instruction	1.000	0.854	0.034	20.988 ***
	④ Workplace learning	1.053	0.889	0.033	22.387***
	⑤ Self-Directed Learning	0.983	0.871	0.032	21.662 ***
Environmental Support →	⑥ Government Policy	1.000	0.636	0.026	11.701 ***
	⑦ Financial Accessibility	1.062	0.598	0.032	10.896***
	⑧ Social Support	0.983	0.609	0.035	11.008 ***
Entrepreneurial Self Efficacy →	⑨ Confidence	1.000	0.847	0.032	19.942 ***
	⑩ Beliefs	0.786.	0.777	0.024	10.193 ***
Entrepreneurial Orientation →	⑪ Risk Taking	1.000	0.594	0.030	27.212 ***
	⑫ Innovativeness	0.999	0.761	0.086	21.826***
	⑬ Proactiveness	1.126	0.824	0.095	11.822***

***p<.001

To assess the discriminant validity for the variables, Fornell and Larcker (1981) suggested discriminant validity is established if a latent variable accounts for more variance in its associated indicator variable than with other observable variables in the same model. Thus, the observable variable's Average Variance Extracted (AVE) must be compared with its squared correlations with other observable variable in the same model. or that the square root of AVE values should be more than the factor's correlation coefficient with other factors

(Henseler, Ringle and Sarstedt, 2015).

The results of the correlation coefficients and square root of AVE values suggested that the construct had discriminant validity as all the values met the threshold. Square root of AVE measures the level of variance captured by a construct versus the level due to measurement error, values above 0.7 are considered very good, whereas, the level of 0.5 is acceptable. (Table IV-13) illustrates the discriminant validity of the overall measurement.

<Table IV-13> Factor Correlation Matrix with Square Root of AVE on the Diagonal

Statistic measurement	Entrepreneurial Intention	Entrepreneurial Learning	Environmental Support	Entrepreneurial Self-Efficacy	Entrepreneurial Orientation
Entrepreneurial Intention	0.615 (0.784)				
Entrepreneurial Learning	0.67***	0.730(0.854)			
Environmental Support	0.599***	0.399***	0.361(0.601)		
Entrepreneurial Self-Efficacy	0.924***	0.765***	0.683***	0.670(0.819)	
Entrepreneurial Orientation	0.626***	0.612***	0.576***	0.663***	0.561 (0.749)

Note 1 :***p<0.001

Note 2: On the diagonal is the Average Variance Extracted (AVE) and its square root in the bracket

3. Verification of the Structural Equation Model of Entrepreneurial Intention and Selected Exogenous Variables

a. Fitness of the Theoretical Model and Alternative Models

H1: The establish structural model will satisfy the goodness of fit standards that is set in this research to predict the relationship between entrepreneurial intentions and entrepreneurial learning, environmental variable, self-efficacy, entrepreneurial orientation BDQF Level 4 vocational courses students in Brunei Darussalam.

The result and the model fit analysis of the structural model supports hypothesis 1 as the structural model satisfy an adequate level of the fitness threshold. The Chi square value did not show acceptable fit ($\chi^2= 197.209$ df = 55 p-value= .000), however chi-square is highly sensitive to the sample size. Other index values shows acceptable fit. The fit values indices are TLI= 0.927, CFI= 0.948, RMSEA= 0.080 (borderline), SRMR= .041 (good fit). This means that the model will adequately predict the relationship between entrepreneurial intention, entrepreneurial learning, environmental support, entrepreneurial self-efficacy and entrepreneurial orientation in BDQF level 4 students.

Several alternative models were run using Mplus while removing different paths which were insignificant and those that is judged to may have a different effect on the values, if it is not included in the model. This is in order to examine whether other models may have better fit indices values/ These models and their indices of fitness can be seen in Appendix 8 (Model 3 to 7). Model 3 to 7 in the appendix shows an acceptable model fit, however the results are similar to the first structural equational model.

Moreover, an alternative model 8 was runned using only students from public schools (n=326), however this model has a very high RMSEA value of more than 0.08 (RMSEA= 0.09) thus is judged to have not reached an acceptable fit. The model fit for model 8 is $\chi^2= 200.746$, DF 55, PVALUE 0.0000, Rmsea 0.090, CFI 0.937, TLI 0.911 SRMR= 0.046. Moreoever, from the demographic studies above, it is seen that for public and private schools there is not much significant differences in the level between most of the observable variables.

Alternative Model 9 was runned with only students without experience of having a part time business with indices of $\chi^2= = 159.867$, DF 55, PVALUE 0.0000, Rmsea 0.081. CFI 0.937, TLI 0.911, SRMR= 0.048. And Alternative Model 10 was runned with only students who does not have family who owns a business and the indices of fitness is $\chi^2= = 159.867$ DF 55 PVALUE 0.0000 Rmsea 0.087 CFI 0.936 TLI 0.909 SRMR= 0.050.

However, there is no significant improvement in the fitness of the alternative model when comparing to the tested model, and therefore, the tested model is used. In this model self-efficacy mediates the relationship between environmental support and intention while there is direct and significant relationship between environmental support and entrepreneurial efficacy. Self-efficacy also mediates the relationship between entrepreneurial learning and intention.

b. Path Coefficient of the Tested Model

Analysing the results of the proposed model suggested the existence of

direct and indirect paths which could result in significant relationships. The strength of relationships could provide indepth understanding in the field of Entrepreneurship. The result of the path coefficient are presented in Table IV-6. Only 5 paths out of 9 were significant which were path from environmental support to entrepreneurial orientation, path from environmental support to Entrepreneurial Self Efficacy, path from entrepreneurial learning to entrepreneurial orientation, path from entrepreneurial learning to entrepreneurial self-efficacy and path from entrepreneurial self-efficacy to entrepreneurial intention. The other

<Table IV-14> Path Coefficients of Tested Structural Equation Model

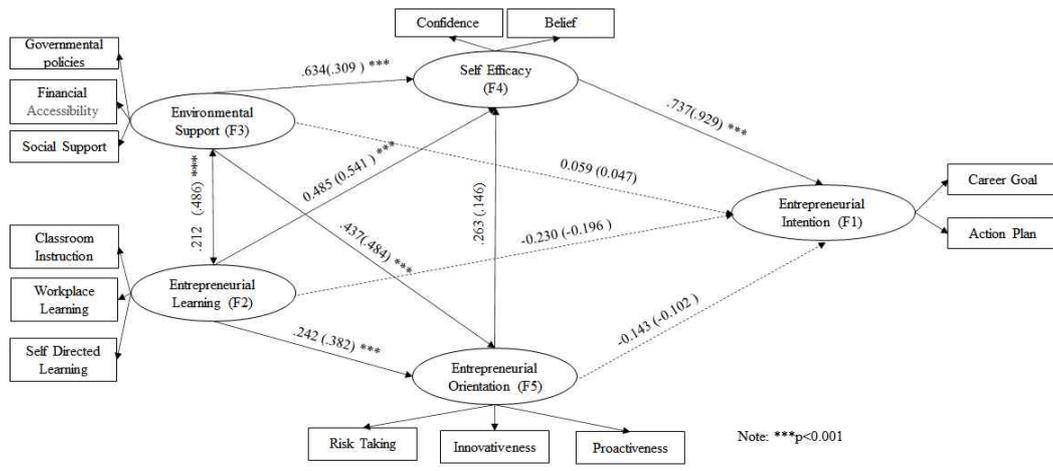
Path	B	β	S.E	t
Environmental Support → Entrepreneurial Orientation	.440	.403	0.091	4.828***
Environmental Support → Entrepreneurial Self-Efficacy	.56	.384	0.148	3.844***
Environmental Support → Entrepreneurial Intention	.091	.056	0.148	0.615
Entrepreneurial Learning → Entrepreneurial Orientation	.241	.483	0.035	6.920***
Entrepreneurial Learning → Entrepreneurial Self-Efficacy	.491	.553	0.057	3.844 ***
Entrepreneurial Learning → Entrepreneurial Intention	-.062	-.087	0.078	-0.786
Entrepreneurial Self-Efficacy → Entrepreneurial Intention	.831	1.04	0.132	6.307 ***
Entrepreneurial Orientation → Entrepreneurial Self-Efficacy	.309	.174	0.147	2.103 ***
Entrepreneurial Orientation → Entrepreneurial Intention	-.131	-.093	0.124	-1.060

Note: P<.001

paths are not significant

Entrepreneurial Self Efficacy ($\beta=1.04$ $p<.01$) has been shown to have a direct and positive effect on entrepreneurial intention. The result shows that the entrepreneurial self-efficacy increases by 1.04 standard deviation as entrepreneurial intention increases by 1 standard deviation, and therefore, hypothesis 2-3 is supported that entrepreneurial self-efficacy will have a direct and positive effect on entrepreneurial intention.

However the path coefficient in the first model shows that the relationship between entrepreneurial learning and Entrepreneurial Environmental support and entrepreneurial orientation did not yield any significant result and thus their respective hypothesis 2-1, 2-2 and 2-4 are rejected. This means that entrepreneurial intention is not directly predicted by orientation, learning and environmental support in this study. Moreover, entrepreneurial learning and orientation both have a negative relationship with entrepreneurial intention, unlike hypothesised.



(Figure IV-2) Results of Path Coefficients of the Tested Structural Equation Model and Goodness of Fit

4. Direct and Indirect Effects of the Exogenous Variables on Entrepreneurial Intention

The results of the direct effects are shown in Table IV-15 and there are only 5 statistically significant direct effects from the second path model.

<Table IV-15> Path Coefficients and Direct Effect of the Tested Model

Path	B	β	S.E	t
Environmental Support → Entrepreneurial Orientation	.437	.448	0.047	4.820 ***
Environmental Support → Entrepreneurial Self-Efficacy	.638	.309	0.141	4.492 ***
Entrepreneurial Learning → Entrepreneurial Orientation	.242	.382	0.035	6.936***
Entrepreneurial Learning → Entrepreneurial Self-Efficacy	.485	.542	0.055	8.859***
Entrepreneurial Self-Efficacy → Entrepreneurial Intention	.737	.928	0.047	15.732 ***
Entrepreneurial Orientation → Entrepreneurial Self-Efficacy	.263	.146	0.139	1.894 ***

Note: P<.001

H2-3: Entrepreneurial self-efficacy will have a direct and positive effect on entrepreneurial intention.

Entrepreneurial Self-Efficacy ($\beta=.928$ $p<.01$) has been shown to have a direct and positive effect on entrepreneurial intention. The result shows that the entrepreneurial self-efficacy increases by .928 standard deviation as entrepreneurial intention increases by 1 standard deviation, and therefore, hypothesis 2-3 is

supported that entrepreneurial self-efficacy will have a direct and positive effect on entrepreneurial intention.

However the path coefficient in the first model shows that the relationship between entrepreneurial learning and Entrepreneurial Environmental support and entrepreneurial orientation did not yield any significant result and thus their respective hypothesis 2-1, 2-2 and 2-4 are rejected.

5. Mediated Effects of the Self–Efficacy and Entrepreneurial Orientation

Table IV-16 shows the results of examining mediating effect of entrepreneurial self-efficacy between the interaction of entrepreneurial learning and intention as well as environmental support and intention.

<Table IV–16> Mediating Effect in the Tested Model

Path	B	β	S.E	t
Entrepreneurial Learning → Entrepreneurial Self Efficacy → Entrepreneurial Intention	0.357	0.502	.062	9.038***
Environmental Support→ Entrepreneurial Self Efficacy → Entrepreneurial Intention	.467	.287	.121	5.259***
Entrepreneurial Orientation→ Entrepreneurial Self Efficacy → Entrepreneurial Intention	.191	.135	.047	15.732 ***
Entrepreneurial Learning → Entrepreneurial Orientation→ Entrepreneurial Self Efficacy → Entrepreneurial Intention	0.046	.051	.055	8.859***
Environmental Support→ Entrepreneurial Orientation→ Entrepreneurial Self Efficacy → Entrepreneurial	0.084 7	.065	.091	4.820***

Intention				
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Single mediation:

Entrepreneurial Self Efficacy ($\beta=.287$ $p<.01$) was also confirmed to have a significant positive mediating effect of environmental support and entrepreneurial intention. This means that when students perception access and opportunities provided by the government policies, financial support and social support increases by 1 standard deviation, the entrepreneurial intention increases by .287 (.309 x.929) ,through the mediation of self-efficacy. Thus the hypothesis H3-1 is accepted.

Entrepreneurial Self Efficacy ($\beta=0.502$ $p<.01$) was confirmed to have a significant positive mediating effect in the relationship between students entrepreneurial learning and entrepreneurial intention. This means that when students perception of their learning through classroom, work Attachment and self-directed learning increases by 1 standard deviation, the entrepreneurial intention increases by 0.502 (.541 x.929) through the mediation of self-efficacy,. Thus the hypothesis H3-2 is accepted.

Entrepreneurial Self Efficacy ($\beta=.135$ $p<.01$) was have a significant positive mediating effect of entrepreneurial and entrepreneurial intention. This means that when students perception access and opportunities provided by the government policies, financial support and social support increases by work Attachment and self-directed learning increases by 1 standard deviation, the entrepreneurial intention increases by .135 (.146 x.929) ,through the mediation of self-efficacy. Thus the hypothesis H3-3 is accepted

Meanwhile, hypothesis H 3-4, H3-5 is not accepted.

Double Mediation:

There is a double mediation by entrepreneurial orientation and entrepreneurial Self Efficacy ($\beta=.065$ $p<.01$) to the relationship between entrepreneurial learning and intention. This means that students perception of their learning through classroom, work Attachment and self-directed learning increases by 1 standard deviation the entrepreneurial intention increases by .065 (.484 x .146 x .929) ,through the mediation of self-efficacy. Thus the hypothesis H3-6 is accepted.

There is a double mediation by entrepreneurial orientation and entrepreneurial Self Efficacy ($\beta=.051$ $p<.01$) to the relationship between entrepreneurial learning and intention. This means that students perception of their learning through classroom, work Attachment and self-directed learning increases by 1 standard deviation the entrepreneurial intention increases by .051 (.382 x .146 x .929) ,through the mediation of self-efficacy. Thus the hypothesis H3-7 is accepted

6. Discussion of the Research Findings

a. Discussion about the Fitness of Theoretical Model and Representation of Sample Population

The main purpose of this study was to investigate the structural relationship between entrepreneurial intention and entrepreneurial learning, environmental variable, entrepreneurial self-efficacy and entrepreneurial orientation. Through the results it could be seen that the model reasonably met most of the assumptions underlying a statistical equation model, which must be met to ensure accurate inferences. Firstly, the research model meets the univariate normality assumption whereby ranges from -0.196 to 0.678 and kurtosis ranging from -0.680 to 0.747 . Meeting these assumption is important because extreme kurtosis will have an effect on variance estimates and mean estimates and thus, high non-normality may cause a significant result which is in fact an artificial effect caused by non-normality (Cain, Zhang & 2017). However, multivariate normality was tested in Amos and the test revealed significant result indicating a non-normal multivariate distribution, thus to address this, the maximum likelihood with robust standard errors (MLR) could be applied in SEM analysis which does not require multivariate normality (Muthen & Muthen, 2007).

Secondly, multicollinearity and correlation was tested and correlations between most observational variable items were statistically significant. Moreover, The correlation coefficient between the observable variables of each latent

variable was generally larger than the correlation coefficient between the observed variables of different latent variables, this means that the concept validity is verified.

Moreover as the VIF is found to be between 1.444 and 3.516 while the tolerance is shown to be between 0.284 and 0.705, these ensures that there is no multicollinearity issue and this means that the unobserved variables represent distinct latent construct and that Type II error could be reduced (Grewal, Cote & Baumgartner, 2004). The confirmatory Factor Analysis discriminant validity, convergent validity and construct reliability was also performed. The Chi-square shows significant results and thus does not meet the goodness of fit assumption in this study and this is most possibly also due to the fact that the multivariate normality is not met. However other fit indices such RMSEA was 0.078, SRMR=. 0.042, TLI was 0.931 and CFI was 0.948 respectively indicator an acceptable fit, thus it is deduced that this model shows acceptable fit.

Therefore it could be accessibility that the hypothesized structural mode is appropriate to predict the relationship between entrepreneurial intention and its exogenous variables entrepreneurial learning, environmental support, entrepreneurial self-efficacy and orientation.

On the other hand, the analysis of the descriptive statistics and demographic profile of the sample population was conducted to check the representation for the sample population and it shows that there is no significant influence of age, gender, school type and work attachment experiences of students to their entrepreneurial intention. This results is similar to the study by Indarti and Kristiansen (2003) whereby certain demographic factors such as age, gender work

experience do not have an influence on entrepreneurial intentions. In terms of effect of gender on the variables, this findings is contrast to several studies that mention that there are higher entrepreneurial intentions in males than female (Arora & Jain, 2019), or with the only study that assesses the quantitative entrepreneurial intention of students in Brunei by Rathmali and Ibrahim (2017) that suggests a high entrepreneurial intention in female than male. Moreover, in this study, only score on confidence variable of entrepreneurial self-efficacy of female students (Mean rank= 191.44) is significantly different from male students (Mean rank, 219.19, Z score=-2.351, P<0.05). This is also similar to the study by Indarti and Kristiansen (2003) whereby gender only affects the score of self-efficacy (t-value = -2.561, p < 0.05).

In terms of School differences, in this study the score of self-directed learning of students in governmental institution (Mean rank=196.29 differs from those in private institutions (Mean rank= 228.46, Z score=-2.351, P<0.05). Moreover score of confidence of students in governmental institution (Mean rank=197.52 significantly differs from those in private institutions (Mean rank= 223.32 Z score=-1.763 P<0.05). This may suggest that students perceive the self-directed learning related to entrepreneurial topics to be higher in private schools than in government schools. Although there is lack of research in the matter especially in the context of Brunei, this may suggest the need for further research with regards to the difference in the way public schools and private schools provide time and opportunities for self-directed learning of students in Brunei.

On the other hand, analysis of the demographic profile of the sample

population shows that there is a significant influence having family who owns a business as well as their experiences in owning their own business, with their scores on entrepreneurial intention, entrepreneurial learning, environmental support, entrepreneurial self-efficacy and entrepreneurial orientation. This is similar to a number of studies that puts forward the discussion that individual having family with businesses background usually motivates their family member to engage in entrepreneurial activities (Altinay et al, 2012). In this study, sample analysed in final analysis included both students with family backgrounds in business and those without as sample of students with family business backgrounds (n=134) are below the minimum sample size required to run an SEM. In future studies, aggregating students with family business background and those without might be worth investigating.

b. Discussion about the Direct and Indirect Relationship Between Variables

i) Direct Relationship Between Variables and Entrepreneurial Intention

(1) Significant Direct Relationship Between Self-Efficacy and Intention

In when checking the structural model, results, only entrepreneurial self-efficacy ($\beta=.929$ $p<.01$) has been shown to have a direct and positive effect on entrepreneurial intention and thus the hypothesis 2-3. This result is consistent

with several studies (Tinoco and Bayon, 2020; Udayanan, 2019; Wang, Chang, Yao and Liang, 2016) and is in contrast to the study by Boukamcha (2015), that found an insignificant result of perceived self-efficacy on entrepreneurial intention. This indicates that students who are highly confident in their abilities and skills which are needed to start a business and their belief that their goal is within their control, tends to have a higher desire to start a business. This supports the social cognitive theory (Bandura, 1997) which explains that human behaviour such as starting a business is “a product of the interplay of intrapersonal influences, the behavior individuals engage in, and the environmental forces that impinge upon them” (Bandura, 2012).

However the direct relationship between entrepreneurial learning and Entrepreneurial Environmental support and entrepreneurial orientation did not yield any significant result rejecting the respective 2-1, 2-2 and 2-4.

(2) Insignificant Negative Relationship Between Entrepreneurial Learning and Entrepreneurial Intention

For the relationship between entrepreneurial learning and entrepreneurial intention, the standardized r-value shows a negative relationship between entrepreneurial learning and intention. The non-significance means that the intention of students in this sample population is not predicted by their perception of learning through the classroom, work and self-directed. Yet, this result is still important to be noted as the results yield the a negative relationship, which does not support the original hypothesis of entrepreneurial learning having a direct and positive effect on entrepreneurial intention.

However, there are several literatures that found entrepreneurial learning to have a negative effect on entrepreneurial intention which is similar to the negative relation found in this study (Kariv, Cisneros & Ibanescu, 2019; (Oosterbeek, Van Praag, & Ijsselstein, 2010; Von Graevenitz, Harhoff, & Weber, 2010).

Several explanations has been put to explain these negative effects. Firstly, students do not put a high value on obtaining degree or certificate as some potential entrepreneurs may see the time spend on studying or obtaining certificates as a waste of time. Students may have drawn such perspectives through the many inspiring entrepreneurial figures who dropped out of school such as Steve Jobs (Kariv, Cisneros & Ibanescu, 2019). Secondly, negative impact of an entrepreneurial program on intention may be due to students obtaining a realistic view on what is needed to start their own businesses and thus, has resulted in their lost of optimism and interest to start a business. (Oosterbeek, Van Praag, & Ijsselstein, 2010; Von Graevenitz, Harhoff, & Weber, 2010).

Moreover, similar to this study, there are also several studies where entrepreneurial education or learning does not have a direct and significantly positive impact on entrepreneurial intention (Thoyib, Maskie and Ashar, 2016). For instance Thoyib, Maskie and Ashar, (2016). suggest that effect of entrepreneurial learning is under the influence of other exogenous and mediating variables such as entrepreneurial characteristics. This means that students' entrepreneurial intention of level 4 TVET students is not directly predicted by entrepreneurial learning, but participating in entrepreneurial learning will indirectly

contribute to their intention of starting a business.

Moreover, in the context of Brunei, Rathmali & Ibrahim, (2017) which mentioned that Brunei students are usually reluctant to accept the risk and has a low internal locus of control and less futuristic. In the context of Brunei entrepreneurial education has a low level of impact on entrepreneurial intentions and entrepreneurial attitudes. This may explain the lack of significant and direct relationship between entrepreneurial learning and intention.

In a study on motivations of agripreneurs in Brunei (Musa, Idris and Basir, 2020), they noted that main motivations are mostly driven by spiritual values and cultural factors which was not studied in this research.

Moreover, Minnis (2000) noted that due to the strong collectivist orientation of malay culture with its rigid stratification system and strong family ties, formal institutional arrangements such as education through vocational institutions or institutinsl policies may be of less influence than informal connections such as social and family support. This, could be reflected as to why indespite of the perception of available environmental support for entrepreneurship, this has no direct and positive relations with entrepreneurial intentions.

(3) Insignificant Positive Relationship Between Environmental Support and Intention

For the relationship between environmental support and entrepreneurial intention, the standardized r value shows a positive relationship between environmental variable and intention. When the perception of environmental support provided to entrepreneurship increases by 1 standard deviation, the Entrepreneurial intention increases by 0.131, however this is not significantly predicted by the students perception. This means that the intention of students in this sample population is not predicted by their aggregated perception of governmental policies, accessibility to financial aid and social support and that they may consider other environmental factors more important when considering future entrepreneurship careers. This results is in contrast with several studies that finds a significant direct positive relationship between variables related to environmental support such as institutional or structural policies (Huang et al. 2021; Gelard and Saleh, 2011; Shamsudin et al, 2017; Turker and Selcuk, 2008), Financial accessibility (Hoong, 2019) and social support with entrepreneurial intention (Farooq, 2018)

However the results in this study is in line with several other results that do not find a significant relationship between selected environmental variables such as financial accesibility (Nguyen, 2020; Park, Kim and Ko, 2015), social support (Huang et al. 2021; Gelard and Saleh, 2011; Turker and Selcuk, 2008).

In terms of the financial accessibility, Nguyen (2020) argued that an insignificant relationship may be due to firstly, students having no direct

experience in securing finance to establish a business thus making them optimistic about access to finance and thus to students, other factors may be perceived as more important than financial issues when considering future entrepreneurship careers. And secondly, Nguyen (2020) argued that, perhaps this insignificant results in their study may be due to the fact that for developed countries financial accessibility may be an important factor in predicting entrepreneurial intention due to the difficulty in accessing startup capital from formal institutions. However in countries that are emerging and actively promoting efforts to foster entrepreneurship, students may receive various financial opportunities thus, to students, it might not be a significant predictor of pursuing an entrepreneurial career.

In terms of the social support, this study is similar to Gelard and Saleh, (2011); Turker and Selcuk, (2008) where it does not predict entrepreneurial intention. In the two studies they pointed out a need to further study about the social support relationship to intention, because both Turkey and Iran is a collectivist culture where career selection decision should have strongly be influenced by family members and friends which was in contrast to their results. Similarly in Brunei there is a strong collectivist orientation of malay ethnic culture that has rigid social stratification systems and strong family ties (Minnis, 2000). Due to this any arrangements made through formal institutional such learning through schools or institutional policies may be of less influence than informal connections such as social and family support.

These arguments above may similarly explain the insignificance of the direct relationship between environmental variables and entrepreneurial intention of

students in the context of Brunei.

(4) Insignificant Negative Relationship Between Entrepreneurial Orientation and Intention

However, despite showing non significant values, there are several things to be note which is different from the is a positive relationship between orientation and entrepreneurial intentions and thus this means that the students entrepreneurial intention is not predicted by the students perception of their own tendency to take risk, ne innovative and proactive in their daily life. This is contradictory to several studies that shows a positive and significant relation between Individual Entrepreneurial Orientation such as Robinson and Stubberud (2014) and Ibrahim and Masud (2016). However one differences between this study prior study that shows significant results is the sample population as both papers have conducted studies on university students who have completed specific course and modules related to entrepreneurship while this study attempted to test all majors in Brunei Darussalam Qualification Framework level 4. Kurniawan et al (2019) had argued that entrepreneurial orientation measurements developed by Bolton and Lane (2012) was more suitable for university students. Moreover, he put forward the discussion that vocational students motivation to do a business is more extrinsic and is heavily influenced by values and morals taught by parents; while university students are more intrinsic and related to their personal goals.

The results of this study affirm and is in line with several studies that shows that entrepreneurial self-efficacy mediates the relationship between education or learning to entrepreneurial intention (Jiang, Xiong and Cao, 2016;

Nowinski et al, 2019; Newman, Obschonka, Schwarz, Cohen, and Nielsen, 2018; Hao, Seibert, & Hills, 2005; Darmanto and Yuliari. 2018, yang, 2020). Entrepreneurial learning offered or could be accessed by students, in the form of those provided through classroom instruction, work Attachment and self-directed learning improves their self-efficacy and therefore, students who take entrepreneurship training and are actively involved in business training believe that these opportunities enables them to obtain capabilities required for starting a business and that they belief they are in control of their outcome and goals.

Moreover, entrepreneurial self-efficacy also mediates the relationship between environmental support and entrepreneurial intention. Although the relationship between environmental support shows a significant and positive direct relations with and entrepreneurial orientation ($\beta=.403$ $p<.01$), and between entrepreneurial learning to intention ($\beta=.541$ $p<.01$) however, in this study the mediating effect of entrepreneurial orientation is not significant. This study shows a contradictory results with past studies that shows the effect of entrepreneurial orientation as a mediating factor to the environmental support and entrepreneurial intention of students. (Martins and Perez, 2020; Park, Kim and Ko, 2015).

c. Discussion About the Indirect Relationship Between Variables

In this study, self-efficacy is an important determinant of entrepreneurial intention as it mediates the relationship between entrepreneurial learning and entrepreneurial intention, as well as the relationship between entrepreneurial orientation to entrepreneurial intention and relationship between entrepreneurial

learning to entrepreneurial intention. This is in line with several studies that finds that individuals with higher perception of their own skills or competences obtained through formal education, or their participation in entrepreneurial orientation and exposure to learning in the workplace will lead to a higher entrepreneurial self-efficacy and this inturn relates to entrepreneurial intention (Nowinski et al, 2019; Jiang, Xiong and Cao, 2016; Newman, Obschonka, Schwarz, Cohen, and Nielsen, 2018; Hao, Seibert, & Hills, 2005); Darmanto and Yuliari, 2018)

V. Summary, Conclusions and Recommendations

1. Summary

The purpose of the study was to examine the structural relationship between entrepreneurial intention, entrepreneurial learning, environmental support, self-efficacy and orientation of Brunei Darussalam Qualification Framework Level 4 students. In order to achieve this, specifically four objectives were examined: firstly, the structural model of entrepreneurial learning, environmental support, self-efficacy, orientation and entrepreneurial intention. Secondly, the direct relationship among the entrepreneurial learning, environmental support, self-efficacy, orientation and entrepreneurial intention. Thirdly, the mediating effects of entrepreneurial self-efficacy and orientation in relation to the entrepreneurial learning, environmental support and entrepreneurial intention.

The population of this study was students equivalent to Qualification Framework Level 4 in Brunei Darussalam in both private and public vocational institutes. The present study is based on a sample of 404 subjects in 15 vocational institutes. Data was collected during Mid May 2021 to Mid June 2021, around 448 questionnaires were collected, and after data cleaning for Outliers, similar answers, or ineligible participants 404 was utilized for the final data analysis.

Both online questionnaires and offline questionnaires were utilized whereby offline questionnaires were only sent to two schools as they have requested for

it. The proposed model focus on variables that determine entrepreneurial behaviour through the development of entrepreneurial intention as well as other psychological personal related variables, human capital related variable and external environmental support related variables to explore their impact on the entrepreneurial intention of an individual such as Entrepreneurial learning, self-efficacy, Entrepreneurial Orientation, Environmental support and entrepreneurial intention.

For data analysis, descriptive analysis including frequency, percentage, mean, standard deviation, correlation analysis as well as reliability analysis were performed using IBM SPSS Statistics 26.0. Mplus was used to verify the validity and goodness of fit of the structural equation model as well as to analyze the direct, mediating and moderating effects among the variables. The statistical significance as set based on .05 significance level.

The results of this study is as follows: Firstly, the descriptive analysis of the sample population shows that there is no significant influence of age, gender, school type and work attachment experiences of students to their entrepreneurial intention. Moreover, in this study, only score on confidence variable of entrepreneurial self-efficacy of female students (Mean rank= 191.44) is significantly different from male students (Mean rank, 219.19, Z score=-2.351, $P<0.05$). In terms of School differences, in this study the score of self-directed learning of students in governmental institution (Mean rank=196.29 differs from those in private institutions (Mean rank= 228.46, Z score=-2.351, $P<0.05$). Moreover score of confidence of students in governmental institution. On the other hand, analysis of the demographic profile of the sample population shows

that there is a significant influence having family who owns a business as well as their experiences in owning their own business, with their scores on entrepreneurial intention, entrepreneurial learning, environmental support, entrepreneurial self-efficacy and entrepreneurial orientation.

Secondly, the structural model of entrepreneurial intention, entrepreneurial learning, environmental support, self-efficacy and orientation of BDQF Level 4 students has predicted the relationship between the latent variables. Secondly, the entrepreneurial self-efficacy ($\beta=.928$ $p<.01$) has been shown to have a direct and positive effect on entrepreneurial intention.

Thirdly, self-efficacy and entrepreneurial orientation have mediating effects between the both entrepreneurial learning and environmental support and entrepreneurial intention. Entrepreneurial self-efficacy ($\beta=.287$ $p<.01$) was also confirmed to have a significant positive mediating effect of environmental support and entrepreneurial intention. Entrepreneurial Self Efficacy ($\beta=0.502$ $p<.01$) was confirmed to have a significant positive mediating effect in the relationship between students entrepreneurial learning and entrepreneurial intention. Moreover, entrepreneurial self Efficacy ($\beta =.135$ $p<.01$) was have a significant positive mediating effect of entrepreneurial and entrepreneurial intention.

Meanwhile, there is a double mediation by entrepreneurial orientation and entrepreneurial Self Efficacy ($\beta=.065$ $p<.01$) to the relationship between entrepreneurial learning and intention. and additionally there is a double mediation by entrepreneurial orientation and entrepreneurial Self Efficacy ($\beta=.051$ $p<.01$) to the relationship between entrepreneurial learning and intention.

This study has found lack of significant and direct relationship between

entrepreneurial learning, environmental variable and entrepreneurial orientation. The lack relationship could be due to several factors that is unique to Brunei socio cultural or economy context. Firstly, Brunei Darussalam is a rentier and welfare state and thus, this had long affected the mindset of young people who mostly aspire to work in a stable job, are usually reluctant to accept the risk and has a low internal locus of control and less futuristic. Secondly, Brunei has a high collectivism culture with rigid stratification system and strong family ties, formal institutional arrangements such as education through vocational institutions or institutinsl policies may be of less influence than informal connections such as social and family support.

The policy implication of the study is as follows: Firstly the results of this study indicates that for students in TVET track of Brunei Darussalam Qualification Framework Level 4, the Entrepreneurial Self-efficacy is the most important direct determinant of entrepreneurial intention. Thus it is important to provide purposeful entrepreneurial education that will improve entrepreneurial self-efficacy.

Secondly, because of Brunei's Rentier economy and the mindset of the young people are heavily affected by the long embedded "Dutch Disease" in the economy (Anaman, 2004), entrepreneurial education should perhaps reprioritize its aim to change this strong uncertainty avoidance mindset, and nurture risk taking tendency, innovativeness and proactiveness for students to become an entrepreneurial person.

Thirdly, a stronger tripartite relationship between entrepreneurial policy makers, educational and training providers and the community are needed to

produce more effective startup performance. This study shows that there environmental support such as the perception of students on entrepreneurial policies, laws and regulations as well as accessibility to finance and social support to students, contributes to entrepreneurial intention through entrepreneurial orientation and self-efficacy.

2. Conclusions

In conclusion, the hypothesised model is appropriate to predict the relationship between entrepreneurial intention and its exogenous variables such as entrepreneurial learning, environmental support, entrepreneurial self-efficacy and orientation as it meets assumptions and the goodness-of-fit index. Secondly, students who are highly confident in their abilities and skills and have a strong belief that their goal is within their control, tends to have a higher desire to start a business. Thirdly, entrepreneurial self-efficacy mediates the relationship between education or learning and entrepreneurial intention as well as relationship between environmental support and entrepreneurial intention.

This study provides implications and points of learning to policy makers, post secondary educators as well as any entrepreneurial support institution to improve the entrepreneurship in Brunei as this study shows implication from both the bigger scale to cover the perceived environmental support, to a more smaller scale such as entrepreneurial learning environment provided by the school and any learning opportunities as well as more personal scale, which is the individual traits. For instance, Policies regarding entrepreneurial education and learning regardless of major, are required as early as possible in the vocational education

stage such as students in BDQF level 4 who are at a cross road of either starting a career or continuing studies.

Secondly, it is a conducive environment of learning which could nurture traits which are important to starting a business such as efficacy, innovativeness, risk taking and proactiveness. Thirdly, it is necessary for Secondary and vocational education administrators to improve the access and increase the availability of entrepreneurship education programs not to just business-related disciplines but to other disciplines as well, because other learners also possess a high propensity to pursue self employment or entrepreneurship.

Post secondary education administrators should develop and improve on the experiential learning opportunities available for post secondary vocational students, such as job shadowing, internships, new venture creation, and commercialization initiatives for students in more disciplines.

3. Recommendations

a. Theoretical Implication for Future Research

This research provides several theoretical implications for future research on entrepreneurial intention. Firstly, many studies of entrepreneurial intention looked at intention through one dimensional perspective and thus in past studies, it is measured through a unidimension variable. (Linan and Chen, 2009; Pihie, 2009; Linan, Urban and Guerrero, 2011; Top, Çolakoğlu, & Dilek, 2012; Rueda, Moriano& Liñán, 2015. However, as noted by Schlaegel and Koenig (2014) mentioned that future research in intention should identify other determinants that

explain variance in entrepreneurial intention beyond that accounted for by the Theory of Planned Behaviour and Shapiro's Entrepreneurial Event Model antecedents and suggests that the extent to which initial entrepreneurial intentions are realized and are transformed into behavior might depend on a more complex process, which includes goal intentions and implementation intentions not covered in his research.

This research attempts at conceptualizing intent as a construct of career goal a construct similar to "goal intention" and incorporates Fishbein and Ajzen, (2010) willingness and behavioural expectation, and action planning, a construct similar to "Implementation intention" and includes the 'trying' concept.

Goal intention refers individual intention to reach the 'behaviour' but does not guarantee the completion as they may fail to deal effectively with the self-regulatory problems (Gollwitzer and Sheeran, 2006) and this corresponds to the motivational phase during which the person decides to act. Whereas, Implementation intention corresponds to the link between an intended goal directed behaviour and an anticipated situation, and this is the volitional phase during which a person plans how she/he is going to make the decision becomes reality (Gollwitzer and Sheeran, 2006).

Secondly, there are still many limitations to the current research. and to address this, it is suggested that same research questions is examined with a mixed methodology. Most studies in past research applies quantitative methodology to examine entrepreneurial intention, however by utilizing qualitative methodology in addition to the quantitative methods, it might enables the researchers to simultaneously provide a deeper and broader perspective on

entrepreneurial intention especially for younger population such as secondary vocational level. Triangulating the findings by cross-checking data from multiple sources could strengthen the results.

Thirdly, this study examined intentions, not actual behavior. However, intentions are only predictors of planned behaviors (Ajzen, 1991) and to address this the second recommendation for future research is to conduct a longitudinal study that measures the translation of entrepreneurial intention into entrepreneurial behavior.

Fourthly, in this study demographic variables consisting of age, gender, school type, work attachment experience, own business experience and family business experience was examined to see if they have an effect on the scores of student's entrepreneurial intention, entrepreneurial learning, environmental support, entrepreneurial self-efficacy and entrepreneurial orientation. Among the demographic variable only own business experience and family business experience was shown to have a significant effect on the scores of each variables. However, there are still mixed past studies which found that there are significant effects of age or gender. As in this study, the age group of a very narrow range from 16 to 26, this may not show any differences in the entrepreneurial intention scores. As studying the age related entrepreneurial intention may be of great implication in the context of Brunei, this study recommends future research to include studies on intention on a larger range of age groups such comparing how their level of entrepreneurial intention for age group below between 16~20 years old, 20~30 years old, 30~40 years old and so on.

Fifthly, this researched had focused on investigating external environmental variables with the aim of seeking implications that relates to national policy, education and entrepreneurial orientations. In the effort of doing so, the cultural orientation of Brunei was not explored in greater detail in this study despite the country being strongly influenced by the Malay Islamic Monarchy (Melayu Islam Beraja, MIB) philosophy and culture. More insights on entrepreneurial intention may be gained by verifying the effect of cultural orientations such as the effect of collectivism, individualism, femininity and masculinity on entrepreneurial intentions and compare the findings with other studies in similar culture.

b. Practical Implication for Policy Making

Moreover, the results of this study also provides valuable implication for entrepreneurial education policies. Firstly, in Brunei it is important to design a purposeful entrepreneurial education policies and programs which increases entrepreneurial self-efficacy of students. The results of this study indicates that for students in TVET track of Brunei Darussalam Qualification Framework Level 4, the Entrepreneurial Self-efficacy is the most important direct determinant of entrepreneurial intention. Thus, the higher their confidence in their abilities that are needed to start a business and the stronger their belief that in despite of external factors, they are in control of the outcome of their goals, the more likely it is that they will start a business.

In this study entrepreneurial learning on its own has a negative and insignificant relations to entrepreneurial learning, but entrepreneurial learning still

contributes to intention through self-efficacy. In this case, it is important for vocational institutions in Brunei to plan and provide more purposive entrepreneurial education program that fits this characteristics of TVET level 4 students. This may include programs offering hands-on practice on entrepreneurial task such as business plan writing and working with an entrepreneur to enhance skills related to entrepreneurship such as problem solving or money management, and also improve their confidence in using these different skills.

Moreover, entrepreneurial learning can occur through formal classroom instruction, workplace and self-directed learning. The strong impact of students self-efficacy on entrepreneurial intention implies that entrepreneurship educators and vocational instructors need to be well trained and equipped with the skills to design and implement various pedagogical methods in class to improve self-efficacy and consequently entrepreneurial intention of their students. Vocational institutions can also provide a supportive environment for students to practice running their own businesses rather than focusing only on imparting general theoretical knowledge and information about entrepreneurship.

Secondly, policy makers and educational program developers need to reprioritize the aims of entrepreneurship education to nurture risk taking, innovativeness and proactiveness tendencies of students. According to Gibb (1999) there are three aims of entrepreneurship education and that is firstly, to learn and understand entrepreneurship such as what it is and what entrepreneurship do; secondly, to become entrepreneurial as a person such as to take responsibility of their own learning, career and life; and thirdly to become

an entrepreneur such as how to start and manage a business. It may be worth to reexamine the aims of entrepreneurship education programs or teaching methods for vocational students at level 4. This is because this study it is shown that there is a direct relationship between entrepreneurial learning and to entrepreneurial orientation, that there is a double mediation between entrepreneurial learning to intention through orientation and self-efficacy. Entrepreneurial orientation here refers to the tendency of a person to take risk, to be innovative in their problem solving approach and to be proactive in their daily life, school and work, and not specifically related only to entrepreneurial task.

This may indicate that perhaps in Brunei, providing entrepreneurial education which only focuses delivering information as to how to start and manage a business (Gibb's entrepreneurial education third aim), may not be as beneficial for the students. More than that, perhaps the second aim- which providing learning on how to be an entrepreneurial as a person, is of utmost importance.

This is because Brunei's economy and the mindset of the young people are heavily affected by the long embedded "Dutch Disease" in the economy (Anaman, 2004), and the strong Malay culture low to medium uncertainty avoidance (Blunt, 2012). Uncertainty avoidance refers to "the extent to which people within a culture are made nervous by situations that they consider to be unstructured, unclear, or unpredictable, and the extent to which they try to avoid such situations by adopting strict codes of behavior and a belief in absolute truth" (Hofstede, 1983). On the contrary, embarking in entrepreneurship means an individual needs to constantly embark on risk and uncertainty.

As the introduction of entrepreneurial education in itself is at its infancy stage especially in post secondary vocational education level, entrepreneurial education should perhaps reprioritize its aim to change this strong uncertainty avoidance mindset, and nurture risk taking tendency, innovativeness and proactiveness in students to become an entrepreneurial person. Gelderen, (2010) mentioned that students in vocational education live in an enterprising way of life and thus providing entrepreneurial education that promotes the student's autonomy of learning or self-directed learning is equally needed.

Thirdly, a stronger tripartite relationship between entrepreneurial policy makers, educational and training providers and the community is required in Brunei. This study shows that there environmental support such as the perception of students on entrepreneurial policies, laws and regulations as well as accessibility to finance and social support to students, contributes to entrepreneurial intention through entrepreneurial orientation and self-efficacy. Similarly learning contributes to entrepreneurial intention through entrepreneurial orientation and self-efficacy. And that environmental support has positive relation to entrepreneurial learning.

Through this it is evident that the stakeholders in promoting a student's entrepreneurial self-efficacy and hence their intention are tripartite. This includes not only national stakeholders that creates policies on entrepreneurship and provide funding, but also includes the community that surrounds them such as their family which may give them emotional support, and finally the education and training providers may be schools or employers. Thus, initiatives that is aimed at promoting entrepreneurship of students, need to engage these three

stakeholders, taking into account the impact that they have on a students' entrepreneurial self-efficacy and hence on their intention.

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Appendix 1: Permission Letter

Nur Atiqah Raduan
Seoul National University,
South Korea.

Director
IBTE (Brunei Institute of Technical Education)
Ministry of Education
Brunei Darussalam

2020/00/00

Subject: Conducting research in the satellite and main IBTE Campus and Private institutions

Dear Sir, I am a Doctorate Candidate of Agricultural and Vocational Education, in Seoul National University. I am planning to conduct a research on the following topic: OOO

My intended target group is students of BDQF Level 4 course students.

The responds in the survey is solely intended for the purpose of research and will be treated with anonymity. Any other personal or demographic details, will be treated with the upmost confidentiality befitting of the University's reputation as a leader university in research.

In view of this, I am seeking your assistance and approval to conduct the research with the students in the campus.

Thank you,
Atiqah Raduan

Appendix 2: Pilot Study Questionnaire

Title: Entrepreneurial Learning and Entrepreneurial Intention of TVET Level 4 (Diploma or HNtec graduating in 2021 only) students

Instructions to respondents:

This is part of a Pilot survey for doctoral thesis to understand level 4 Diploma or HNtec students entrepreneurial intentions, tendencies and exposure to entrepreneurship. It consists of 9 sections and you are requested to answer all the questions in all the sections. Your response in answering this questionnaire will be treated strictly confidential and will be used only for the purpose of this study.

Please read carefully and complete the following by putting an clicking on the box which represents the statement most close to your opinion (one star per line). Please be honest about your views, there are no right or wrong answers, where you position yourself in relation to the statements reflects your personal perspectives on these items.

If you have any queries regarding this survey please contact:

Atiqah Raduan, Dept. of Agricultural and Vocational Education
CALs, SEOUL NATIONAL UNIVERSITY

QUESTIONS

1. This survey is specifically targeted for student doing diploma or HNtec course (Certificate level 4) and is graduating in 2021. I confirm that I am a student doing diploma or HNtec course and is graduating in 2021. And that I volunteer to do this survey and agree for these information to be used for the doctoral research (I agree)

2. The following questionnaire is to understand the characteristics of the respondent. Please answer this section by writing down the details where indicated.

- a) Email and Whatsapp Contact (Will only be used to contact for appreciation gifts)
- b) Gender
- c) Age as of April 2021
- d) Please indicate your school
- f) Please indicate your major
- g) Have you attended internship as part of your school (Yes or No)
- h) If you attended internship, is it at governmental institution or Semi-private/private company?
- i) Have you been self employed as an independent worker or business owner in your OWN business (yes or no)
- j) Have you been self employed as an independent worker or business owner in your FAMILY business (yes or no)

3- The following are questions related to your Intention to start a business in the next 5-10 years.

*Neutral here refers to when your answers are neither incline towards disagreement or agreement.

	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	My professional goal is to become an entrepreneur	①	②	③	④	⑤
2	I am ready to do anything to be an entrepreneur	①	②	③	④	⑤
3	I am determined to create a firm in the future	①	②	③	④	⑤
4	I have the strongintention to start a business some day or within 5-10	①	②	③	④	⑤

	years					
5	Currently I am working at a specific plan to start a business	①	②	③	④	⑤
6	I have a clear plan to start a business in the near future	①	②	③	④	⑤
7	I have started collecting start up information	①	②	③	④	⑤
8	Currently I am receiving specific counseling or advice to start a business	①	②	③	④	⑤
9	I have been thinking specifically about funding	①	②	③	④	⑤

4- The following are questions related to your confidence regarding your ability to start an entrepreneurial venture.

	How much confidence do you have in your ability to...	Very little confidence	Little confidence	Somewhat confident	Quite confident	Complete confidence
1	solve problems in an entrepreneurial setting	①	②	③	④	⑤
2	managing money relating to start ups or business	①	②	③	④	⑤
3	Being creative in an entrepreneurial setting	①	②	③	④	⑤
4	Getting people to agree with you.	①	②	③	④	⑤
5	Being a leader to an group of people	①	②	③	④	⑤
6	Making decisions an entrepreneurial setting	①	②	③	④	⑤

5. How much do you agree to the following statement about your beliefs regarding starting a business

	How much do you agree to the following statement about your beliefs regarding starting a business	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7	Starting a company and keeping it viable would be easy for me	①	②	③	④	⑤
8	I believe I would be completely unable to start a business	①	②	③	④	⑤
9	I am able to control the creation process of a new business	①	②	③	④	⑤
10	If I tried to start a business I would have a high chance of being successful	①	②	③	④	⑤
11	It would be very difficult for me to develop business idea	①	②	③	④	⑤
12	I know all the practical details needed to start a business	①	②	③	④	⑤

6- The following are questions related to the your perception on financial support, entrepreneurial policies and social support.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	In Brunei, there are sufficient subsidies and funding policies made available to help the creation of new businesses	①	②	③	④	⑤
2	In Brunei, qualified consultant and service support for the creation of businesses and entrepreneurship is available	①	②	③	④	⑤
3	Law in Brunei are unfavourable for the creation and operation of a new business.	①	②	③	④	⑤
4	The beauracratic procedures in Brunei (including administrative	①	②	③	④	⑤

	steps, procedure or red-tape) for founding a new company are unclear					
5	In Brunei, it is easy to obtain funding such as venture capital for the creation of new business	①	②	③	④	⑤
6	In Brunei, banks do not readily give loan to start up new business or companies.	①	②	③	④	⑤
7	If I decide to become an entrepreneur, my parents will support me	①	②	③	④	⑤
8	If I decide to become an entrepreneur, my family members will support me	①	②	③	④	⑤
9	If I decide to become an entrepreneur, I will consult my family members,	①	②	③	④	⑤
10	If I decide to become an entrepreneur, my friends will support me	①	②	③	④	⑤
11	If I decide to become an entrepreneur, my families will give me emotional support	①	②	③	④	⑤

7. The following are questions related to your perception about the learning that occurs in school or classroom. Through school curriculum (Including classes, CCA, ECA, school organized workshops etc)...

		Not At all	Slightly	Moderately	Very	Extremely
1	I have acquired knowledge related to entrepreneurship such as recognize business opportunity, basics of accounting and finance, and more	①	②	③	④	⑤
2	I have understood and is able to describe the knowledge related to	①	②	③	④	⑤

	business opportunity.					
3	I know how to apply my entrepreneurial knowledge application of learned information to solve a problem or answer a question;	①	②	③	④	⑤
4	I have acquired analytical skills through learning cases related to entrepreneurship such as successful case studies and more	①	②	③	④	⑤
5	I am able to evaluation or judging the worth of a business idea	①	②	③	④	⑤
6	I am able to create or reorganizing entrepreneurial knowledge into a new pattern.	①	②	③	④	⑤

8. The following are questions related to your perception about the learning that occurs through work Attachments up until now (this includes internship outside of school, work attachments, shadowing, workshops conducted outside of school). Through work Attachments....

		Not At all	Slightly	Moderately	Very	Extremelt
7	I am able to bridge entrepreneurial theory to practice	①	②	③	④	⑤
8	I am able to apply knowledge and identify entrepreneurial opportunities	①	②	③	④	⑤
9	I am able to assess value creation	①	②	③	④	⑤
10	I am able to reflect	①	②	③	④	⑤
11	I am able to develop reflection and decision making	①	②	③	④	⑤

9. The following are questions related to your perception about the learning that occurs through self-directed learning.... (this includes all learning that you do on your own such as online research, and more apart from those between question 6 and 7)

		Not At all	Slightly	Moderately	Very	Extremely
12	I have acquired knowledge related to myself	①	②	③	④	⑤
13	I have acquired knowledge related to environment and entrepreneurial networks.	①	②	③	④	⑤
14	I have acquired knowledge about business	①	②	③	④	⑤
15	I have acquired knowledge about small business management	①	②	③	④	⑤
16	I have acquired knowledge about nature and management of relationships	①	②	③	④	⑤

10. The last question is related to your tendencies to use innovative approaches, take risk and be proactive in work or daily life.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I like to take bold action by going into the unknown.	①	②	③	④	⑤
2	I am willing to spend a lot of time and/or money on something that might produce high return..	①	②	③	④	⑤
3	I tend to act 'boldly' in situations where risk is involved.	①	②	③	④	⑤
4	I often like to try new and unusual activities that are not typical but not	①	②	③	④	⑤

	necessarily risky.					
5	I tend to do things the same and not try different, unproven approaches.	①	②	③	④	⑤
6	I prefer to try my own unique way when learning new things rather than doing it like everyone else does.	①	②	③	④	⑤
7	I prefer experimentation and original way to solve problems rather than using common ways many people use for solving problems	①	②	③	④	⑤
8	I usually act even if I anticipate future problems, needs or changes.	①	②	③	④	⑤
9	I tend to plan ahead on projects.	①	②	③	④	⑤
10	I prefer to 'step up' and get things going on projects rather than sit and wait for someone else to do it	①	②	③	④	⑤

Appendix 3: Survey Questionnaire

Title: Survey Entrepreneurial Intention of STUDENTS of TVET Certificate Level 4 such as HNTec (graduating in 2021 only)

Introduction to respondents:

This is a survey doctoral thesis to understand level 4 TVET Certificate or HNTec students entrepreneurial intentions, tendencies and exposure to entrepreneurship. It consists of 15 sections and you are requested to answer all the questions in all the sections. Your response in answering this questionnaire will be treated strictly confidential and will be used only for the purpose of this study.

Please read carefully and complete the following by putting an clicking on the box which represents the statement most close to your opinion (one answer per line). Please be honest about your views, there are no right or wrong answers, where you position yourself in relation to the statements reflects your personal perspectives on these items.

If you have any queries regarding this survey please contact:

Atiqah Raduan, Dept. of Agricultural and Vocational Education
CALs, SEOUL NATIONAL UNIVERSITY

Questions:

1. This survey is specifically targeted for student doing HNTec course or courses with certificate level 4 and is graduating in 2021. I confirm that I am a student doing HNTec course courses with certificate level 4 and is graduating in 2021. And that I volunteer to do this survey and agree for these information to be used for the doctoral research. (I agree)

2. The following questionnaire is to understand the characteristics of the respondent. Please answer this section by writing down the details where indicated.

- a) Email and Whatsapp Contact (Will only be used to contact for appreciation gifts)
- b) Gender
- c) Age as of April 2021
- d) Please indicate your school
- f) Please indicate your major
- g) Have you attended internship as part of your school (Yes or No)
- h) If you attended internship, is it at governmental institution or Semi-private/private company?
- i) Have you been self employed as an independent worker or business owner in your OWN business (yes or no)
- j) Have you been self employed as an independent worker or business owner in your FAMILY business (yes or no)

3. The following are questions related to your determination and motivation to start a business, as a career goal, in the near future or the next 5-10 years.

**Neutral here refers to when your answers are neither incline towards disagreement or agreement.*

	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	My professional goal is to become an entrepreneur	①	②	③	④	⑤
2	I am ready to do anything to be an entrepreneur	①	②	③	④	⑤
3	I am determined to create a business in the future	①	②	③	④	⑤
4	I will make every effort to start my own business in the near future	①	②	③	④	⑤
5	I have very low intention of starting a business*	①	②	③	④	⑤
6	I have the firm intention to start a	①	②	③	④	⑤

	business some day					
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4. The following are questions related to your thoughts and plan of when, where and how you intend to create a in the near future or the next 5-10 years.

1.

	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Currently I am working at a specific plan to start a business	①	②	③	④	⑤
2	I have a clear plan to start a business in the near future	①	②	③	④	⑤
3	I have started collecting information related to starting an entrepreneurship	①	②	③	④	⑤
4	Currently I am receiving specific consultation or advice to start a business	①	②	③	④	⑤
5	I have been thinking specifically about how to fund my business.	①	②	③	④	⑤

5- The following are questions related to your confidence in your own capabilities and skills required to achieve specific outcome or context such as creating a business.

	How much confidence do you have in your ability to...	Very little confidence	Little confidence	Somewhat confident	Quite confident	Complete confidence
1	solve problems in an entrepreneurial setting.	①	②	③	④	⑤
2	managing money relating to start ups or business	①	②	③	④	⑤
3	Be creative in an entrepreneurial setting	①	②	③	④	⑤
4	Get people to agree with you	①	②	③	④	⑤
5	Be a leader	①	②	③	④	⑤
6	Making decisions in an entrepreneurial	①	②	③	④	⑤

	setting					
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6- The following are questions related to your beliefs regarding your perception of your capacity to reach a certain outcome (such as starting a business of a company) and belief of how much you are able to control outcome.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Starting a company and keeping it viable would be easy for me	①	②	③	④	⑤
2	I believe I would be completely unable to start a business*	①	②	③	④	⑤
3	I am able to control the creation process of a new business	①	②	③	④	⑤
4	If I tried to start a business I would have a high chance of being successful	①	②	③	④	⑤
5	It would be very difficult for me to develop business idea*	①	②	③	④	⑤
6	I know all the practical details needed to start a business	①	②	③	④	⑤

7- The following questions are related to your perception on the support provided by governmental policies and regulation for the creation of entrepreneurship and businesses in Brunei.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Qualified consultant and service support for the creation of businesses and entrepreneurship is available	①	②	③	④	⑤
2	Law in Brunei are unfavourable for the creation and operation of a new business.	①	②	③	④	⑤

3	The bureaucratic procedures in Brunei (including administrative steps, procedure or red-tape) for founding a new company are unclear	①	②	③	④	⑤
4	Government policies consistently favor new businesses	①	②	③	④	⑤
5	The support for new and growing businesses is a high priority for policy at the government level	①	②	③	④	⑤
6	Taxes and other government regulations are applied to new and growing businesses in a predictable and consistent way	①	②	③	④	⑤
7	Coping with government bureaucracy, regulations, and licensing requirements is NOT DIFFICULT for new and growing businesses	①	②	③	④	⑤
8	Government programs aimed at supporting new and growing firms are effective	①	②	③	④	⑤

8- The following questions are related to your perception on the ease of obtaining financial support (which includes national, public, private or family financial support) for creation of entrepreneurship and businesses in Brunei, if you were to create one.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	It is easy to obtain funding such as venture capital for the creation of new business	①	②	③	④	⑤
2	Banks DO NOT readily give loan to a new business or companies*	①	②	③	④	⑤
3	My immediate family would give me money if I start a business.	①	②	③	④	⑤
4	My family would support me with a financial institution (access to bank account/ loans) to create company	①	②	③	④	⑤
5	There are sufficient government subsidies	①	②	③	④	⑤

	available for new and growing firms.					
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9. The following questions are related to your perception on the social support provided by your parents, family and friends if you were to start a business. This includes every form of support except financial support.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	If I decide to become an entrepreneur, my parents will support me.	①	②	③	④	⑤
2	If I decide to become an entrepreneur, my family members will support me.	①	②	③	④	⑤
3	If I decide to become an entrepreneur, I will consult my family members,	①	②	③	④	⑤
4	If I decide to become an entrepreneur, my friends will support me	①	②	③	④	⑤
5	If I decide to become an entrepreneur, my families will give me emotional support	①	②	③	④	⑤

10. The following are questions related to your perception about the entrepreneurial learning that occurs in school or classroom(Including classes, CCA, ECA, school organized workshops etc).

	Through school curriculum	Not at all -----> Very much so				
1	I have acquired knowledge related to entrepreneurship such as recognize business opportunity, basics of accounting and finance and more	①	②	③	④	⑤
2	I have understood and is able to describe	①	②	③	④	⑤

	the knowledge related to business opportunity.					
3	I know how to apply my entrepreneurial knowledge application of learned information to solve a problem or answer a question;	①	②	③	④	⑤
4	I have acquired analytical skills through learning cases related to entrepreneurship such as successful case studies and more	①	②	③	④	⑤
5	I am able to evaluation or judging the worth of a business idea	①	②	③	④	⑤
6	I am able to create or reorganizing entrepreneurial knowledge into a new pattern.	①	②	③	④	⑤

11- The following are questions related to your perception about the learning that occurs through work Attachments up until now (this includes internship outside of school, work attachments, shadowing, workshops conducted outside of school). Through work Attachments...

	Through work Attachments	Not at all -----> Very much so				
1	I am able to bridge entrepreneurial theory to practice by applying knowledge I learnt in class during the work placement	①	②	③	④	⑤
2	I am able to apply knowledge and identify entrepreneurial opportunities	①	②	③	④	⑤
3	I am able to assess value creation	①	②	③	④	⑤
4	I am able to reflect on my learning and Attachment	①	②	③	④	⑤
5	I am able to develop reflection and decision making	①	②	③	④	⑤

12- The following are questions related to your perception about the learning that occurs through self-directed learning... (this includes all learning that you do on your own such as online research, and more apart from those between question 7 and 8)

	Through Self Directed Learning....	Not at all -----> Very much so				
1	I have acquired knowledge related to myself (such as my strength and weaknesses)	①	②	③	④	⑤
2	I have acquired knowledge related to environment and entrepreneurial networks (such as relationship with potential customer, suppliers and competitors)	①	②	③	④	⑤
3	I have acquired knowledge about business (such as business needs, requirement for growth)	①	②	③	④	⑤
4	I have acquired knowledge about small business management (such as how to run business effectively)	①	②	③	④	⑤
5	I have acquired knowledge about nature and management of relationships (such as recruitment or salary)	①	②	③	④	⑤

13. The following are questions related to how your preferences and tendencies in approaching decision making related to situations which involve some degree of risk and your tendencies towards risk taking.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I like to make risky decision	①	②	③	④	⑤
2	In order to create something of value you have to be prepared to make mistakes	①	②	③	④	⑤
3	I admire people who assume large risks	①	②	③	④	⑤
4	You have to take risk at times in order to be successful in life	①	②	③	④	⑤
6	I like to take bold action by going	①	②	③	④	⑤

	into the unknown.					
7	I am willing to spend a lot of time and/or money on something that might produce high return..	①	②	③	④	⑤

14- The following are questions related to your degree of openness and creativity as well as how ready you are to follow new ways when you are given new projects, assignments, activities or opportunities which you do not have much information about, in daily life, school or at work.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I often like to try new and unusual activities that are not typical but not necessarily risky.	①	②	③	④	⑤
2	I tend to do things the same way and not try different and unproven approaches.	①	②	③	④	⑤
3	I prefer to try my own unique way when learning new things rather than doing it like everyone else does.	①	②	③	④	⑤
4	I prefer experimentation and original way to solve problems rather than using common ways many people use for solving problems	①	②	③	④	⑤
5	I like teachers with a different approach and who make use of new teaching methods	①	②	③	④	⑤
6	I like to work and take part in groups where new or innovative ideas emerge	①	②	③	④	⑤

15- The following are questions related to your preference and tendencies when taking initiatives or action on any given projects, activities or assignments in daily life, school

or at work.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I usually act while anticipating or predicting problems, needs or changes in the future	①	②	③	④	⑤
2	I tend to plan well in advance when I am given a project or assignments.	①	②	③	④	⑤
3	I prefer to 'step up' and make progress on any projects, activities or assignments, rather than sit and wait for someone else to do it	①	②	③	④	⑤
4	I take the initiative whenever I have the opportunity to do so.	①	②	③	④	⑤
5	In class I'm often the first person to propose things.	①	②	③	④	⑤
6	I like to take the initiative in almost everything I do.	①	②	③	④	⑤

Thank you very much for the cooperation.

Appendix 4: Survey for Feedback For Scale from Experts

Title: Appropriateness of the questionnaires for Survey of Entrepreneurial Intention of Students of TVET Certificate Level 4

Introduction to respondents:

This is the questionnaire for the survey that will be distributed for my doctoral thesis to understand level 4 TVET Certificate or HNTec students entrepreneurial intentions, tendencies and exposure to entrepreneurship.

I would like to kindly request advice and feedback regarding the content and appropriateness of the survey questions in the context of Brunei, drawing from your expertise as either practitioner in the Brunei TVET field and Attachmentd researcher in entrepreneurial field in Brunei.

In your opinion, are the questionnaires item and its content appropriate in terms of its language and what it intends to measure? Any opinion or concerns to improve the items would be very appreciated.

This will take about 10 minutes to complete.

If you have any queries regarding this survey please contact:

Atiqah Raduan, Dept. of Agricultural and Vocational Education
CALIS, SEOUL NATIONAL UNIVERSITY

Note: All renew actual items for all variables we asked for feedback using the same format.

Example Question:

The following are questions are developed for this research from conceptualizations in

past researches. This is for observable Classroom learning (for Latent variable entrepreneurial learning) and is defined as perception about the entrepreneurial learning that occurs in school or classroom(Including classes, CCA, ECA, school organized workshops etc). Through school and classroom....

		Absolutely inappropriate	Inappropriate	Neutral	Appropriate	Absolutely appropriate
1	I have acquired knowledge related to entrepreneurship such as recognize business opportunity, basics of accounting and finance and more	①	②	③	④	⑤
2	I have understood and is able to describe the knowledge related to business opportunity.	①	②	③	④	⑤
3	I know how to apply my entrepreneurial knowledge application of learned information to solve a problem or answer a question;	①	②	③	④	⑤
4	I have acquired analytical skills through learning cases related to entrepreneurship such as successful case studies and more	①	②	③	④	⑤
5	I am able to evaluation or judging the worth of a business idea	①	②	③	④	⑤
6	I am able to create or reorganizing entrepreneurial knowledge into a new pattern.	①	②	③	④	⑤

Any opinions or concerns regarding any of the items, please write here:

The following are questions related to observable variable Workplace learning (for latent

variable entrepreneurial learning) and is defined as your perception about the learning that occurs through work Attachments up until now (this includes internship outside of school, work attachments, shadowing, workshops conducted outside of school).

	Through work Attachments	Absolutely inappropriate	Inappropriate	Neutral	Appropriate	Absolutely appropriate
1	I am able to bridge entrepreneurial theory to practice by applying knowledge I learnt in class during the work placement	①	②	③	④	⑤
2	I am able to apply knowledge and identify entrepreneurial opportunities	①	②	③	④	⑤
3	I am able to assess value creation	①	②	③	④	⑤
4	I am able to reflect on my learning and Attachment	①	②	③	④	⑤
5	I am able to develop reflection and decision making	①	②	③	④	⑤

Any opinions or concerns regarding any of the items, please write here:

The following are questions related to Observable variable self-directed learning (for latent variable entrepreneurial learning) and is defined as your perception about the learning that occurs through self-directed learning... (this includes all learning that you do on your own such as online research, and more apart from previous 2 questions). Through Self-Directed learning...

	Through Self Directed Learning....	Absolutely inappropriate	Inappropriate	Neutral	Appropriate	Absolutely appropriate
1	I have acquired knowledge related to myself (such as my strength and weaknesses)	①	②	③	④	⑤
2	I have acquired knowledge related to environment and entrepreneurial networks	①	②	③	④	⑤

	(such as relationship with potential customer, suppliers and competitors)					
3	I have acquired knowledge about business (such as business needs, requirement for growth)	①	②	③	④	⑤
4	I have acquired knowledge about small business management (such as how to run business effectively)	①	②	③	④	⑤
5	I have acquired knowledge about nature and management of relationships (such as recruitment or salary)	①	②	③	④	⑤

Any opinions or concerns regarding any of the items, please write here:

Appendix 5: Summary of Appropriateness and feedback from selected panel of experts

Table 5 Summary of Appropriateness of Questionnaire Items

Latent Variable	Observable variable	Items (Coding)	Mean Scale of appropriateness	Feedback/ Comments/ Opinion
Entrepreneurial Intention	Career Goal	EIG1	4.00	-Becoming an entrepreneur can be an amalgamation of both professional and non professional career. This is due to entrepreneurship arises from the art and sense of passion and grit, -Could include a negative statement randomly
		EIG2	3.78	
		EIG3	4.22	
		EIG4	4.22	
		EIG5R	4.22	
	Action Plan	EIG6	4.00	-The second question can be interpreted into something negative. If can be rephrase; I have the knowledge, financially prepared and goal driven to become an entrepreneur
		EIA1	4.00	The concept of planning and bootstrapping in an entrepreneurial sense can be either a singular entity or a totally different segment. Best to identify ideation, validation, prototyping and re-evaluation. -How you intend to plan the business is there..but im not clear about the where...
		EIA2	4.33	
		EIA3	4.22	
		EIA4	4.11	
EIA5	4.22			
Entrepreneurial Learning	Classroom Instruction	ELC1	3.56	-Pragmatic academicians are required for this to happen. More efforts can be done. -ammendment on grammar wise
		ELC2	3.78	
		ELC3	3.89	
		ELC4	4.00	
		ELC5	3.56	

		ELC6	3.78	
	Workpla ce Learnin g	ELW1	3.89	Some startups are able to embed entrepreneurial efforts and culture while others are administrative in nature
		ELW2	4.00	
		ELW3	3.89	
		ELW4	3.89	
		ELW5	3.89	
	Self-Dir ected Learnin g	ELS1	3.56	These are not in abundant however some startups are able to impart their culture and transitional knowledge
		ELS2	3.89	
		ELS3	3.89	
		ELS4	3.89	
		ELS5	3.89	
Environ mental Support	Govern ment policy	EVP1	3.89	Which Brunei law are you refering to? Be specific.
		EVP2	3.44	
		EVP3	3.54	
		EVP4	3.89	
		EVP5	3.56	
		EVP6	3.78	
		EVP7	3.78	
		EVP8	4.00	
	Financi al Accessi bility	EVF1	3.67	Facilities are more widely available as compared to earlier but still more room on the top can be fixed.
		EVF2	3.78	
		EVF3	3.78	
		EVF4	3.89	
		EVF5	3.89	
	Social Support	EVS1	3.56	These are not in abundant however some startups are able to impart their culture and transitional knowledge
		EVS2	3.89	
EVS3		3.89		
EVS4		3.89		
EVS5		3.89		
Entrepr eneurial Self Efficacy	Confide nce	EEC1	4.11	-The questions are best attempted with entrepreneurial tasks while validating and experimenting the idea of asserting ones -Ability to get people to agree on what? And able to be creative on what aspect? I suggest to include a <u>negative question</u>
		EEC2	4.11	
		EEC3	3.89	
		EEC4	3.56	
		EEC5	4.00	
		EEC6	4.11	
	Belief	EEB1	3.56	-This is a little vague for me as these kind of questions should be scenario

		EEB2	3.33	based as to assumption based -Mix of reverse questions. Good technique!
		EEB3	3.89	
		EEB4	4.00	
		EEB5	3.56	
		EEB6	4.22	
		Entrepreneurial Orientation	Risk taking	
EOR2	4.00			
EOR3	4.00			
EOR4	4.22			
EOR5	3.67			
EOR6	4.00			
Innovativeness	EOI1		3.78	Teaching methodology and pedagogy are often a gem but nowadays it might be possible to exert this.
	EOI2R		3.78	
	EOI3		4.00	
	EOI4		3.89	
	EOI5		4.33	
	EOI6		4.56	
Proactiveness	EOP1		4.11	Such positivist attitude and forward looking attitude will definitely assist to the positive mindset.
	EOP2		4.00	
	EOP3		4.22	
	EOP4		4.33	
	EOP5		3.90	
	EOP6		3.89	

Panel= 9 people, Profile of panel is provided in the summary in Table 6

Appendix 6: Summary of Panel for Content Validity

Table 6 Experts Profile for Content Validity

ID	Position	Year of Experience at work	Field	Age	Gender
1	Entrepreneurship mentor and incubator (Entrepreneurship Innovation Centre, Ministry of Education)	10	Entrepreneur	44	Male
2	University Lecturer* (Member of University Brunei Darussalam Entrepreneurial Village)	7	Education	35	Male
3	University Lecturer (Member of University Brunei Darussalam Entrepreneurial Village)	9	Education	39	Female
4	University Lecturer (Member of University Brunei Darussalam Entrepreneurial Village)	10	ICT	38	Male
5	University Lecturer (Member of University Brunei Darussalam Entrepreneurial Village)	13	Politics, NGO and Entrepreneurship	43	Male
6	Senior Education officer (Former teacher/in MOE)	-	Science Education	57	Female
7	Education officer (Teacher in Vocational Institution)	8 years	Communication	32	Male
8	Senior Technical instructor (Teacher in Vocational Institution)	6 years	Information Studies	36	Female
9	Education officer	10 Years	IT	37	Male

*Experts chosen from a variety of field to include opinions and feedbacks for

- 1) Expertise on Brunei Entrepreneurial Education
- 2) Expertise on Educational research
- 3) Understanding and hands on experience with Post secondary Vocational Students

Appendix 7: Excluded Cases from Actual Analysis

Table 7 Excluded Cases from Actual Analysis and its Reasons

	Reason for Exclusion		Respondent ID (Code)	Total
1	Non-Eligible respondents		ON168, ON229, ON238, ON270, ON306, ON346	6
2	Duplicate respondents in both online and physical questionnaire		ON10, ON13, ON135, ON271,	4
3	Insincere responses (same answer for all)		ON20, ON21 ON25, ON40, ON79, IB38, IB20, K25	8
4	Observation judged to be an outlier	Data that is ± 2 standard deviations away from the mean (Using Z score AND Q-Q plot to determine)	ON321, ON71, IB2, K1, ON145 ON122, IB25 ON185 ON162, IB31, ON116	11
		Mahalanobis distance (P<.0001)	ON12, ON310, ON94, ON95, K9,	5
5	Age (26 above)		ON30 ON55 ON167 ON297 ON339 ON203 ON294 ON16,	8

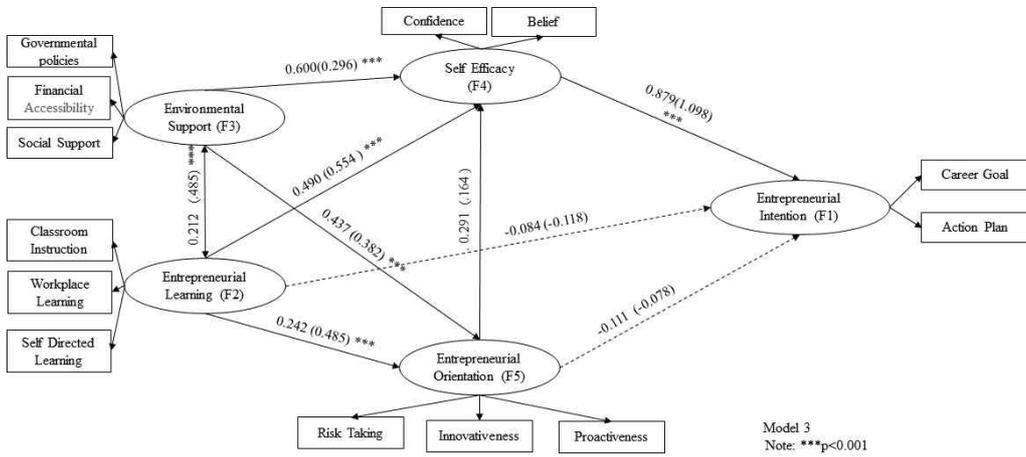
original $n=448$

If 1 to 5 criteria was removed $n= 404$

Appendix 8: Several Alternative SEM Models and their Model Fit with Path Coefficient

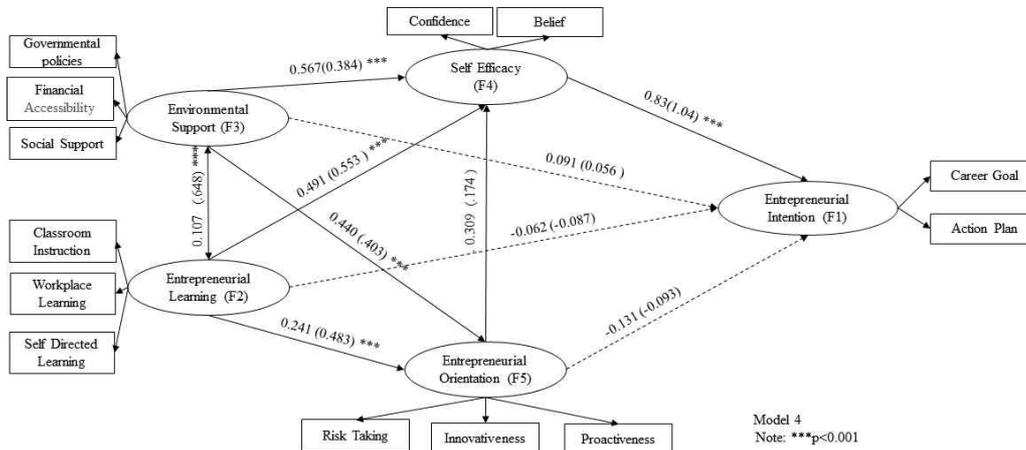
Model 3 (n=404)

Model fit indices: CHI SQ= 198.385, DF= 56, PVALUE 0.0000, RMSEA= 0.079, CFI 0.948, TLI 0.928



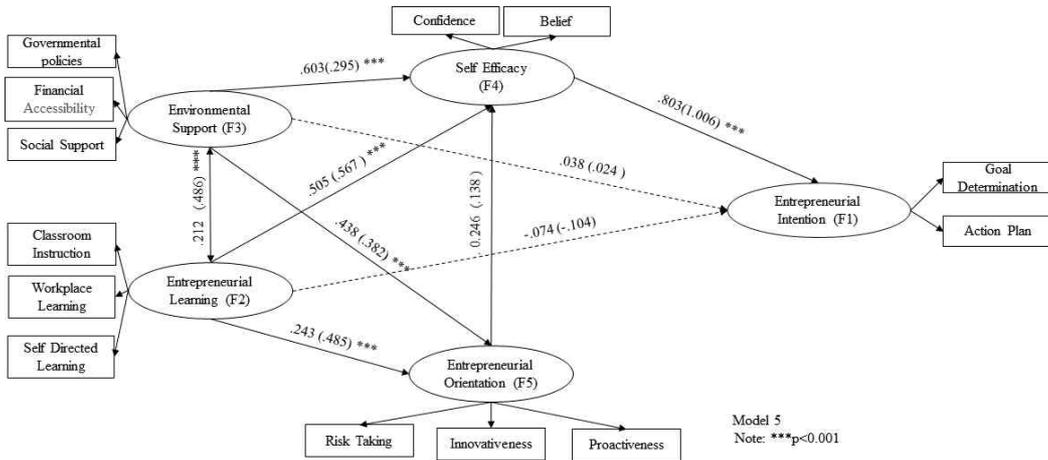
Model 4 (n=404)

CHI SQ 197.891, DF 56, PVALUE 0.0000, Rmse 0.079, CFI 0.949, TLI 0.928



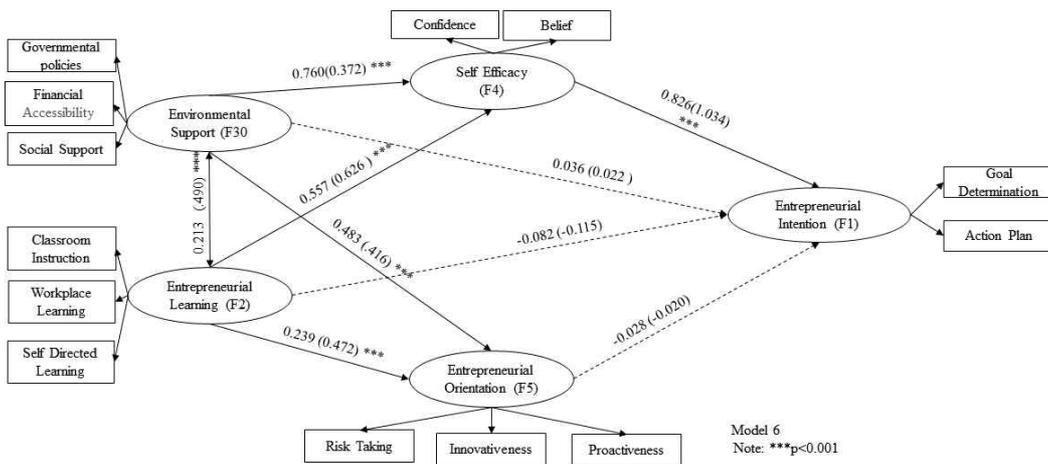
Model 5 (n=404)

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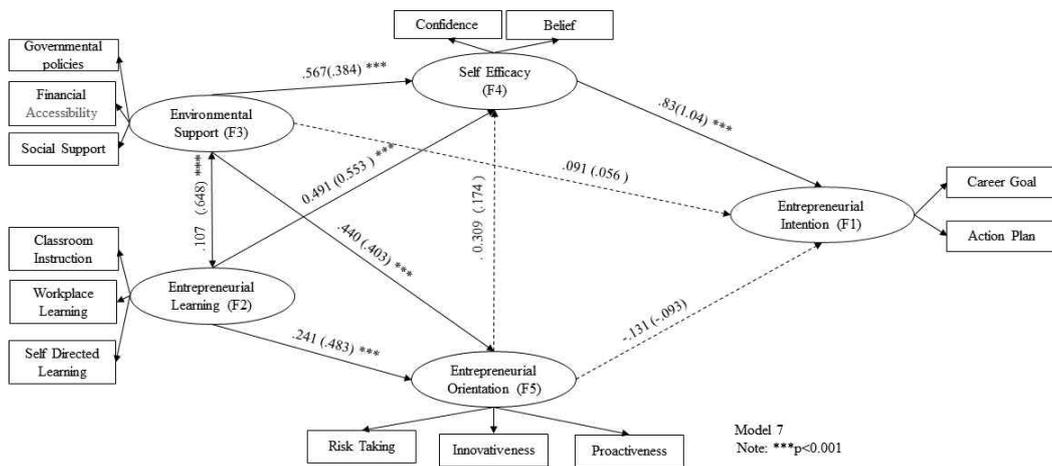
Model 6 (n=404)

CHI SQ 201.517, DF 56, PVALUE 0.0000, RMSEA 0.080, CFI 0.947, TLI 0.927



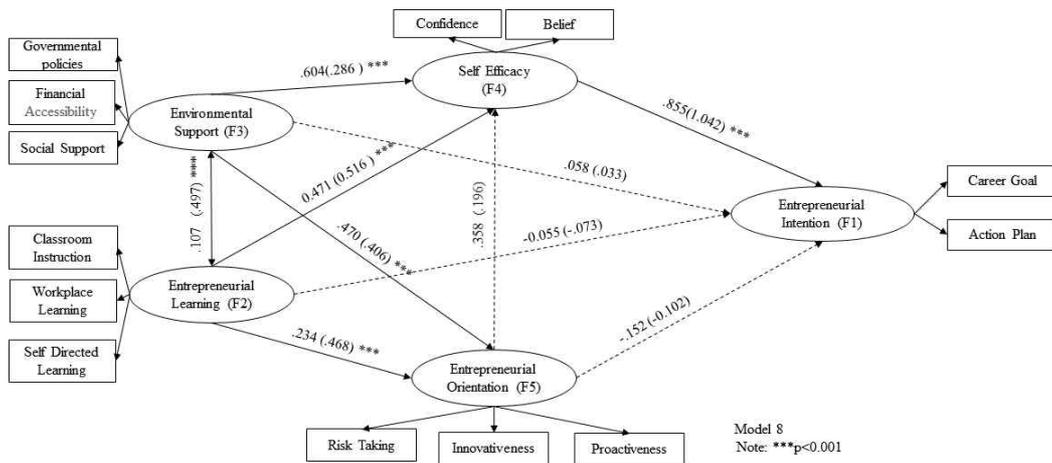
Model 7 (n=404)

Chi Square Test 198.460, DF 57, PVALUE 0.0000, Rmsea 0.078, CFI 0.949, TLI 0.930



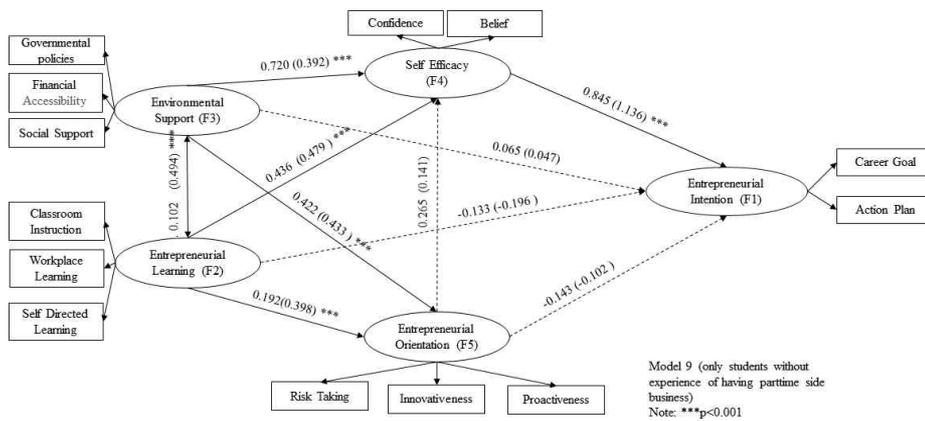
Model 8 (n= 326; only public school)

Chi Square Test 200.746, DF 55, PVALUE 0.0000, Rmsea 0.090, CFI 0.937, TLI 0.911 SRMR= 0.046



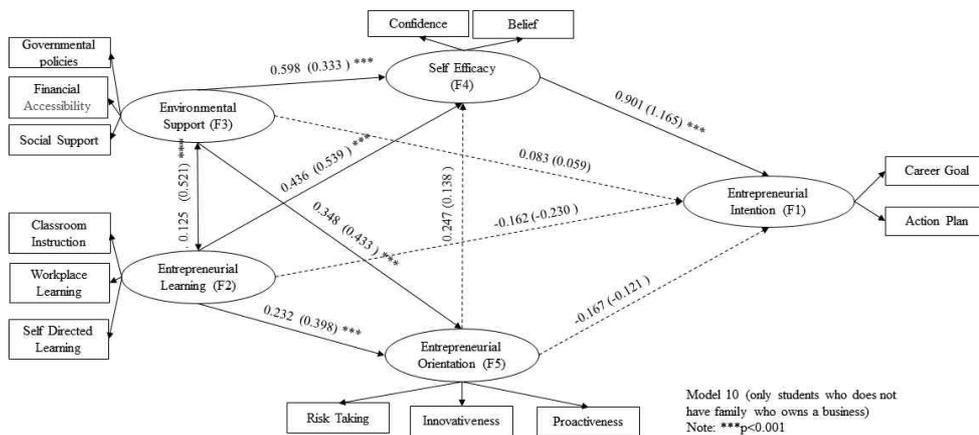
Model 9 (n= 288, only students without experience of partime business)

Chi-Square Test= 159.867, DF 55, PVALUE 0.0000, Rmsea 0.081. CFI 0.937, TLI 0.911, SRMR= 0.048



Model 10 (n= 268; only students who does not have family who owns a business)

Chi-Square Test= 159.867 DF 55 PVALUE 0.0000 Rmsea 0.087 CFI 0.936 TLI 0.909 SRMR= 0.050



국문초록

브루나이 QF 4급 직업교육 학생들의 창업의도와 창업학습, 외부적 창업지지, 창업자기효능감, 창업지향성의 구조적 관계

교육학 박사 학위논문
서울대학교 대학원, 2021년
Nur Atiqah Raduan

이 연구의 목적은 브루나이 QF 4급 직업교육 학생의 창업의도, 창업학습, 외부적지지, 창업자기효능감 및 창업지향성의 구조적 관계를 구명하는데 이었다. 구체적인 연구목표는 첫째, 창업학습, 외부적지지, 창업지향성, 창업자기효능감과 창업의도와의 구조적 관계를 설정한다. 둘째, 창업의도에 창업학습, 외부적지지, 창업지향성, 창업자기효능감이 미치는 영향을 구명한다. 셋째, 창업학습, 외부적지지가 창업자기효능감과 창업지향성을 매개로 창업지향성에 미치는 영향을 구명한다.

모집단은 브루나이 QF 4급 직업교육 기관에 재학 중인 학생이며, 본 연구에는 15개 직업교육 기관에 재학 중인 학생 404명을 표집하였다. 조사도구는 설문지를 사용하였고, 창업의도, 창업학습, 외부적지지, 창업자기효능감과 창업지향성 잠재변인을 측정하는 측정도구를 이용하여 자료를 수집하였다.

자료 수집은 2021년 5월부터 6월사이 이메일과 온라인 조사를 통하여 이루어졌

으며, 448부가 회수되었다. 이 중 불성실 응답 자료와 이상치를 제외한 404부가 최종 분석에 사용되었다(유효 자료율 90.2%). 자료분석은 SPSS 26.0 for Windows를 이용하여 기술통계 분석과 신뢰도 분석을 실시하였고, MPlus 6.0을 이용하여 구조모형의 적합도와 변인간 직접효과, 매개효과, 및 조절효과를 검증하였다. 추리통계 결과에 대한 통계적 유의수준은 .05로 설정하였다.

연구의 결과는 첫째, 기술통계 분석 결과 나이, 성, 학교 유형, 현장실습 경험(work attachment experiences)은 창업의도에 유의한 영향을 미치지 않는 것으로 나타났다. 다만, 여성의 창업자기효능감($M=191.44$)은 남성($M=196.29$, Z score=-2.351, $P<0.05$)과 유의한 차이가 있으며, 사립학교 학생의 자기주도 학습이 공립학교 학생($M=196.29$)에 비하여 높은 것으로 나타났다($M=228.46$, Z score=-2.351, $P<0.05$). 반면 가족소유 자영업 가게 또는 자영업에 대한 경험은 창업의도, 창업학습, 외부적 지지, 창업자기효능감, 창업지향성에 유의한 영향을 미치는 것으로 나타났다. 둘째, BDQF 4급 학생의 창업의도, 창업학습, 외부적지지, 창업자기효능감, 창업지향성의 구조모형의 적합도 지수는 모두 양호한 것으로 나타났으며, 창업자기효능감($\beta=.928$)은 창업의도에 정적인 영향을 미치는 것으로 나타났다. 셋째, 창업자기효능감과 창업지향성은 모두 창업학습, 외부적지지를 매개로 창업의도에 정적인 영향을 미치는 것으로 나타났다. 외부적지지는 창업자기효능감을 매개로 창업의도에 정적인 영향($\beta=.287$)을 미치며 창업학습은 창업자기효능감을 매개로 창업의도에 정적인 영향($\beta=0.502$)을 미치고 창업지향성은 창업자기효능감을 매개로 창업의도에 정적인 영향($\beta=0.135$)을 미치는 것으로 나타났다. 반면, 창업학습은 창업지향성과 창업자기효능감을 이중매개로 창업의도에 정적인 영향($\beta=.065$)을 미치는 것으로 나타났으며, 창업지향성과 창업자기효능감 또는 이중매개 효과가 있는 것으로 나타났다($\beta=.051$ $p<.01$).

연구의 결론은 첫째, 브루나이 QF 4급 직업교육 학생의 창업의도와 창업학습, 외부적지지, 창업자기효능감 및 창업지향성간의 구조모형 설정이 가능하다. 둘째, 창

업을 위한 역량과 스킬 및 목표에 대한 통제에 대한 믿음을 갖춘 학생은 창업을 시작하려는 욕구가 더 높은 경향이 있다. 셋째, 창업자기효능감은 창업의도와 창업학습의 관계 및 외부적지지와 창업의도와 관계에서 매개효과를 갖는다. 따라서 창업자기효능감은 창업의도와 창업학습, 창업자기지향성, 및 창업학습과의 관계를 매개함으로써 창업의도를 결정하는 중요한 변인이다. 또한 창업학습, 외부적지지와 창업지향성간 유의한 정적 영향이 없는 것으로 나타났다. 이는 브루나이의 사회문화 및 경제상황의 고유한 특성을 반영한 결과로서 첫째, 브루나이는 임대(rentier) 및 복지 국가로서 청년층은 대체로 안정된 일자리를 열망하고 위험 부담을 꺼리며, 내적 자기 통제 및 미래지향성이 부족한 경향이 있다. 둘째, 브루나이는 엄격한 계층구조와 강한 가족 유대를 가진 높은 집단주의 문화를 가지고 있다는 점이 이와 같은 결과에 영향을 미친 것으로 추정할 수 있다.

연구 결과에 따른 제언은 첫째, 이 연구는 창업의도의 개념화를 위한 이론적 기반을 제공하였다. 창업의도에 대한 다수의 선행연구는 창업의도를 단일 차원에서 접근하였기 때문에 의도와 행동간의 과정에 대한 충분한 탐색이 이루어지지 못했다. 이 연구는 목표의도와 실행의도의 개념을 구안함으로써 하나의 탐색적 기도로써 의도와 행동간의 과정의 연구 공백을 메꾸고자 하였다. 둘째, 진학 및 취업을 준비하는 BDQF 4급 학생들의 창업자기효능감을 증진시키기 위한 창업교육 정책 및 프로그램이 개발되어야 할 필요가 있다. 셋째, 브루나이 창업교육의 목표를 위협에 대하여 감내하며, 능동적이고 창의적인 학생 양성으로 재조정할 필요가 있다. 넷째, 미래의 창업교육 정책 및 프로그램은 창업 정책 입안자, 교육훈련 공급자, 및 지역사회간의 삼자 관계를 통하여 수립될 필요가 있다. 또한 고등교육 정책가의 양성은 잡 새도잉, 인턴십, 새로운 벤처의 창출 및 상업화 시도와 같은 경험적 학습기회를 제공해줄 수 있을 것이다.

후속 연구를 위한 제언은 첫째, 이 연구에서는 창업의도를 분석하기 위하여 정

량적 방법을 사용하였는데, 정량적 방법과 함께 정성적 방법을 활용한 혼합연구 방법을 활용한다면 특히 중등 직업교육 단계의 학습자의 창업 의도에 대한 보다 풍부한 해석이 가능할 것이다. 둘째, 이 연구는 BDQF 4급 직업교육 학생의 실제 창업 행동이 아닌 창업에 대한 의도를 분석하였다. 그러나 의도는 계획된 행동의 예측변인 (Ajzen, 1991)으로서 의도와 실제 행동간의 연속성을 분석하기 위하여 중단 연구가 필요하다. 셋째, 창업의도에 영향을 미치는 연령을 비롯한 인구통계학적 변수에 따른 후속 연구가 필요하다. 넷째, 집단주의, 개인주의, 여성성, 남성성 등 문화적지향성에 영향을 미치는 다양한 변인의 차이를 검증하고, 문화간 비교 연구가 후속 연구에서 수행될 필요가 있다.

Keyword : 부르나이 다루살람, 직업교육훈련, 창업의도, 창업학습, 창업자기효능감, 구조방정식

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