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ANALYZING THE INFLUENCE OF THE ENVIRONMENTAL FACTORS, ENTREPRENEURIAL ORIENTATION AND ENTREPRENEURSHIP PRACTICES ON VOCATIONAL ENTREPRENEURIAL TEACHING PRACTICES

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Abstract

Purpose - Studies on understanding entrepreneurial in education in non-business field have recognized the important role of environment factors within entrepreneurial practices. The purpose of this paper is to examine entrepreneurial orientation as a mediator on the relationship between environment factors and entrepreneurial practices among vocational teachers.

Design/methodology/approach – A survey and data were collected from a sample of 340 vocational college teachers. Respondents were clustered by state in Malaysia and finally six states were randomly selected to represent a population study. Results were obtained by adopting a structural equation modelling analysis using SEM-AMOS software.

Findings – Results show the influence of environmental factors on entrepreneurship practices among vocational teachers. These influences are also mediated by entrepreneurship orientation. Vocational teachers who are innovative, proactive and risk taking use optimistic practices in teaching entrepreneurship even though they teach vocational subject. Moreover, the findings present the connection between teachers' perception on vocational institution involvement and their implementation of entrepreneurship education.

Originality/value - The Structural Equation Modeling was observed to be sufficiently solid and flexible to incorporate and measure the three constructs (environmental factors, entrepreneurial orientation and entrepreneurship practices) on teaching practices among vocational teachers. The results of the analysis indicate that the entrepreneurship practices could be estimated by using exogenous constructs in the model namely environment factors and entrepreneurship orientation. At the same time, the entrepreneurship orientation could be measured by environment factors. The research findings provide some insightful implication for the teaching of entrepreneurship. To achieve greater impact on entrepreneurial orientation teachers are required to demonstrate sufficient teaching entrepreneur aspect such as proactiveness, innovativeness and risk-taking. As implication to policy, the government should ensure not only enriching teachers with entrepreneurial conducive environment but also equip with entrepreneurial orientation as it has a direct effect on entrepreneurial teaching practices.

Paper type Research paper

Introduction

In recent years, the growing interest among researchers are on how to embed the sense of entrepreneurial teaching at vocational education institution (Morselli, 2018). One of the objectives of the establishment of technical and vocational education and training (TVET) is to stimulate undergraduate students to become entrepreneurs and is an important channel for increasing the number of small business entrepreneurs as it offers

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market-oriented skills (Bagheri & Pihie, 2013) and technical skills (Buang, 2013). A previous study from Elenurm and Heil (2015) has shown that successful entrepreneurs are 2.1 times higher among entrepreneurs with vocational education than academic degrees. Recent studies show that that the overall entrepreneurial tendencies of vocational college students are high but the level of students' career choice is at moderate level (Mohammad & Othman, 2018; Che Alis & Rahman, 2019). Hence, entrepreneurship can be an important element of education policies especially in TVET.

Vocational colleges are pressed to stimulate entrepreneurship and form entrepreneurs in several countries, such as Malaysia. However, the lack of specific models underlying entrepreneurial learning in TVET raises doubts if these colleges can really provide a learning system that fosters entrepreneurship. Programs such as 'Enterprise School' has been introduced in line with the awareness of entrepreneurial interests. Negative feedbacks from industry representatives about students' difficulties to develop creative and entrepreneurial work stimulated Vocational Colleges to insert entrepreneurship into vocational education (Ministry of Education, 2014).

Frequent changes of the curriculum in the education system in Malaysia have led to changes in teaching practices among teachers. The changes took place in a vocational stream, formerly known as Vocational High School and now called Vocational College. The college offers a revised curriculum at the certificate and diploma level that uses the Outcome Based Education (OBE) approach and curriculum. Former Vocational High Schools students in third grade were required to attend a vocational stream program for two years and they only obtained the Malaysian Certificate of Education. This environment uncertainty requires educators to align their teaching practices and continually adapt to the environmental change. Furthermore, according to Järvi (2012), among the problems faced by teacher in the vocational fields, one of them is in finding a suitable method for developing curriculum especially when it involves the introduction of new curriculum. When the lesson is being carried out, the classroom practices discussion includes behaviour management. Walter and Smallbone (2011) emphasised that in order to understand the learning that takes place in the context of entrepreneurship, it is usually necessary to refer to the resulting behaviour of teaching and learning. Heitanen and Jarvi (2015) also explained the concept of entrepreneurial learning process is to understand and study how individual entrepreneurs act in the context of education without strongly emphasizing the elements of business establishment.

Most domestic studies in entrepreneurship education focus more on higher teaching and learning and beyond field of TVET (Wahid, Ibrahim & Hashim, 2017; Ooi et al., 2014). Hietanen and Jarvi (2015) stated that the concept of entrepreneurship will be executed in a specific learning environment and is usually guided by national guidelines. Teachers play a leading role in understanding what it means to be entrepreneurial in the school context, and in transforming this understanding into teaching practices that will make students entrepreneurial in the long term. However, little attention is being paid to teachers' perspectives (Ruskovaara & Pihkala, 2015) and study shows that most vocational teachers are not familiar with the concept (Morselli, 2018). Thus, vocational teachers find it difficult to identify best practices and embedded entrepreneurial elements into their teaching programs (Seikkula-Leino et al., 2015). On the other note, vocational teachers seem to perceive high level of preparedness to practice entrepreneurial element in their teaching (Nurul Izzati, Soaib & Zaidatol, 2012;). Therefore, the development of a teaching practices model may create general understanding on the implementation of entrepreneurship in vocational education. The purpose of this paper is to examine entrepreneurial orientation as a mediator on the relationship between environment factors and entrepreneurial practices among vocational teachers. A graphical model of entrepreneurial teaching practices, environmental factors and entrepreneurial orientation was developed to understand the relationship of these variables. Furthermore, three hypotheses were built and discussed in section below.

This paper is motivated by a general epistemological interest in why people act and behave entrepreneurially. To approach the issue of why Entrepreneurial Orientation across different cultural settings seems to vary to such a large extent, we attempt to apply the construct of entrepreneurial orientation. This is a common construct utilized to measure the attitude towards entrepreneurship. Entrepreneurial orientation is what drives entrepreneurial action which is typically modeled in the form of processes (Bhave, 1994; Kollman, Christofor & Kuckerts, 2007). Entrepreneurial orientation is defined by Bolton

and Lane (2012) as behaviors that guide individual entrepreneurial traits. Luvenburg and Schwarz (2008) said that when considering the entrepreneurial orientation of individuals, the question that often arises is "what personal characteristics or attitudes of a person can increase the likelihood of engaging in and engaging in entrepreneurial activities.

In the field of entrepreneurship, great attention has been focused on entrepreneurial orientation over corporate entrepreneurship (Covin & Lumpkin, 2011). Entrepreneurial orientation refers to the process of making strategies that provide organizations with the basis for entrepreneurial decision-making and action (Lumpkin & Dess, 1996). Rauch et al. (2009) gathered findings that prove that entrepreneurial orientation acts as a predictor of firm performance. However, Bolton and Lane (2012) argued that entrepreneurial orientation is not only a firm's stated strategy but it can also be an individual strategy. They argued that the dimension of entrepreneurial orientation can be applied to individuals because individuals also define organizations, especially small organizations, based on individual behaviors, so entrepreneurial orientation dimensions should also be measurable for individuals. Even the scope of entrepreneurial orientation has also gained attention in non-firm or non-business contexts such as education to develop individual potential (Su & Sohn, 2015).

Considering all of the information above, the question arises whether this entrepreneurial orientation mediates environmental factors and entrepreneurial practices. The focus of the study is on the entrepreneurial orientation of teachers to understand whether this orientation mediates environmental factors and entrepreneurial practices. That is a very interesting goal and may offer good insights to theory and practice. According to Giannakos, Krogstie and Aalberg (2016), they stated that environmental factors affect "behavior" in teaching and learning. Whereas, in terms of entrepreneurial practices, Politis (2005) argued that only certain experiences are capable of providing entrepreneurial knowledge and Spanjer and Witteloostuijn (2016) also argued that the more entrepreneurial experiences a person has, the more likely he is to become an entrepreneur.

Literature Review on Entrepreneurial Teaching Practices

According to recent findings from Talkis, Rahman and Othman (2018), there is a positive and significant relationship between teachers teaching practice and students behavior on entrepreneurial career selection. Past studies on entrepreneurial practice among teachers often focus on teaching methods (Ruskovaara & Pihkala, 2013; Jarvi, 2012). Gibb and Price (2014) have listed a compendium of 44 pedagogies for teaching entrepreneurship. According to Ramsey and Edwards (2011), the teaching used for entrepreneurship education should be based on active learning process with non-traditional teaching methods. Teaching methods in entrepreneurship education are often discussed in the form of cooperative learning, teamwork, projects, learning by doing, and business practices (Seikkula-Leino et al., 2015). The most common teaching methods used by teachers to teach entrepreneurship are lectures, project work, business games, mini-companies, company visits, work placements and technology based. In addition, learning through playing, simulation and role playing have also been reported to aid student learning (Neck & Greene, 2011) an out-of-class activities can also broaden students' perceptions of their potential (Ruskovaara & Pihkala, 2015) for entrepreneurship education.

According to Neck and Greene (2011), the objective of entrepreneurship education is to build students' knowledge and skills. Therefore, the learning process that exposes the actual experience is very valuable (Kickul et al., 2010). Bosma et al. (2012) highlight that the presence of an entrepreneurial role model plays an important role in teaching entrepreneurship. Although there is no consensus on the most effective way to teach entrepreneurship, activities that emphasize real-life experience and problem-based learning can foster entrepreneurial thinking and skills. Therefore, this study adopted entrepreneurship practices suggested by Ruskovaara and Pihkala (2013) which include: project-based learning, material, economic, and entrepreneurship game-based. A common practice of project-based learning in entrepreneurship education have been reported useful to foster students' entrepreneurial intentions in many research (Lubis et al. 2019).

Good teaching practice is not only determined by the ability of teachers to respond to the needs of students learning but various factors such as classroom environment and institutions. In Fayolle, Gailly and Lassas-Clerc (2006) entrepreneurial education model, they suggested that other factors outside of education have a certain influence on teachers' teaching practices.

Environmental Factors and Entrepreneurship Orientation on Entrepreneurship Practices

The model of Fayolle, Gailly and Lassas-Clerc (2006) suggests that external factors such as the environment and background influence entrepreneurial behavior. In addition, this model is dedicated to the teaching and learning process that can change the attitude and consequences associated with entrepreneurship. This is in line with the aim of this study that focuses on the "what" and "how" that enables entrepreneurship education to be implemented by vocational teachers.

The Theory of Planned Behavior (TPB) explains that the main factors of planned behavior are influenced by the individual's intention to perform the given behavior (Ajzen, 1991). TPB is a relevant and most used by researchers for modeling entrepreneurial development through the pedagogical process (Klapper & Farber, 2016). Fayolle, Gailly and Lassas-Clerc (2006) pointed out that the TPB construct was not used as a predictor of entrepreneurial behavior. Instead, it is a relevant tool for modeling the development of entrepreneurial intentions through pedagogical processes and learning contexts.

Ayub and Othman (2013) found that effective entrepreneurial environments include community support, administrative support, academic achievement, and graduate quality. Available resources from networks (involving local companies, associations, and national and international initiatives) also have an impact on entrepreneurship education (Ruskovaara & Pihkala, 2015). The abovementioned resources have a positive impact on entrepreneurship education (Jones & Iredale, 2010).

In a model proposed by Stark and Lattuca (1997), these environments were categorized into three: external influence, organizational influence and internal influence. Specifically, external influences comprise communities, governments, association disciplines, job markets, and alumni. Organizational influences include program relationships, program resources, governance, and leadership. Meanwhile, internal influences comprise faculty, students, disciplines, program missions, and leadership. Pawilen (2012) emphasized that relevant parties should identify the influence of education in the design and evaluation of the curriculum. Therefore, in implementing entrepreneurial teaching, teachers need to identify and prepare to handle elements of the environment that are said to have their own challenges (Ispal & Jabor, 2014). Based on these assumptions we propose the following Hypothesis:

H_1: There is a positive influence of environmental factors on the use of teaching practices that foster entrepreneurship among vocational teachers.

The concept of entrepreneurial orientation and its influence on entrepreneurial behavior has gained attention among researchers in the field of education (Xaba & Malidi, 2010; Bolton & Lane, 2012; Taatila & Down, 2012; Rahim & Lajin, 2017). Entrepreneurial orientation is a variable that is studied in depth, especially within an entrepreneurial organization or firm (Rauch et al., 2009). Employee performance is defined as a group of behaviors that contribute to organizational goals (Mohammadi & Zadeh, 2016). Whereas, according to Hashim et al. (2017), individual performance in an organization is based on a general belief in what employees are capable of contributing to their behavior. Thus, according to Bambhrolia and Phelan (2017), entrepreneurial orientation and performance behaviors can also be used in non-profit contexts, gaining the attention of researchers in the field of entrepreneurship education and training (Xaba & Malindi, 2010). Bolton and Lane (2012) argue that studies of entrepreneurial orientation are of great importance to faculty for restructuring teaching, decision making and curriculum development. Xaba and Malindi (2010) also mentioned that entrepreneurial orientation at the organizational level is related to the pursuit of opportunities that improve the material and teaching environment in schools. The systematic review by Rausch et al. (2009) compares in detail the constructs used by previous researchers on entrepreneurial orientation. They conclude that only three constructs are widely used: innovative, risk-taking, and proactive. According to this study, teachers can be viewed as innovative, risk-taking, proactive or not that motivate them to implement entrepreneurial teaching more effectively. Therefore, this study proposes the following hypothesis:

H_2: There is a positive influence of teachers' entrepreneurial orientation on the use of entrepreneurial teaching practices.

A supportive environment enables the implementation of entrepreneurial activities as long as the teacher lacks the entrepreneurial orientation dimension. Previous studies have reported various findings on entrepreneurial orientation as mediators. The study of Kusmintarti et al. (2016) has shown that entrepreneurial traits (with elements of entrepreneurial orientation) act

as a full mediator between entrepreneurial education and entrepreneurial intentions. This means that entrepreneurial intentions are enhanced when it comes to entrepreneurship education in the form of training and engagement in business class, as well as enhancing entrepreneurial features such as locus of internal control, need for achievement, risk, creativity, social networking, and tolerance. In addition, a study by Khedhaouria, Gura˘u and Torre`s (2015) developed a model to test how creativity, self-efficacy, entrepreneurial orientation influence perceived performance. Self-efficacy and entrepreneurial orientation have a direct positive relationship with performance while entrepreneurship orientation acts as the perfect mediator between the creativity and performance. Therefore, this study suggests another hypothesis as follow:

H_3: Entrepreneurship orientation mediates the relationship between environmental factors and entrepreneurial teaching practices among vocational teachers.

Figure 1 shows the conceptual framework of this study.

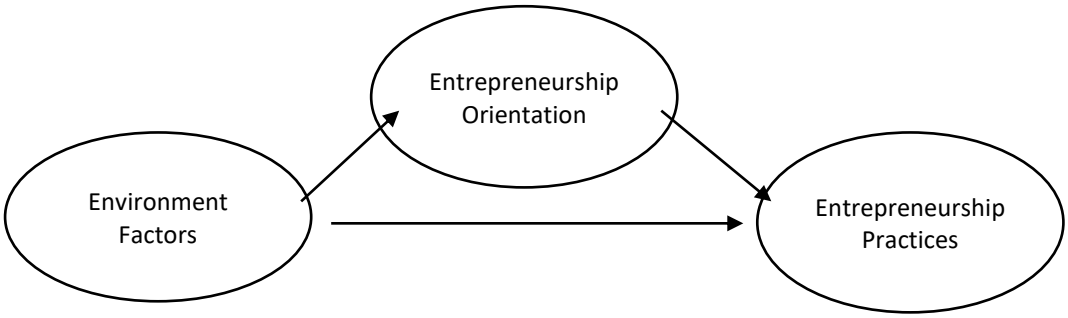

Figure 1. **Conceptual Framework**

Materials and methods

Research Design

Global Entrepreneurship Monitor (2016) reported that entrepreneurship learning ecosystems in for school-level are still inadequate. Similarly, reports from the Malaysia Youth Index (2015) has shown that youth entrepreneurship indicators are at a moderate level and the prevalence of entrepreneurial activity among youth aged 18 to 24 are still low. These findings can be linked with a study from Ayub and Othman (2013) which reported that entrepreneurial learning has a relationship with the environment that supports it. Thus, the scope of study will be focusing on TVET institution specifically the vocational colleges in Malaysia. This study implemented quantitative research method in attempt to generalize the research findings and are typically interested in prediction (Harwell, 2011). A correlational survey research design was used as it is in line with the objective of this study which is to find the relationship between variables under study. It is also a suitable method to study a phenomenon that are not directly observable (Darusalam & Hussin, 2016) such as in measuring teachers' perception of their teaching. The advantage of the survey study is that it can be generalized if a sample that truly represents the population are properly selected (Idris, 2012).

Sample

The population of the study are vocational college teachers in Malaysia. 340 teachers were selected randomly using cluster sampled design (Darusalam & Hussin, 2016) from six states in Malaysia namely: Pahang, Perak, Selangor, Kedah, Negeri Sembilan, and Sabah. As a general rule, the minimum is to have at least five times as many observations as the number of variables to be analyzed, and the more acceptable sample size would have a 10:1 ratio (Hair et al., 2014). Thus, taking into account all considerations, the minimum sample size for this study is achieved.

Variable measures

The final version of the instrument contains 58 items. For environmental factors, there are 18 items (External influences 6 items, Organizational influences 7 items, Internal influences 5 items). This section uses five-point influential scale ranges from not very strong to very strong. The entrepreneurship orientation section also contains 18 items (Innovative 6 items, Risk taking 6 items, Proactive 6 items). This section uses five points agreement scale from strongly disagree to strongly agree. Lastly, for entrepreneurship practices, there

are 22 items (Project 6 items, Material 7 items, Economy 4 items, Game based learning 5 items). This section uses five-point agreement scale from strongly disagree to strongly agree. The analysis of the findings starts by testing the validity and reliability of the 58 items from 3 variables namely entrepreneurship practices, environment factors and entrepreneurship orientation. All three variables were capable of explaining sufficient variation in the measured constructs, indicating that the survey instrument was reliable. Based on the content validity ratio, all items demonstrated adequate content validity index proposed by Lawshe (1975) and reliability using Cronbach alpha achieved interpretation by Bond and Fox (2007). Besides, the measurement model also meet the standard specification indices as outlined by Newsom (2012). Thus, the items proved to be not only valid and consistent but achieved enough model fit indices to measure all the constructs under study.

The instrument used in this study has gone through the validity and reliability processes. For validity, content validity index (CVI) was calculated among 12 experts in order to confirm on whether all the items used are suitable within field of study. The CVI for environmental factors (0.788), entrepreneurship orientation (0.674), and entrepreneurship practices (0.713) are all above the cut-off value (0.56) as stated by Lawshe (1975) and recently used in Effendi et al. (2017). For reliability of the instrument, Cronbach alpha value for environmental factors, entrepreneurship orientation, and entrepreneurship practices are 0.940, 0.960, and 0.941 respectively. Based on reliability interpretation by Bond and Fox (2007), these item shows a very good and have a high level of consistency.

Data Analysis

Data exploration analysis was performed to identify problematic data such as outliers, non-normal distribution, error and missing data. Descriptive and inferential analysis using SEM-AMOS software were implemented to analyse the remaining data. In order to achieve a good model, Newsom (2012) and Awang (2015) suggested several fit indexes values. A chi-square statistic and other fit indices were applied to analyse the data. In addition, the root mean square error of approximation (RMSEA), the Tucker-Lewis Index (TLI) and the comparative fit index (CFI) were used. Concurrent values lower than 0.08 for the RMSEA and greater than 0.90 for both the CFI and TLI were reflective of having good and acceptable fits into the data. Loadings close to -1 or 1 indicate that the factor strongly influences the variable. Loadings close to 0 indicate that the factor has a weak influence on the variable. Some variables may have high loadings on multiple factors. High factor loading (≥ .5) on a factor indicate high convergent validity (Hair et al., 2010; Bryne, 2010).

Results

Measurement Model

Figure 2 shows that factor loading for environmental factors were between 0.79 and 0.86 and Entrepreneurship Orientation were between 0.90 and 0.95. Also for entrepreneurship practices were between 0.78 and 0.89. All the loading factor achieve the minimum standard score of 0.5 (Awang, 2015). 0.7 or higher factor loading represents that the factor extracts sufficient variance from that variable. The measurement model also presented a good fit between data models and sample size with χ^2/df = 2.949 CFI = 0.977, TLI = 0.968 and RMSEA = 0.076.

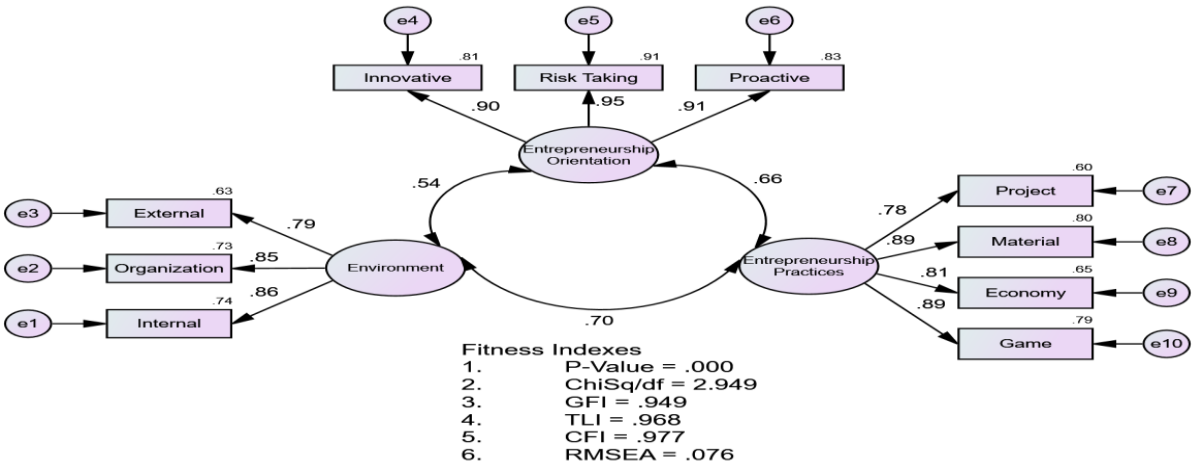

Figure 2. **Measurement Model**

The results show that there is a significant correlation between environmental factors and entrepreneurship practices (r = 0.70, p<0.001). There is also a significant correlation between Environmental Factor and Entrepreneurship Orientation (r = 0.54, p<0.001) and between Entrepreneurship Orientation and entrepreneurship practices (r = 0.66, p<0.001). Therefore, the discriminant validities of the variables were achieved because the correlation matrix with correlations was not more than 0.90 (Kline, 2005). Table I shows results from analysis of correlation between environmental factors, entrepreneurship orientation and teaching practices among vocational college teachers.

Table I. **Correlational Matrix**

Parameter		Parameter	*r*	p
Environmental Factor	<-->	Entrepreneurship Practices	0.70	***
Environmental Factor	<-->	Entrepreneurship Orientation	0.54	***
Entrepreneurship Orientation	<-->	Entrepreneurship Practices	0.66	***

*** significant level at 0.001

Structural Model

Figure 3 shows the results of the structural equation model analysis. The result shows that the structural model has achieved good model fitness indexes at χ^2/df = 2.949, RMSEA = 0.076, TLI = 0.968 and CFI = 0.977. These results show that the required level for fit indices were achieved. R^2 value for the whole model is 0.60. This indicates that 60% of the entrepreneurship practices could be estimated by using exogenous constructs in the model namely environment factors and entrepreneurship orientation. At the same time, 29% of the entrepreneurship orientation could be measured by environment factors.

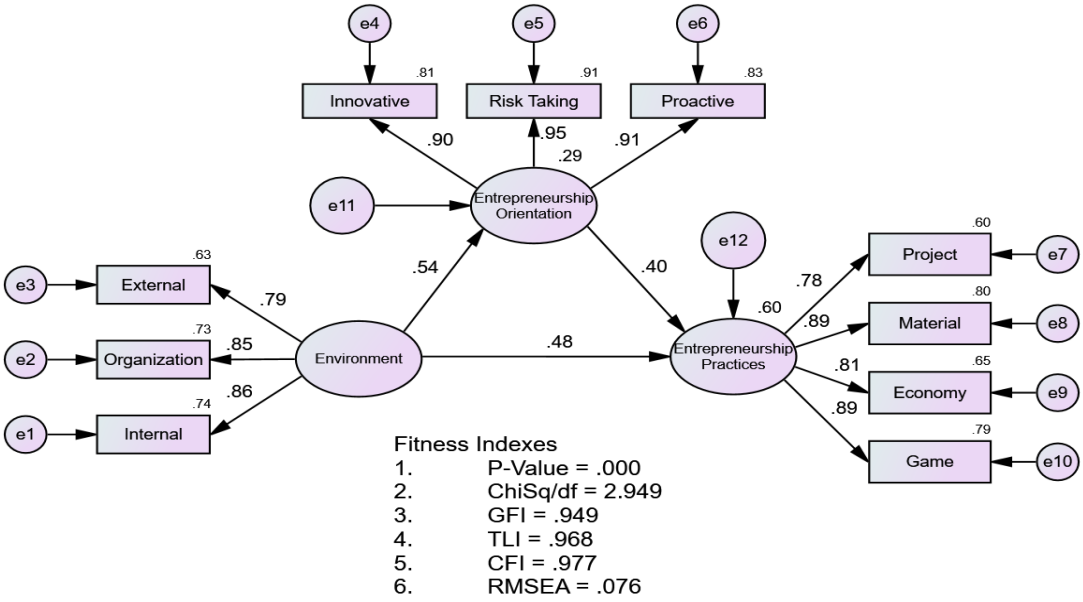

Figure 3. **Final Model of Study**

Table II showed the result of direct effect of environmental factors to entrepreneurship orientation and entrepreneurship practices. Hypothesis 1 postulated that environmental factors positively influenced entrepreneurship practices. Environmental factor has significant direct effect on entrepreneurship practices (β = 0.48, t = 8.36, *p*<0.01). Environmental factor was one of factor contributing to Entrepreneurship Practices. Thus, Hypothesis 1 was supported. Hypothesis 2 stated that environmental factors positively influenced entrepreneurship orientation. Significant relationship existed between environmental factors and entrepreneurship orientation (β = 0.54, t = 9.55, *p*<0.01). Accordingly, conclude that Environmental factor was one of factor contributing to Entrepreneurship Orientation. Thus, Hypothesis 2 was supported.

Table II. **Result of Direct Effect**

Parameter		Parameter	Estimate	SE	t	p
Environmental Factor	--->	Entrepreneurship Practices	0.48	0.06	8.36	***
Environmental Factor	--->	Entrepreneurship Orientation	0.54	0.08	9.55	***

Hypothesis 3 proposed that entrepreneurship orientation is a mediating variable in the relationship between environmental factors and entrepreneurship practices (β = 0.22, p<0.01). The results indicated that entrepreneurship orientation had positive partial mediating effect on the relationship between environmental factors and entrepreneurship practices. The type of mediation here called a partial mediation since the direct effect of environmental factors on entrepreneurship practices (β = 0.54, p<0.01) is still significant after entrepreneurship orientation entered the model. The mediating results are shown in Table III.

Table III. **Test for Mediation**

Path	Direct effect		Indirect effect		Result
	β	P Values	β	P Values	
EF→ EO → EP	0.54	0.001	0.22	0.001	Partial mediation

Note: EF = environmental factors; EP = entrepreneurship practices; EO = entrepreneurship orientation

The results also confirmed the influence of environment factors associated with the success of entrepreneurship practices. A similar study from Ayub and Othman (2013) has reported that an environment may consists of commitment, academic achievement, community support, quality of graduates, and administrative support.

Discussion

The aim of this study is to investigate the influence of environment factors and entrepreneurial orientation to entrepreneurial practices and to examine the existence of mediation effect of entrepreneurial orientation. The current findings found a positive significant influence of environment factors to entrepreneurial practices and a positive significant influence of entrepreneurial orientation to entrepreneurial practices. On the other hand, findings show a mediating effect of entrepreneurial orientation on the relationship between environment factors and entrepreneurial practices.

The results show that all the factor loading for environmental factors and entrepreneurship orientation and entrepreneurship practices show high factor loading, as a rule of thumb, 0.7 or higher factor loading represent that the factor extracts sufficient variance from the variable. Generally, the higher the better since the square of factor loading can be formulated to calculate construct reliability which is comparable to Cronbach alpha. Higher factor loading represents that the factor extracts sufficient variance from that variable. The loadings give us some indication, which of the underlying factors appear in which of the observed variables. In this case, it is found that high loadings of all variables on this factor. For the environmental factor, the high factor loading (0.79-0.86) can be interpret as external, organization and internal factors has extract sufficient variance from the variable (environment). As for the entrepreneurial orientation, innovative, risk taking and proactive have high factor loading (0.91-0.95) represents that the factor extracts sufficient variance from that variable. Same goes to the factors of the entrepreneurship practices which are about the project, material, economy and game also show high factor loading (0.78-0.89) and can be interpreted as sufficient variance from that variable. In recent study conducted by Pan (2019), the findings showed students more accept such interactive teaching method based on educational games and could improves student learning. In addition, teachers are aware of the importance of providing economic awareness in their teaching as they guided students to manage their own finances, discussed economic effect of different action, discussed current financial news and risk taking. In fact, discussion seem to be an easy technique to include economic related issues into their teaching (Ruskovaara & Pihkala, 2013). And lastly, teachers seem to practice project-based learning such as enable student to experience enterprise of their own, enable student to create marketing and material for a business. In terms of entrepreneurial and technical and vocational education, project-based learning enhanced opportunities for 'learning by doing' through action and experience and this type of learning have been argued to give advantages to students by many researchers (Ana

& Nurlaela, 2012; Duval-Couetil, Shartrand & Reed, 2016; Lubis et al., 2019). It can be concluded that such teaching practices is obviously superior to traditional methods.

The findings revealed that environmental factors contribute to entrepreneurship teaching practices. This clearly indicated that vocational teachers need the right support from the people around them specifically from external (such as government, policy maker, and accreditation agency), organization (such as college administration, leadership, and teaching aid) and internal influences (such as colleague, work culture, beliefs and values) to embed entrepreneurial in their teaching. This finding supports previous studies which found that teachers support and inspiration from school management, other school personnel and external partners are of crucial importance and indicating that a sense of 'togetherness' in a learning community can stimulated motivation to try out new teaching practices moreover, created willingness for professional growth Peltonen (2015). This finding shows that environment factors such as networking, collegial support and social interaction can help teachers to adopt a more entrepreneurial teaching approach.

Next, environmental factor also found to be a significant predictor of teachers' entrepreneurial orientation. This finding suggested that why people act and behave entrepreneurially is confronted with various influences from his environment. This present finding also parallel with several studies that suggested entrepreneurial orientation has been relatively well established as driven by environment. Such as the conceptual model from Kollman, Christofor and Kuckerts (2007), show that environmental factors which involves cultural environment, the political/legal environment, the macro and micro economic environment, influence the entrepreneurial orientation. Moreover, the finding from a qualitative study by Xaba and Malindi (2010) that observed how schools' environments affect entrepreneurial orientation. It was observed that schools demonstrate a notable degree of proactiveness, innovativeness and risk-taking by taking available opportunities to acquire resources and by strengthening their networking with community such as parental support, committed teaching staff, collaboration with other schools and companies. Thus, this result proves that there is a connection with regards to a person exploiting his environment resources to make a successful decision to become more entrepreneurial.

The third and last hypothesis explores the mediation effect of entrepreneurial orientation between environment factor and entrepreneurial teaching practices. The structural equation model path analysis results showed that environment factors could have a positive effect on teachers' entrepreneurial practices, either directly or through the mediation of entrepreneurial orientation. The scarce studies on the mediation effect of entrepreneurial orientation on a relationship between environment factor and entrepreneurial practices show the necessity for further research. A parallel finding may be referred with the meta-analytical findings from Rosenbusch, Rauch and Bausch (2013) that listed several studies on entrepreneurial orientation as the mediator between environmental (munificence, hostility, dynamism and complexity) and performance. Even though performance in their study reflected toward firm performance, the relationship between entrepreneurial orientation and performance behaviors has gained attention among researchers in the field of non-business (Xaba & Malindi, 2010; Rahim & Lajin, 2017; Bambhrolia & Phelan, 2017). According to Hashim et al. (2017), individual performance in an organization is based on a general belief in what employees are capable of contributing to their behavior. Thus, this concept can also be used in non-profit contexts, gaining researchers' attention in the field of entrepreneurship education and training (Morris, Webb & Franklin, 2011). Taken together, this finding suggest that, teachers adjust their entrepreneurial orientation to the environment factors and use it as a mechanism to transform the advantages provided by their environment into above-average level of entrepreneurship teaching practices.

Conclusion

Overall, the results of the study have provided valuable new insights regarding entrepreneurship teaching practices in entrepreneurial education context. In particular, this study reveals that there is a significant influence of environmental factors on entrepreneurship practices among vocational teachers. It has also determined that these influences can also be mediated significantly by entrepreneurship orientation. Vocational teachers who are innovative, proactive and risk taking achieved above-average level of practices in teaching entrepreneurship even though they teach vocational subject. The critical role of entrepreneurship characteristic and college

environment can play for improving their teaching practices. The research findings provide some insightful implication for the teaching of entrepreneurship. It offers interesting insights about factors that influence teachers' entrepreneurial teaching practices. To achieve greater impact on entrepreneurial teaching, entrepreneurial orientation teachers are required. They should demonstrate sufficient pro-activeness, innovativeness and risk-taking. It implies that vocational teacher should entrepreneurial inclined.

Furthermore, the knowledge of entrepreneurial orientation can give valuable indication to policy makers and also to head of educators in schools that wishing to stimulate entrepreneurial traits and behavior in their employees. As implication to policy, the government should ensure not only enriching teachers with entrepreneurial conducive environment but also equip with entrepreneurial orientation as it has a direct effect in explaining how to enhance entrepreneurial teaching practices. Thus, the study concludes with new directions for designing and managing teachers training programs.

The introduction of entrepreneurial education in vocational education and training is frequently associated with changes in teaching practices. Thus, it needs to be identified and dealt effectively. In this paper, the constituting elements of entrepreneurial practices in particular can be empirically proven by environment factors and entrepreneurial orientation. By focusing on entrepreneurial practices, the study has brought the attention of the relevance of institution related support and individual entrepreneurial orientation to vocational teachers in Malaysian context. As of study limitation, the study uses a single type of vocational institutional which is vocational college. Thus, the generalizability of this findings may not reflect to other TVET institutions such as polytechnics, community college and so on. Extending the research to other institutions or countries might be required to validate the findings presented.

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