

The Role of Environmental Factors, Entrepreneurship Experiences and Entrepreneurship Orientation on Entrepreneurship Teaching Practices

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Recent studies have shown the influence of environment, entrepreneurship experiences and entrepreneurship orientation on teaching entrepreneurship. However, there is scarce evidence about their relationship either to or among vocational college teachers. This study relates environmental factors, entrepreneurship experiences and entrepreneurship orientation to entrepreneurship practices. A cross-sectional survey involved 340 vocational college teachers in Malaysia through multi-stage cluster sampling. Data analysed occurred through descriptive and inferential analysis, while confirmatory factor analysis (CFA) determined the model's validity, reliability and fitness. CFA analysis showed the model achieved good fit using established fitness indices. The multiple linear regression analysis revealed some effect from environmental factors, entrepreneurship experiences and entrepreneurship orientation on entrepreneurship practices. The findings emphasise environmental factors, entrepreneurship experiences and entrepreneurship orientation, about teaching entrepreneurship practices among vocational teachers. They appear to have important implications for entrepreneurship teaching models, and can be recommended for future research, to improve entrepreneurship education in vocational colleges.

Key words: *entrepreneurship teaching model; TVET; vocational college teacher; environment factor; entrepreneurship experiences; entrepreneurship orientation; entrepreneurship practices.*



Introduction

Previous studies on entrepreneurship teaching practices covered the background, belief, readiness and attitudes of teachers. However, entrepreneurship teaching practices often become challenges, are highlighted as a key concern and debated in the literature. Questions remain as to how educators can teach and practice relevant aspects of entrepreneurship development specifically in technical and vocational fields. Since the introduction of the *School Enterprise* program in vocational colleges in Malaysia, concern has arisen as to the ability of teachers to practice entrepreneurship with different educational backgrounds, to achieve expected outcomes. Studies from Nurul Izzati, Soaib and Zaidatol (2012) and Nor Hayati, Zuraidah and Sufean (2017) report that teachers at vocational colleges do have sound knowledge in entrepreneurship, but are moderately equipped with skills needed to implement it in class. Entrepreneurship programs at vocational colleges seem less successful, due to their inability to produce the expected percentage of entrepreneurs among students.

Global research by the European Commission (2009) involving 26 countries identified several constraints in the implementation of entrepreneurship programs in vocational education system, including: teachers' lack of knowledge of entrepreneurship, a missing link between entrepreneurship and vocational subjects, no involvement from business people in teaching and learning, lack of practical elements, and no clear career path. In order to extend understanding of entrepreneurship education, this article investigates the roles of environmental factors, entrepreneurship experiences, and entrepreneurship orientation, on entrepreneurship teaching practices among vocational college teachers. It aims to provide useful insights to help educators understand how some variables could impact their daily teaching activities.

Conceptual Framework

As previous studies have reported, there are still ineffective practices among vocational teachers who teach entrepreneurship. Regardless of the field of vocation, the most suggested way to teach entrepreneurship is to use real world projects and activities. "Learning by doing" is still favoured by most researchers. It emphasises real experience and problem-based learning, and fosters entrepreneurship mindsets and skills. The most common method used to teach entrepreneurship are lectures, project work, business games, student companies, company visits, work placements and simulations using technology (European Commission 2009). Although there is no consensus on the most effective way to teach entrepreneurship, Ruskovara & Pihkala (2013) suggested four sub-constructs in practising entrepreneurship in the classroom: project, material, economy and game-based learning.

Earlier literature highlighted several variables that could significantly impact entrepreneurship teaching practices; namely environment, experiences in entrepreneurship, and entrepreneurship orientation. A study from Ayub and Norasmah (2012) stated that an effective environment of entrepreneurship in education may consist of community support, administrative support, academic achievement, and attention to the quality of graduates. As concluded by Wan Na (2013), the organisational environment as a whole relates positively to the job performance of vocational college teachers. Thus, as predicted by this study, teachers who can test their ideas in a supportive educational setting will feel more confident in their daily teaching. In this study, the environment consists of internal, organisational and external influences.

A lack of competence among Technical and Vocational Education and Training or “TVET” teachers derived from their practical experience of entrepreneurship. In learning entrepreneurship, most researchers argue that experience is one of the critical components (Spanjer & Witteloostuijn 2017; Krakauer et al. 2017; Scott et al. 2016). Politis and Gabriellson (2005) argue that only three types of experience, namely business start-up, management and industry-specific experiences, can influence entrepreneurship knowledge. Many countries provide some entrepreneurial training to teachers, but few offer a systematic approach that can easily followed (European Commission 2009; Ambrose, Etim & Enagu 2016). Therefore teachers need to be provided with a variety of learning experiences as to implementing entrepreneurship.

Furthermore, researchers in entrepreneurship education and training have related entrepreneurship orientation to performance behaviour (Xaba & Malindi 2010; Andrade & Fiamenghi 2018). Nowadays, teachers are not only responsible for teaching but also need to act as entrepreneurs, in responding to stakeholders such as parents, industry, society and government (Naeem & Muhammad Tayyeb 2011; Aregbeyen & Fasanyan 2017). Thus, study of entrepreneurship orientation is important for institutional, decision-making and curricular development. A meta-analysis by Rausch et al. (2009) reported that three sub-constructs of entrepreneurship orientation are widely used: innovation, risk-taking and proactivity. In this study, teachers who are seen as innovative, risk-taking, and proactive are motivated to teach entrepreneurship more effectively. Therefore, the two objectives of the study are: i) to investigate if there are significant relationships between environmental factors, experiences of entrepreneurship, individual orientation to entrepreneurship, and entrepreneurial teaching practices among vocational college teachers, and ii) to determine the predictor of entrepreneurial teaching practices among environment factors, entrepreneurship experiences and entrepreneurship orientation.

Methodology

This study employed a cross-sectional survey involving 340 vocational college teachers in Malaysia. The samples of the study were selected randomly through multi-stage cluster sampling techniques (Ghazali & Sufean 2016; Anyanwu, et al 2016). At the first stage, six states were selected namely Pahang, Perak, Selangor, Kedah, Negeri Sembilan, and Sabah. In the second stage, two vocational colleges were randomly selected from every state selected in the first stage. Hair et al. (2014) suggested a sample size of more than 200 respondents, if using factor analysis. Creswell (2012) opined that, for survey purposes, the minimum required sample size is 100 respondents. Thus, this study achieved the minimal sample size.

The instrument used in this study has been through validity and reliability processes. A content validity index (CVI) was calculated among 12 experts, to confirm the suitability of all studied items. The CVI scores for environmental factors (.788), entrepreneurship experiences (.805), entrepreneurship orientation (.674), and entrepreneurship practices (.713) are all above the cut-off value (.56) as specified by Lawshe (1975) and recently used in Mohd Effendi (2017). As to the reliability of the instrument used, the Cronbach alpha values for environmental factors, entrepreneurship experiences, entrepreneurship orientation, and entrepreneurship practices are .940, .890, .960, and .941 respectively. Based on Bond and Fox (2007) reliability measures, these items show a high level of consistency.

The final version of the instrument contained 70 items. To measure environmental factors, there are 18 items. This section uses a five point influential scale, ranging from not very strong to very strong. The entrepreneurship experiences section contain 12 items. This section uses a five point agreement scale, from strongly disagree to strongly agree. The entrepreneurship orientation section also contains 18 items. This section uses a five point agreement scale from strongly disagree to strongly agree. Lastly, for entrepreneurship practices, there are 22 items. This section uses a five point agreement scale from strongly disagree to strongly agree. Details of the instrument are shown in Table 1.

Table 1: Details of Instrument

Variable/Construct	Sub-construct	Item
Environmental Factors	External influences	6
	Organisational influences	7
	Internal influences	5
Entrepreneurship Experiences	Startup business experiences	4
	Management experiences	3
	Industrial experiences	5
Entrepreneurship Orientation	Innovative	6
	Risk taking	6
	Proactive	6
Entrepreneurship Practices	Project	6
	Material	7
	Economy	4
	Game based learning	5

Data exploration analysis was performed to identify problematic data such as outliers, non-normal distribution, error and missing data. Descriptive and inferential analysis using SPSS and SEM-AMOS software was applied to the remaining data. Newsom (2012) suggested reporting fit index values, in three categories: absolute fit indices, relative fit indices and noncentrality-based indices. For absolute fit indices, the standardised root mean square residual (SRMR < .08 shows good fit) and relative chi-square (CMIN/DF < 5.0 shows good fit) were reported. For relative fit indices, Tucker-Lewis index (TLI > .90 shows good fit) and Bollen's incremental fit index (IFI > .90 shows good fit) were reported. And for noncentrality-based indices, root mean square error of approximation (RMSEA < .80 accepted as good fit) and Bentler's comparative fit index (CFI > .95 shows good fit) were reported. Though a previous researcher proposed numerous fit indices, Zainuddin (2015) suggests at least one fit index for each category.

Findings and Discussion

For reliability and validity, this study estimated four-factor CFA in a measurement model using SEM-AMOS software. Confirmatory factor analysis revealed that all factor loadings are positive, and greater than .746 with no offending estimate value. Figure 1 shows a four-factor model fits the data with SRMR = .043, CMIN/df = 2.770, TLI = .960, IFI = .970, RMSEA = .072, and CFI = .970.

Figure 1. CFA in Measurement Model

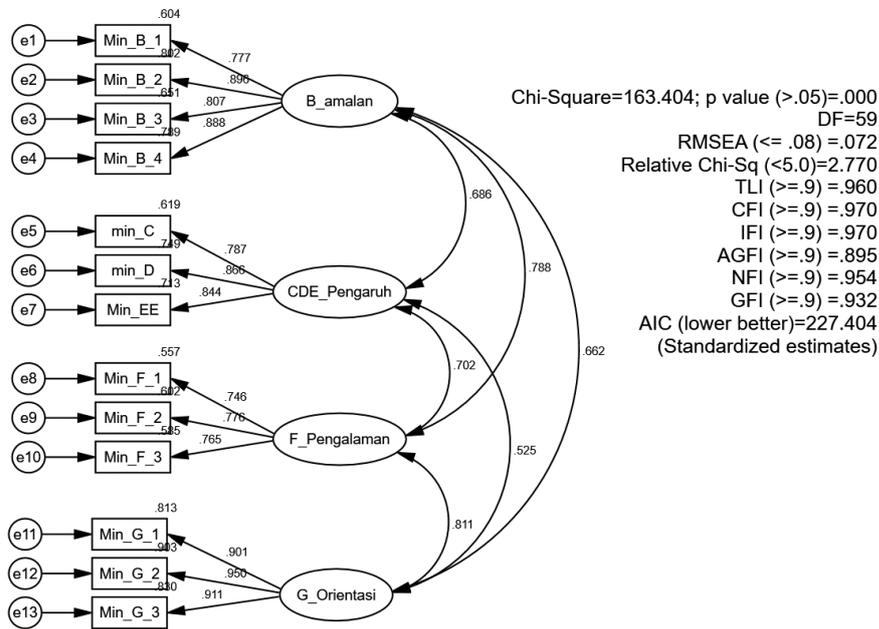


Table 2 shows construct reliability, average variance extracted (on the diagonal) and correlation coefficient (on the off-diagonal) for the study instrument. The calculated average variance extracted for all constructs shows a value above .50. These values exhibit sufficient convergent validity. A value of construct reliability above .70 shows a good indicator of the item instrument. Thus, as to the first objective of the study, the results show relationships among environment factors and entrepreneurship practices, $r = .686$, $p = .000$, entrepreneurship experiences and entrepreneurship practices, $r = .788$, $p = .000$, and lastly entrepreneurship orientation and entrepreneurship practices, $r = .662$, $p = .000$.

Table 2: CR, AVE and r Value for Study Instrument

	CR	EP	EF	EE	EO
Entrepreneurship Practices (EP)	.908	.712	-	-	-
Environment Factor (EF)	.872	.686	.694	-	-
Entrepreneurship Experiences (EE)	.806	.788	.702	.581	-
Entrepreneurship Orientation (EO)	.944	.662	.525	.811	.848

A multiple regression was run to determine the predictor of entrepreneurship practices from environment factors, entrepreneurship experiences, and the entrepreneurship orientation. These independent variables, with statistical significance, predicted entrepreneurship practices, $F(3, 336) = 149.62$, $p < .0005$, $R^2 = .572$. All three variables added statistical significance to the prediction, $p < .05$.

Table 3 provides the R, R², adjusted R² and the standard error of the estimate which can be used to determine how well a regression model fits the data. It can be seen that the independent variables (environment factors, entrepreneurship experiences, entrepreneurship orientation) explain 57.2% of the variability of the dependent variable, entrepreneurship practices.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756	.572	.568	.401

Table 4 shows the summary of analysis of variance or “ANOVA” analysis, independent variable (environment factors, entrepreneurship experiences, entrepreneurship orientation) predicted the dependent variable, entrepreneurship practices, with statistical significance. This shows the regression model is a good fit for the data.

Table 4: Summary ANOVA Table

Source	SS	df	MS	F
Regression	72.03	3	24.01	149.62
Error (residual)	53.92	336	.16	
Total	125.94	339		

The general form of the equation, for predicting entrepreneurship practices from environmental factors, entrepreneurship experience and entrepreneurship orientation is as follows:

$$\text{predicted Entrepreneurship Practices} = .249 + .382 (\text{environment factor}) + .334 (\text{entrepreneurship experiences}) + .196 (\text{entrepreneurship orientation})$$

Unstandardised coefficients indicate how much the dependent variable varies with an independent variable, when all other independent variables are held constant. This means that for each one unit of environment factor increase, there is an increase in entrepreneurship practices by .382 unit and so on.

In order to increase entrepreneurship practices among vocational college teachers, several actions can be recommended based on this study. The results indicate that entrepreneurship is highly increased by environmental factors. So, in the context of vocational colleges in Malaysia, internal, organisational and external influences play an important role in supporting teachers in teaching entrepreneurship.

Other important results of this study include that entrepreneurship experiences increase teachers' entrepreneurship practices. Besides theoretical learning, the social learning process is important (Schwarz 2009; Anyi, 2017). In this respect, inviting successful entrepreneurs into learning processes, or enabling small business experiences via interaction with local entrepreneurs, can be viewed as supportive actions. Higher organisation also can support teachers to actively participate in innovation, competition, and in awakening their enthusiasm and interest in business for educational purposes. Last but not least, a positive orientation towards entrepreneurship increases teachers' willingness to teach entrepreneurship. Teachers who are innovative, risk-taking and proactive in educational systems are necessary, as these factors can be a driving force to increase productivity in teaching entrepreneurship.

Conclusion

This study has proved that environmental factors, as well as entrepreneurship experiences and entrepreneurship orientation, are relevant to teaching entrepreneurship. Consequently, its model also proved to be a good fit for those factors. All other paths regarding entrepreneurship practices are significant. Thus, these results are in line with past research on entrepreneurship teaching and learning in other cultural and geographical contexts.

This study also proved that there is no one formula for practising entrepreneurship. Instead, it requires great efforts from various individuals and organisations, to achieve transformation and to improve entrepreneurship teaching practices in vocational colleges. Lastly, vocational colleges' implementation of entrepreneurship education should keep up with current practice, to contribute to Malaysia's economic development.

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