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Extending the Shapero's Model: Entrepreneurial Education Can Predict Entrepreneurial Intention of Vocational School Students?

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Abstract: Since 2013, an entrepreneurial education has been implemented at high schools nationally in Indonesia. Particularly at vocational schools, students obtain this subject for 6 semesters. Scholars have gleaned this area with various combination of predictor variables. However, there is a paucity of study mixing the Shapero Model with entrepreneurial education. This exploratory study aims to test the impact of entrepreneurial education along with Shapero Model on student's entrepreneurial intention. The Shapero's Model of entrepreneurial event consists of variables: perceived desirability, propensity to act and perceived feasibility. Data was collected in 3 vocational schools in Jakarta. In total, 208 students were participated. Data was analysed using exploratory and confirmatory factor analyses. As a result, at the first attempt, all predictor variables failed to predict entrepreneurial intention. However, at the second attempt when perceived desirability, propensity to act and perceived feasibility were treated as moderators, entrepreneurial education significantly influenced two of the three predictors but still Shapero's Model was insignificant to influence intention. The findings of this study suggest an agenda regarding a modification of entrepreneurial curriculum.

Key words: Shapero Model, entrepreneurial education, vocational school students, confirmatory factor analysis, exploratory, act

INTRODUCTION

The National Education of the Republic of Indonesia modified the curriculum of vocational schools by adding an entrepreneurial education to be applied in every semester for 3 years (Sulistyoningrum, 2015). By this long duration, students are expected to have other options instead of just being employed: an entrepreneur. By far, there is no evaluation on this policy, locally or nationally.

Prior studies reported that indeed, entrepreneurial education has a contribution on a person's entrepreneurial intention (Kurniawan, 2015; Lorz, 2011; Maresch *et al*., 2016; Wibowo, 2011). However, predominant studies focussed on behavioural intention of higher institution students (Babatunde and Durowaiye, 2014; Dogan, 2015; Ibrahim and Bakar, 2015; Maresch *et al*., 2016; Samuel *et al*., 2013) whereas vocational students have less attention (Wibowo, 2011).

Several approaches have been employed to measure entrepreneurial intention, including expectancy theory Hsu *et al*. (2014) and Shapero's Model, Al-Haj *et al*. (2011), Krueger (1993), Ngugi *et al*. (2012) and Shapero (1982). This study aims to extend and test the Shapero's Model by adding entrepreneurial education to predict intention of vocational students to be an entrepreneur. The researchers found that there is a paucity of study in the field of entrepreneurship applying the Shapero's Model to predict vocational student's entrepreneurial intention.

Literature review

Shapero's Model: Shapero (1982) established a theory of entrepreneurial event consisting three important variables perceived desirability, propensity to act and perceived feasibility that can predict entrepreneurial intention. The Model, later is well-known as Shapero's Model has been examined by many scholars since then.

Taking place in Kenya, Ngugi *et al*. (2012) tested Shapero's Model among university students. They found that perceived desirability, propensity to act and perceived feasibility had a significant impact on entrepreneurial intention.

Applying the Model tested by Krueger (1993) and Al-Haj *et al*. (2011) investigated the intention of college communities members in Malaysia. These scholars reported that perceived desirability and propensity of proactive behaviour significantly affected entrepreneurial intention. On the other hand, perceived feasibility failed to predict entrepreneurial intention.

Not all scholars who tested Shapero's Model applied all variables as suggested by Shapero (1982). Some scholars just dropped propensity to act and

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addedone or more other variables instead such as credibility (Dissanayake, 2013) entrepreneurial experience (Sajjad *et al*., 2012; Yatribi, 2016) family business background, perception of family business experience, difficult childhood and frequent allocation (Drennan *et al*., 2005) self-efficacy (Byabashaija and Katono, 2011) and perceived social norms (Weerakoon and Gunatissa, 2014). Based on the results as indicated by these studies, perception of desirability and feasibility had a significant impact on entrepreneurial intention.

Some other studies excluded propensity to act without adding other variable. Garba *et al*. (2014) found that perceived desirability had a significant influence on entrepreneurial intention whereas, perceived feasibility had no influence on entrepreneurial intention. A study undertaken by Guerrero *et al*. (2008) demonstrated that perception of desirability is significant to influence entrepreneurial intention but perception of feasibility is insignificant.

Entrepreneurial education on intention: Entrepreneurial education has different types, ranging from education for illiterate to real entrepreneurs. Linan (2004) identified 4 categories of entrepreneurship education: entrepreneurial awareness education, education for start-up, education for entrepreneurial dynamism and continuing education for entrepreneurs. These categories seem to be stage of readiness of a person to be an entrepreneur. Entrepreneurial education in vocational schools could be the representation of the first category.

Some studies reported that entrepreneurial education significantly influences intention. An experimental study has been conducted by Lorz (2011) to examine university student's entrepreneurial intention. He discussed theory of planned behavioural as the foundation theory. In this study, entrepreneurial education is used as moderating variable. As a result, entrepreneurial education significantly impacted one's entrepreneurial intention. He suggested practitioners not just to design a good entrepreneurial education but also do develop a good environment to trigger the behavioural intention. Another study that employed theory of planned behaviour was done by Maresch *et al*. (2016). They compared the impact of entrepreneurial education on entrepreneurial intention between business students and science and engineering students in Austria. In this study, entrepreneurial education was treated as a moderating variable. These scholars documented that entrepreneurial education had a significant impact on entrepreneurial intention.

Taking place in Nigeria, Babatunde and Durowaiye (2014) tested the impact of entrepreneurial education on self-employed intention among university students. They found that although, this path was significant, "respondents exhibited fear of capital, failure and other challenges in achieving their goal of becoming entrepreneur" (Babatunde and Durowaiye, 2014). Some other resources also claimed that there was a significant impact of entrepreneurial education on entrepreneurial intention (Kurniawan, 2015; Wibowo, 2011).

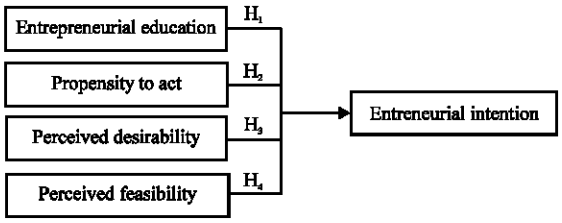

Fig. 1: Theoretical framework of study

Theoretical framework and hypotheses: Based on the literature review above, the theoretical framework is established as illustrated in Fig. 1. Figure 1 predictors variables are entrepreneurial education, propensity to act, perceived desirability and perceived feasibility. These variables are used to predict entrepreneurial intention of vocational school students. Figure 1 also shows 4 hypothesis to be tested as follows:

- H_1: entrepreneurial education will significantly influence entrepreneurial intention
- H_2: propensity to act will significantly influence entrepreneurial intention
- H_3: perceived desirability will significantly influence entrepreneurial intention
- H_4: perceived feasibility will significantly influence entrepreneurial intention

MATERIALS AND METHODS

Respondents were approached conveniently in 3 vocational schools in Jakarta within February and June 2016. This study attracted 208 respondents with males of 56 (26.9%) and females of 152 (73.1%). Regarding their ages, seven of them were 20 years old, 41 of them were 19 years old, 116 of them were 18 years old and 4 of them were 17 years old. In addition, three respondents were in the 10th year of school, 47 of them were in the 11th year and 158 of them were in the 12th year.

Out of 91 respondents (43%) claimed that their parent is entrepreneur. The types of business of their parents were running include services (34) production (14) livestock (3) agriculture and others (40). Fifth-six respondents whose parent were running a business

mentioned that they involve and help their parent. Furthermore, 48 respondents in this category said that they have an intention to continue their parent business.

Instrument for this study was developed using indicators taken from prior studies. To measure entrepreneurial intention, indicators from Robledo *et al.* (2015) were adapted; indicators from Lepoutre *et al.* (2010), Ali *et al.* (2012), Lucas and Cooper (2012) were for perceived feasibility; indicators from were from Lepoutre *et al.* (2010), Lucas and Cooper (2012) for perceived desirability; from Lepoutre *et al.* (2010) were for propensity to act and from Denanyoh *et al.* (2015) and Opoku-Antwi *et al.* (2012) were for entrepreneurial education.

Data was analysed in three stages: Firstly, exploratory factor analysis. Using SPSS Version 22, the researchers calculated data for seeking dimensions and retaining indicators. As mentioned earlier, the number of participants of this study was 208. Therefore, as suggested by Hair (2006), the researchers must select dimensions with factor loadings of 0.4 or greater. Secondly, a reliability test. According to Hair (2006) only dimensions or factors with a score of 0.7 and greater that are recommended to be included in further analysis. Thirdly, co-confirmatory factor analysis. This analysis is addressed to measure the proposed research framework. A fitted framework is considered if it has a probability of 0.05 (Schermelleh-Engel *et al.*, 2003) CMIN/DF of ≤2 (Tabachnick and Fidell, 2007) CFI of≥0.97 (Hu and Bentler, 1995) and RMSEA of ≤0.05 (Hu and Bentler, 1999).

RESULTS AND DISCUSSION

Perceived feasibility: Based on the exploratory factor analysis, perceived feasibility owns two dimensions with Cronbach's alpha scores of 0.860 and 0.358, respectively. One of these two dimensions is less reliability with a score of 0.358 (Hair, 2006). However, the researchers decided to include all of these dimensions for further analysis (Table 1).

Propensity to act: Two dimensions of propensity to act are resulted with Cronbach's alpha scores of 0.793 and 0.586, respectively. These scores reflect a sufficient reliability to be included for future analysis (Hair, 2006) (Table 2).

Perceived desirability: Three dimensions of perceived desirability are formed with Cronbach's alpha scores of 0.779, 0.625 and 0.692, respectively. All these dimensions are considered reliable (Hair, 2006) (Table 3).

Table 1: Exploratory factor analysis of perceived feasibility

Variables	Values
α = 0.860	
F1: I am qualified to be an entrepreneur by having entrepreneurial skills	0.907
F2: I am qualified to be an entrepreneur by having entrepreneurial knowledge	0.903
F3: I am ready to start your own business	0.837
α = 0.358	
F5: I think it would be very cool to start my own business	0.798
F6: If I would start my own business, I would be constantly afraid to lose all my money	0.600
F4: My personality traits qualify me as an entrepreneur	0.567

Table 2: Exploratory factor analysis of propensity to act

Variables	Values
α = 0.793	
P2: I would rather someone else take over the leadership role when I'm involved in a group project	0.863
P3: I like to get a good idea of what a job is all about before I begin	0.862
P1: I'd rather make my own mistakes than listen to someone else's orders	0.807
α = -0.586	
P6: I'd rather not have too much responsibility	0.839
P5: I like to wait and see if someone else is going to solve a problem so that I don't have to be bothered with it	0.805
P4: Others usually know what is best for me	-0.723

Table 3: Exploratory factor analysis result of perceived desirability

Variables	Values
α = 0.779	
D5: If I would start my own business, I would definitely be overworked	0.760
D12: If I would start my own business, I would retire early on an attractive pension	0.725
D6: If I would start my own business, I could be self-employed with no full time employees	0.710
D4: It looks very hard to me to start my own business	0.651
D10: If I would start my own business, I would work part-time	0.641
α = 0.625	
D11: I would be employed in a large established company	0.712
D9: I would be a part owner and member of a management team in a small new company	0.697
D8: I would hold a full ownership of a small and stable business that employs others	0.687
D7: I would be on a small company management team-working to grow and then sell the business	0.541
α = 0.692	
D1: I feel sure enough of myself to start my own business at some point in the future	0.833
D2: If I would start my own business, it would certainly be a success	0.816

Entrepreneurial education: As presented, Table 4, entrepreneurial education has two dimensions with Cronbach's alpha of 0.794 and 0.793. These two dimensions also are considered reliable (Hair, 2006).

Entrepreneurial intention: Entrepreneurial intention has two dimensions with Cronbach's alpha scores of 0.770 and 0.487, respectively. The second dimension is considered unreliable as has a its score <0.60 (Hair, 2006). For a hypothesis testing purpose, all dimensions of this variable will be tested in confirmatory factor analysis (Table 5).

Table 4: Exploratory factor analysis of entrepreneurial education

Teaching	Values
α = 0.794	
E5: My school teaches me entrepreneurship	0.784
E8: I think that entrepreneurial education encourages me to be an entrepreneur	0.769
E6: My school teacher student about starting a business	0.762
E7: Entrepreneurship can be developed through education	0.750
α = 0.793	
E1: The education at vocational school encourages me to develop creative ideas for being an entrepreneur	0.870
E4: My school develops my entrepreneurial abilities	0.773
E3: My school develops my entrepreneurial skills	0.702
E2: At school I learn important study about entrepreneurship	0.646

Table 5: Exploratory factor analysis of entrepreneurial intention

Teaching	Values
α = 0.770	
My professional goal is to become an entrepreneur	0.906
I would make every effort to start and run my own firm	0.831
I am ready to do anything to be an entrepreneur	0.770
α = 0.487	
I am determined to create a firm in the future	0.822
I have very seriously thought of starting a firm	0.816

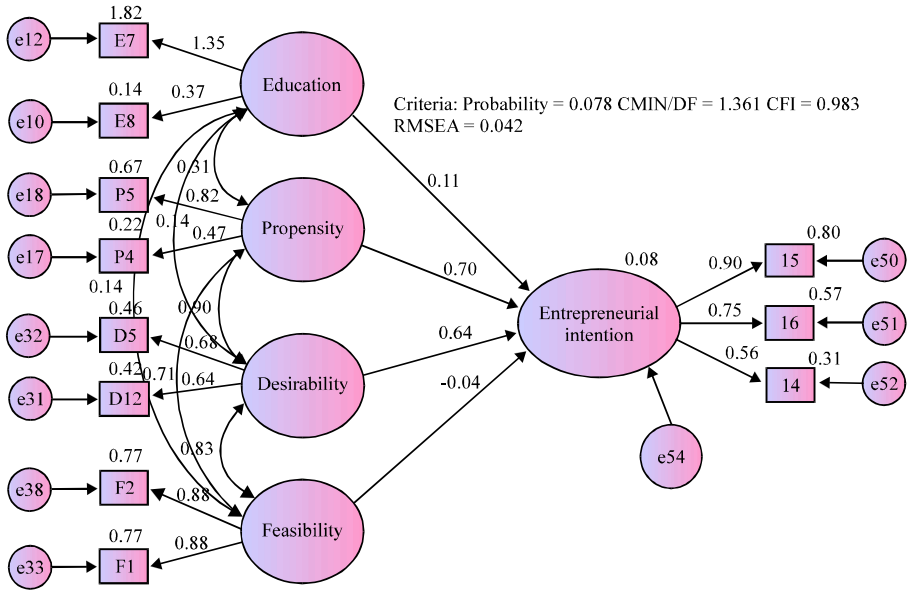

Fig. 2: Result of confirmatory factor analysis of the proposed model

The proposed research model testing: Figure 2 demonstrates a fitted model of the theoretical framework produced by confirmatory factor analysis (structural equation modelling). This model has probability, CMIN/DF, CFI and RMSEA scores of 0.078, 1.361, 0.983 and 0.042, respectively. These score are significant with the scores required for obtaining a fitted model by Schermelleh-Engel *et al.* (2003), Tabachnick and Fidell (2007) and Hu and Bentler (1995, 1999), respectively. The 2 indicators survive on each predictor variable and 3 indicators retains on the predicted variable (entrepreneurial intention).

Alternative model: An alternative model is constructed to understand more the role of entrepreneurial education and the Shapero's Model in predicting entrepreneurial intention. Below is the result. In this model, education is linked directly to propensity, desirability and feasibility. On the one hand, there is no direct link between education and intention. This alternative model achieved a fitness with probability score of 0.100, CMIN/DF of 1.301, FI of 0.985 and RMSEA of 0.038. To obtained the fitness, only one indicator of entrepreneurial education retains (Fig. 3).

Below is the summary of the hypothesis testing, showing that all hypotheses are rejected for a poor significance of each path. These finding surely against prior studies that demonstrated that Shapero's Model (Ngugi *et al.*, 2012) or at least perceived feasibility and perceived desirability (Byabashaija and Katono, 2011;

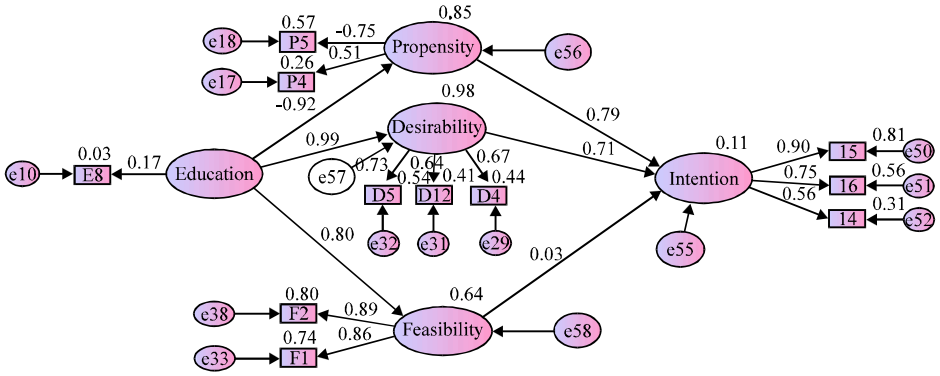

Fig. 3: Confirmatory factor analysis result of the alternative model

Table 6: Summary of hypothesis testing

Variables	CR	p-values	Results
H_1: entrepreneurial education→entrepreneurial intention	0.601	0.548	Rejected
H_2: propensity to act→entrepreneurial intention	0.817	0.414	Rejected
H_3: perceived desirability→entrepreneurial intention	0.600	0.548	Rejected
H_4: perceived feasibility→entrepreneurial intention	-0.122	0.903	Rejected

Table 7: Summary of CR values of the alternative model

Variables	CR	p-values	Results
Entrepreneurial education→propensity to act	-2.099	0.036	Rejected
Entrepreneurial education→perceived desirability	2.166	0.030	Accepted
Entrepreneurial education→perceived feasibility	2.167	0.030	Accepted
Perceived feasibility→entrepreneurial intention	0.156	0.876	Rejected
Perceived desirability→entrepreneurial intention	0.908	0.364	Rejected
Propensity to act→entrepreneurial intention	1.045	0.296	Rejected

Dissanayake, 2013; Drennan *et al*., 2005; Sajjad *et al*., 2012; Weerakoon and Gunatissa, 2014) and also entrepreneurial education had a significant impact on entrepreneurial intention (Babatunde and Durowaiye, 2014; Maresch *et al*., 2016). Perceived feasibility is insignificant to influence entrepreneurial intention. This finding supports the finding as reported by Al-Haj *et al*. (2011), Garba *et al*. (2014) and Guerrero *et al*. (2008).

Table 6 shows a summary of Critical Ratio (CR) values from the alternative model testing. This alternative model demonstrates the significant impact of entrepreneurial education on perceived desirability and perceived feasibility whereas other paths are insignificant (Table 7).

CONCLUSION

This study aims to predict entrepreneurial intention of vocational school students by using the Shapero's Model and adding with entrepreneurial intention variable. In the first attempt, all variables tested were directly linked to entrepreneurial intention. Unfortunately, all paths are insignificant. These findings give a signal that the Shapero's Model cannot be used in the case of vocational school student's entrepreneurial education in Jakarta.

Furthermore, in the second attempt when entrepreneurial education was placed as an independent variable to influence propensity to act, desirability and feasibility, at least two paths are accepted: the paths between entrepreneurial education and perceived desirability and between entrepreneurial education and perceived feasibility. Additionally, propensity to act, desirability and feasibility insignificantly influenced entrepreneurial intention. Therefore, it is confirmed that the Shapero's Model does not work to predict entrepreneurial intention of vocational school students.

The findings from the alternative model offer innovations that are lack of study explored on these two paths: the significant impact of entrepreneurial education on perceived feasibility and perceived desirability.

It is arguable in using a rigid theory but the results showing insignificant. However, the researchers admit them as one of the limitations of this study. There are always possibilities to be suspected contributing to the

findings: the quality of the instrument and the respondents selected. All the indicators used are adapted from prior studies which are in English. The researchers translated and adapted them. In addition, respondents were chosen conveniently in classes. There might be a situation that they were inconvenient to fill out the instrument.

Although, student teachers are expected to start up their own venture, it is too early to expect them to start to. A lot of things to be considered. Firstly, evaluating the curriculum. Secondly, evaluating the teachers.Thirdly, evaluating the school environment. Teaching entrepreneurship should not be the same with teaching other subjects in vocational school. Furthermore, considering the findings of this study, it might be good for future studies to apply the instrument and the research framework by including vocational school students in other regions.

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