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Entrepreneurial Intention of Secondary and Tertiary Students: are They Different?

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ABSTRACT

This study aims to measure the impact of attitude towards entrepreneurship (ATE) and entrepreneurship education (EE) of secondary and tertiary students on entrepreneurial intention (EI). The study is also addressed to compare EI of male and female students. Data was collected using an online instrument and it attracted 358 secondary students (35.7%) and 646 tertiary students (64.3%). All students had been exposed by entrepreneurship education. Data was analysed using exploratory and confirmatory factor analyses as well as structural equation model and group analysis. In total, there were five models to be tested. The first model links education to attitude and intention, and attitude is linked to intention. In the first model, all participants were tested. The second and third models tested secondary and tertiary students respectively whereas the fourth and fifth models tested male and female students respectively. This study shows that EE significantly affected ATE in all models, entrepreneurship education significantly EI on secondary and female students, and ATE significantly affected EI on secondary and tertiary students as well as female students. Recommendations for future study and entrepreneurship educations are discussed.

Keywords: Entrepreneurship education, attitude towards entrepreneurship, entrepreneurial intention, group analysis, structural equation model

1. INTRODUCTION

By 2016, Indonesia is an emergency of entrepreneurs in amount comparing to other ASEAN countries. Of the total population, numbers of entrepreneurs in Singapore, Malaysia, Thailand, and Vietnam were 7%, 5%, 4.5%, and 3.3% respectively whereas in Indonesia it was only 1.67% (Zuraya, 2016). According to McClelland (1967), ideally the percentage should be 2% to give a good impact to society. A year later,

the percentage seemed to increase to 3.10 (Wicaksono, 2017). There were some attempts conducted by government, private sectors, and even educational institutions to encourage people particularly the younger ones to be an entrepreneur. One of the attempts was inserting an entrepreneurship education (EE) within a curriculum both in secondary and tertiary education systems.

This study aims to investigate the impact of ATE and EE on EI and the impact of EE on ATE. EE has been reported to have an important key to affect ATE (Fayolle & Gailly, 2015). EE also can improve one's EI (Ilyas, Zahid, & Rafiq, 2015; Rodrigues, Dinis, do Paço, Ferreira, & Raposo, 2012). This current study examines four models. The first model includes ATE and entrepreneurship education to predict EI of secondary and tertiary students. The second and third models use the same predictors predicting secondary and tertiary students respectively. In addition, the fourth and fifth models predicts male and female students respectively. The authors found a paucity of study comparing secondary and tertiary students. The findings of this study are expected to fill the gap.

2. LITERATURE REVIEW

2.1. Theoretical background

2.1.1. ATE and entrepreneurial intention

Attitude is an important variable to predict behavioural intention that has been employed in behavioural theories including the theory of reasoned action, the theory of planned behaviour, and technology acceptance model (Ajzen, 1991; Ajzen & Fishbein, 1980; Davis, 1989). In this current study, attitude is used to predict entrepreneurial intention.

Applying theory of planned behaviour, Zapkau, Schwens, Steinmetz, and Kabst (2015) examined EI of students and professionals in Germany. They found that ATE as one of the predictor variables included in the theory, had a significant impact on EI both in the case of students and professional. Further, Schwarz, Wdowiak, Almer-Jarz, and Breitenacker (2009) studied EI of university students in Austria. Four of the independent variables they employed were attitude towards change, attitude towards money, competitiveness, and attitude towards entrepreneurship. Another study was conducted by Wu and Wu (2008) in surveying EI of students at a university in Shanghai. They linked EE to ATE and linked ATE to EI. Using structural equation model, they found that ATE had a significant impact on EI. in contrast, EE was insignificant to influence ATE.

Rauch and Hulsink (2015) hypothesised that EE had a significant impact of ATE and EI of post-grad students at a university. They found that these two hypotheses were accepted and in line with theories. Other researchers, for example, Kautonen, Van Gelderen, and Tornikoski (2013), Kautonen, Gelderen, and Fink (2015), Heuer and Kolvereid (2014), and Lortie and Castogiovanni (2015), included ATE in their studies and demonstrated that attitude had a significant impact on EI.

Based on the articles discussed above, here is the hypothesis:

H₁: ATE will have a significant and positive impact on EI.

2.1.2. Entrepreneurship education, attitude towards entrepreneurship, and entrepreneurial intention

Involving experts as participants for their study, Vesper and Gartner (1997, p. 412) ranked 18 importance criteria of an entrepreneurship program. The criteria include:

Courses offered, faculty publications, impact on community, exploits of alumni, innovations, alumni start-ups, outreach to scholars, competitions and awards won, years of activity, size of MBA program, halo of school or university, magnitude of resources, alumni comments years later, size of undergrad program, incoming student qualities, size of doctoral program, faculty start-ups, and location.

EE has been used by prior studies as predictor of ATE, subjective norm, perceived behavioural control, entrepreneurship perception, and EI (Dehghanpour Farashah, 2013; Fayolle & Gailly, 2015; Karimi, Biemans, Lans, Chizari, & Mulder, 2014; Zhang, Duysters, & Cloudt, 2014). In this study, entrepreneurship education is linked to ATE and EI.

Sánchez (2013) conducted a study that compared entrepreneurial competency and intention of secondary students. By conducting an experiment towards two groups of samples – a group was exposed by entrepreneurship education and another group was not, this scholar found that there was a significant impact of EE on entrepreneurial competency and EI on the group with entrepreneurship education. Further, Wu and Wu (2008) surveyed EI of students at a university in Shanghai. They linked EE to ATE and linked ATE to EI. Using structural equation model, they found that ATE had a significant impact on EI. In contrast, EE was insignificant to influence ATE.

Taking place in Pakistan, Veciana, Aponte, and Urbano (2005) investigated EI of university students. A research model was tested consisting of EE as an independent variable and ATE and perceived behavioural control as mediating variable. They reported that EE had a significant effect on ATE and perceived behavioural control. Further, Hattab (2014) studied in Egypt predicting university students' EI. In that study, this scholar showed that entrepreneurship education significantly affected EI. Further, Maresch, Harms, Kailer, and Wimmer-Wurm (2016) used EE as a moderating variable in predicting EI of Austrian university students. They documented that EE significantly affected EI.

In addition, Fayolle and Gailly (2015) studied EI of students who took a EE program and tested immediately after the program finished and later after six months the program over. They found that EE had a significant impact on ATE in the immediate period after the program finished but an insignificant impact on EI.

Accordingly, the authors hypothesise that:

H₂: Entrepreneurship education will have a significant impact on attitude towards entrepreneurship.

H₃: Entrepreneurship education will have a significant impact on EI.

2.1.3. Level of education and entrepreneurial intention

In general, level of education consists of elementary, secondary (high school), and tertiary (university). Prior studies have included level of education as a predictor of EI, direct or indirect and as a moderator. For example, Ilyas et al. (2015) compared EI of entrepreneurs and non-entrepreneurs. Some other scholars (Lepoutre, Tilleuil, & Crijs, 2010; Rodrigues et al., 2012) have examined secondary students' EI. Some

others (Denanyoh, Adjei, & Nyemekye, 2015; Garba, Kabir, & Nalado, 2014; Küttim, Kallaste, Venesaar, & Kiis, 2014) tested EI of tertiary students. However, there is a paucity of study comparing secondary and tertiary students regarding their intention to be an entrepreneur or self-employed.

Level of education might correlate with age (Kautonen, Luoto, & Tornikoski, 2010) but might not guarantee that students at higher level of education would be readier to be an entrepreneur.

The studies above lead the authors to hypothesise that:

H₄: There will not be different results between secondary tertiary students in relation to EI.

2.1.4. Gender and EI

Gender has been employed by prior studies to predict entrepreneurial intention both as an independent and direct predictor or as a moderating variable and they showed different results between male and females. For example, Do Paço, Ferreira, Raposo, Rodrigues, and Dinis (2015) compared male and female student participants in their study. They found that male students had a higher score than female students. Further, Wilson, Kickul, and Marlino (2007) used gender as an independent variable to measure self-efficacy and EI. These scholars hypothesised that there would be a significant impact of gender on those predicted variables. They invited middle and high schools in the USA to participate in their study and found that in deed, gender had an important key to affect self-efficacy and EI. Further these scholars said that male participants had higher scores than female participants on self-efficacy and EI.

H₅: There will be different result between male and female students in relation to EI.

3. THEORETICAL FRAMEWORK

The Figure 1 below is developed based on the studies discussed above. All dimensions of big-five personality, attitude towards entrepreneurship, and entrepreneurship education are linked to EI. this model is adopted and employed for the first, second, and third models.

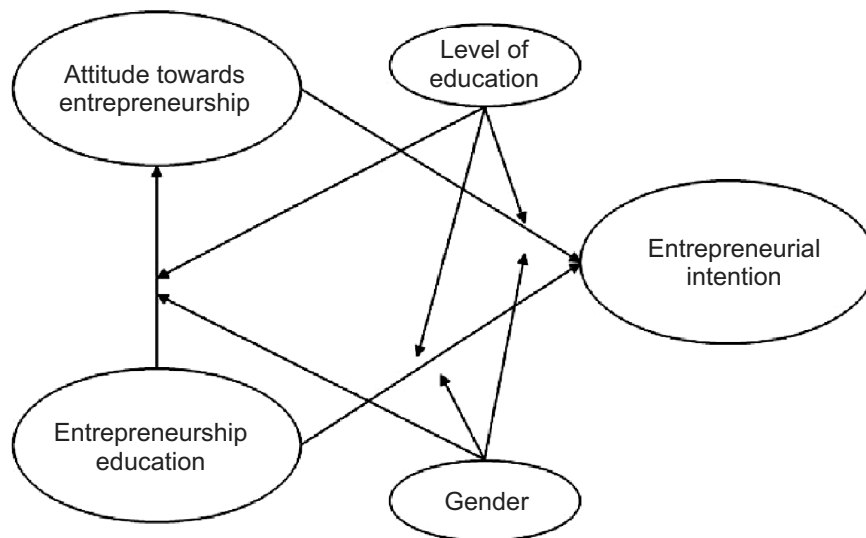


Figure 1: The theoretical framework

In total, there will be six models to be investigated. The first and fourth models are projected to predict both secondary and tertiary students' behavioural intention. The second and fourth model are for measuring the secondary students' behavioural intention, and the third and fifth models are for testing the tertiary students' behavioural intention.

4. METHODS

4.1. Sample

Participants of this current study were in two different groups. The first group contained secondary students from several high schools, vocational schools, and Islamic schools, both private and public. The second group consisted of tertiary students from private and public universities. All participants were approached conveniently.

4.2. Measures

To measure the three variables included in this study, the authors adopted and adapted items from existing studies. Attitude toward entrepreneurship was measured by adapting eight items taken from Tam, Chiew, and Chang (2011) and Robledo, Arán, Sanchez, and Molina (2015). In addition, EE was measured using seven items from Denanyoh et al. (2015) and Opoku-Antwi, Amofah, Nyamaah-Koffuor, and Yakubu (2012). Lastly, six items from Robledo et al. (2015) were adapted to measure EI.

4.3. Data analysis

There were five steps to analysis the data collected. The first step is exploratory factor analysis using rotation direct oblimin, followed by a reliability test for each factor. The second step is structural equation model to measure the proposed research framework. The third analysis was confirmatory factor analysis (CFA) as a follow up of the EFA calculation. Furthermore, for measuring the hypotheses, structural equation model was conducted. There were four criteria employed in this study including a probability score of ≥ 0.05 (Schermelleh-Engel, Moosbrugger, & Müller, 2003), CMIN/DF score of ≤ 2 (Tabachnick & Fidell, 2007), CFI score of ≥ 0.97 (Hu & Bentler, 1995), and RMSEA score of ≤ 0.05 (Hu & Bentler, 1999). As this is a comparative study, a group analysis is applied. Lastly, group analyses were applied to look at results of secondary students from tertiary students'.

5. RESULTS AND DISCUSSION

5.1. Participants

In total, there were 1004 participants consisting of 744 females (74.1%) and males 260 (25.9%). Further, predominant participants were in the age of 18 and 19 years old (655 participants; 65.2%) and followed by those who were 17 years old and younger (201 participants; 20%).

Table 1
Sex and age of participants

| <i>Sex</i> | <i>Freq</i> | <i>Percent</i> |
|--------------------------|-------------|----------------|
| Female | 744 | 74.1 |
| Male | 260 | 25.9 |
| Total | 1004 | 100.0 |
| <i>Age</i> | <i>Freq</i> | <i>Percent</i> |
| 17 years old and younger | 201 | 20.0 |
| 18-19 years old | 655 | 65.2 |
| 20-21 years old | 111 | 11.1 |
| 22 years old and older | 37 | 3.7 |
| Total | 1004 | 100.0 |

As presented in the table below, regarding their education, 358 participants (35.7%) were studying at a high school and 646 participants (64.3%) were studying at a university.

Table 2
Students' level of education

| | <i>Frequency</i> | <i>Percent</i> |
|--------------------|------------------|----------------|
| Secondary students | 358 | 35.7 |
| Tertiary students | 646 | 64.3 |
| Total | 1004 | 100.0 |

Furthermore, 244 of participants (24.3%) indicated that their parent had a business to run. Additionally, 132 of those who claimed that they had a parent possessing a business mentioned that they were interested in continuing their parent's business.

When participants were asked about their domicile, 719 participants (71.6%) answered that they domiciled in Jakarta and 285 of them (28.4%) domiciled out of Jakarta. Regarding their school/campus location, 786 participants (78.3%) said that their school was situated in Jakarta and the rest of participants showed that their school/campus location was out of Jakarta.

5.2. Exploratory factor analysis

5.2.1. Attitude towards entrepreneurship

Seven of the eight items of ATE survive. This construct formed two dimensions. Firstly, affective dimension had a Cronbach's alpha score of 0.826 and factor loadings ranging from 0.718 to 0.841. Secondly, cognitive dimension had a Cronbach's alpha score of 0.659 and factor loadings ranging from 0.668 to 0.769. These two dimensions were considered strong reliable.

Table 3
EFA result of attitude toward entrepreneurship

| <i>Affective</i> | | $\alpha = 0.826$ |
|------------------|--|------------------|
| At-1 | Career as an entrepreneur do not interest me at all | 0.841 |
| At-3 | If I had the opportunity and resources, I would love to start a business | 0.789 |
| At-4 | Amongst various options, I would rather be anything but an entrepreneur | 0.765 |
| At-2 | Being an entrepreneur would give me a great satisfaction | 0.718 |
| <i>Cognitive</i> | | $\alpha = 0.659$ |
| At-7 | I'd rather built a new company than be a manager of an existing one | 0.769 |
| At-6 | I'd rather be my own boss than working for other's company | 0.746 |
| At-8 | It is important for me to make a lot of money | 0.668 |

5.2.2. Entrepreneurship education

Seven indicators of entrepreneurial survived with a Cronbach's alpha score of 0.883. This construct had factor loadings ranging from 0.611 to 0.851. This variable had a strong reliability.

Table 4
EFA result of entrepreneurship education

| | | $\alpha = 0.883$ |
|-----|---|------------------|
| Ed3 | My school/university develops my entrepreneurial skills and abilities | 0.856 |
| Ed2 | My school/university provides the necessary knowledge about entrepreneurship | 0.838 |
| Ed5 | My school/university teaches students about entrepreneurship and starting a business | 0.833 |
| Ed1 | The education in my school/university encourages me to develop creative ideas for being an entrepreneur | 0.786 |
| Ed4 | My school/university develops my entrepreneurial skills | 0.750 |
| Ed7 | I thought entrepreneurship education encourages me to be an entrepreneur | 0.648 |
| Ed6 | Entrepreneurship can be developed through education | 0.617 |

5.2.3. Entrepreneurial intention

EI formed two dimensions: confidence and doubt. Confidence dimension retained four indicators with a Cronbach's alpha score of 0.865 and factor loadings ranging from 0.823 to 0.872. Doubt dimension owned two indicators with a Cronbach's alpha score of 0.597 and factor loadings of 0.677 and 0.946. All score of reliability tests were considered reliable.

Table 5
EFA results of EI

| <i>Confidence</i> | | $\alpha = 0.865$ |
|-------------------|--|------------------|
| In4 | I am determined to create a business venture in the future | 0.872 |
| In2 | I will make every effort to start and run my own business | 0.850 |
| In5 | My professional goal is to be an entrepreneur | 0.832 |
| In1 | I am ready to do anything to be an entrepreneur | 0.823 |
| <i>Doubt</i> | | $\alpha = 0.597$ |
| In3 | I have serious doubts about ever starting my own business | 0.946 |
| In6 | I have a very low intention of ever starting a business | 0.677 |

5.3. Hypotheses testing

The theoretical framework was tested using exploratory factor analysis as presented below. The model was addressed to predict EIo of all students. A fitted model was obtained with a probability score of 0.069, CMIN/CF score of 1.478, CFI score of 0.997, and RMSEA score of 0.022.

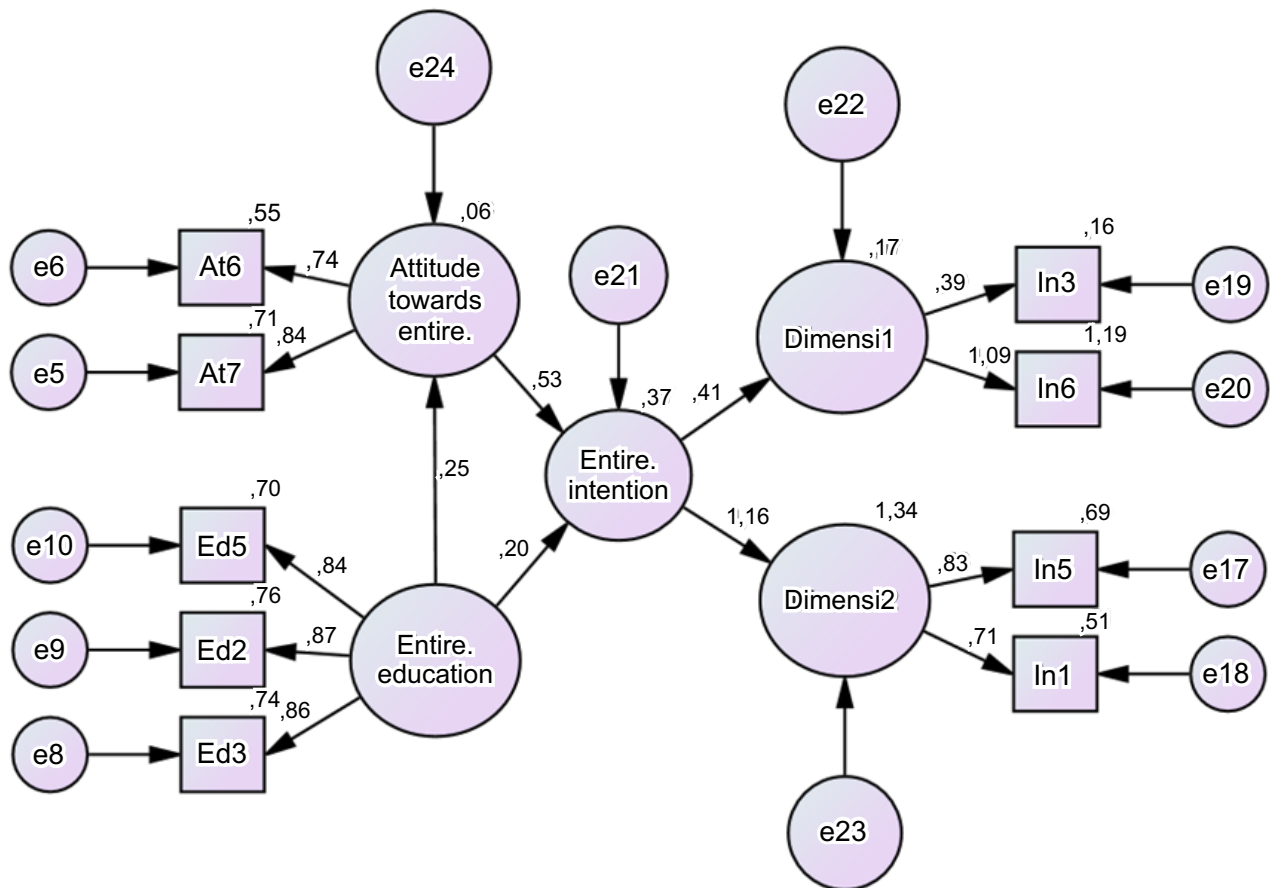


Figure 2: The first structural model testing – all students

Further, another four models were assessed. The second model was used to examine EI of secondary students. The model contained secondary student data. The model obtained a fitness with probability score of 0.0244, CMIN/DF score of 1.190, CFI score of 0.997, and RMSEA score of 0.023. The third model was dedicated to measure EI of tertiary students. This model was fitted with a probability score of 0.097, CMIN/DF score of 1.408, CFI score of 0.996, and RMSEA score of 0.025. The fourth model represents male students that obtains a fitness with a probability score of 0.461, CMIN/DF score of 0.999, CFI score of 1.000, and RMSE score of 0,000. Additionally, the fifth model was to measured female students' EI. The female students both secondary and tertiary students contributed to a fitted model with a probability score of 0.062, CMIN/DF score of 1.514, CFI score of 0.996, and RMSEA score of 0.026. to achieve a fitness, two indicators from two different dimensions of intention were correlated.

The table below shows summary of hypotheses testing from the five models.

Table 6
Summary of hypotheses testing

| Paths | All students (1 st model) | | Secondary students (2 nd model) | | Tertiary Students (3 rd model) | | Male Students (4 th model) | | Female Students (5 th model) | |
|-------------------------|---|-----|--|------|---|------|---|------|---|------|
| | C.R. | P | C.R. | P | C.R. | P | C.R. | P | C.R. | P |
| H ₁ ATE → EI | 3.856 | *** | 3.103 | .002 | 2.432 | .015 | 1.879 | .060 | 3.356 | *** |
| H ₂ EE → ATT | 6.803 | *** | 4.013 | *** | 5.423 | *** | 3.053 | .002 | 6.276 | *** |
| H ₃ EE → EI | 4.481 | *** | 2.380 | .017 | 2.279 | .023 | 1.672 | .095 | 3.042 | .002 |

5.4. Discussion

The path between ATE and EI had C.R. scores of 3.856 in the first model, 3.103 in the second model, and 2.432 in the third model. Further, the paths had C.R. scores of 1.879 in the fourth model, and 3.356 in the fifth model. As the scores are greater than 1.96 unless in the fourth model, the paths are significance and therefore, H₁ is accepted. This finding is supported by prior studies (Heuer & Kolvereid, 2014; Kautonen et al., 2015; Kautonen et al., 2013; Lortie & Castogiovanni, 2015). In general, people would have a favourable attitude on entrepreneurship so do the participants of this study. They might think that entrepreneurship is a way to wealthy, financial independency, fame, and give a hand to others (Purwana, Suhud, & Arafat, 2015). The finding shows that the more favourable one' attitude towards entrepreneurship, the more he or she has an intention to be an entrepreneur. In contrast, in the case of male students, attitude had no significant effect on intention. This path had a C.R. score of 1.879.

The second hypothesis predicts the impact of EE on ATE. In all five models, this path had C.R. scores of 6.803, 4.013, 5.423, 3.053, and 6.276 respectively. These scores indicate a significance. Therefore, H₂ is accepted. This finding is supported by prior studies (Fayolle & Gailly, 2015).

The third hypothesis predicts the impact of EE on EI. In the model of all participants, it has a C.R. score of 4.481. In addition, model of male participants had a C.R. score of 2.380 and female participants had a C.R. score of 2.280. Further, model of female students had a C.R. score of 3.042. These scores are

considered significance and therefore, H3 is accepted. This finding support prior studies as presented by Hattab (2014), Maresch et al. (2016), and Sánchez (2013). In contrast. In the model of male participants, it had a C.R. score of 1.672. As the score is less than 1.96, therefore, hypothesis for the fourth model is rejected. This finding however, is significant with a study conducted by Oosterbeek, Van Praag, and Ijsselstein (2010) that revealed that EE had insignificant impact on EI.

Another finding carried by this current study that there are different results between secondary and tertiary students. Tertiary students as they are more mature and educated, they supposed to be readier to choose an entrepreneur as their career. Empirically, in both sample categories, the C.R. scores are greater than 1.96 that indicate significances. However, although the hypothesis is rejected, in term of significant scores, in the first and third paths ($AT \rightarrow EI$ and $EE \rightarrow EI$), secondary students had a higher score than tertiary students. By bringing up this finding, it proves that level of education had no impact on EI. As mentioned earlier, there is a paucity of study comparing secondary and tertiary students in relation to EI. This finding can fill the gap.

Furthermore, this current study carries out a finding showing that there will be different results between male and females students in relation to EI. While Do Paço et al. (2015) and Wilson et al. (2007) documented that male participants had a higher score in relation to EI, this study shows differently. In all paths tested, C.R. scores of female students were greater than male students. In this case, the authors agree with the criteria of entrepreneurship program established by Vesper and Gartner (1997) that can influence the acceptance of the programs by participants.

6. CONCLUSION

This study aimed to examine the impact of ATE and entrepreneurship education on EE, and the impact of entrepreneurship education on attitude toward entrepreneurship. In total, there were five identical models examined including one to represent all participants, two to represent secondary and tertiary student participants, and two to represent male and female student participants. The findings indicate that all paths were significance unless two paths in the fourth model including EE and ATE insignificantly influenced EI in the case of male student participants.

The findings should inspire entrepreneurship educators to pay more attention on gender differences of students. Male and female have different acceptance of entrepreneurship. In this case, on one hand, education affected attitude, but on the other hand, attitude and education did not affect intention of male students. Although in practice, educators, in the name of equality, will not differ between male and female students in term of giving materials and tasks, but these findings should be considered as a critique and suggestion that in deed, male and female are different in nature and need different approach in delivering EE. According to Volery, Müller, Oser, Naepflin, and Rey (2013), giving a good quality of EE would contribute to human capital development. The findings of this study fill in the literature gaps particularly on the comparison of secondary and tertiary students relating to EI. Future study can explore the models tested to be researched in different setting of places.

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