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DOES AGROPRENEURSHIP EDUCATION PREDICT STUDENTS' ENTREPRENEURIAL ORIENTATION AND INTENTION? EVIDENCE FROM A DEVELOPING COUNTRY

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Abstract

The main objective of the study was to investigate the impact of agropreneurship education on entrepreneurial orientation and intentions of Malaysian agricultural students. Data gathered was analysed using partial least squares-based structural equation modelling (PLS-SEM). The results proved that agropreneurship education provided by local higher educational institutions is sufficient in contributing to the development of students' entrepreneurial skills and intentions. The results also indicated that agricultural graduates' intention to become agropreneurs is substantially influenced by proactive orientation and agropreneurship education. Given the substantial role played by agropreneurship education in promoting entrepreneurial skills and intentions, it is desirable to revamp the educational system to encourage students to become more entrepreneurially oriented.

Keywords: agropreneurship education, agropreneurship intention, agricultural students, risk-taking, innovativeness, proactiveness, developing country

Topic Groups: Entrepreneurship, Social sciences and business

INTRODUCTION

Malaysia is a federal constitutional monarchy with the economic contribution largely comes from service, manufacturing, and agriculture sectors. Given the world's current concern over food security and nutrition to the people, together with the concept 'agriculture is business', Malaysian government has placed a great attention to the development of modern agriculture in this country by encouraging more agricultural entrepreneurship activities or agropreneurship in this sector. Agropreneurship activities in Malaysia involve making profitable income by commercialising agriculture products from activities like farming, planting, fisheries, and animal husbandries.

The Malaysian government has shown serious commitment in modernizing this sector especially in the efforts to attract more young graduates to become agropreneurs. For example, in the 9th Malaysian Plan, RM511.9 million (approximately USD135 million) have been allocated with the target to produce more than 260,000 agropreneurs (Mohamed, Rezai, & Shamsudin, 2011) through the development of agropreneurship support programs including agropreneurship education (AE) and training. Billions of ringgits have also been allocated to conduct and support the agropreneurship programs such as the 'Young Agropreneurs' and 'My *Kampung* My Future' programs. To be exact, 1000 young agropreneurs (those who are 15 to 40 years old) are targeted to be produced in the year 2014 under the 'Young Agropreneurs' program (Abdul Kadir, 2014). However, despite the critical attentions and supports given by the government, the involvement of young Malaysians in agropreneurship activities is still very discouraging. According to Abdullah, Abu Samah, and Othman (2012), agropreneurship activities among Malaysian youth have accounted for only 26 percent. Therefore, the challenge now is to develop and increase the level of agropreneurial intention among this cohort. Studying people's intention to become entrepreneurs is very important as intention is known as the proximal determinant of human's behaviour (Ajzen, 1991).

The engines for agropreneurship development among young graduates are based on training and inculcating agropreneurship work culture (Mohamed, Rezai, Shamsudin, & Mahmud, 2012) during their study at the university level. Based on the assumption that 'entrepreneurs can be made', the importance of AE in the development of future agropreneurs has become a major concern of many parties including the policy makers. Entrepreneurship education in Malaysia is believed to contribute to the development of agropreneurship by creating a large business opportunities and equipping students with innovative business skills (Mohamed et al., 2012). Hence, many agropreneurship programs such as bachelor degree in agribusiness have been introduced in local universities. Universities also begin to offer agropreneurship courses to agricultural students with the aim to supply students with appropriate agropreneurial knowledge and skills which may enhance their intention to become agropreneurs later on. Young agropreneurs are postulated to have the risk-taking and innovative attributes in undertaking a business enterprise (Mohamed et al., 2012; Zainal Abiddin & Irsyad, 2012). Therefore students who are supplied with entrepreneurship education and enrolled in entrepreneurship courses are expected to be confident, motivated, proactive, innovative, willing to face entrepreneurship challenges, as well as have the

substantial skills to work in a team (Sánchez, 2013). Students who have participated in AE are expected to be more entrepreneurially oriented, and thus have a higher intention to become agropreneurs.

However, research on AE is still lacking and it remains substantially under-researched area. To date, a few studies related to AE have been published such as studies by Mohamed et al. (2012), Mohamed et al. (2011), and Sandhu, Hussain, and Matlay (2012). However, the focus of these studies is limited to the effectiveness of certain AE program or the AE needs by a certain population. The literature published on the impact of AE especially to how it influences students' entrepreneurial orientation and intentions is very scarce. Besides, a recent review on entrepreneurship education revealed that the relationship between entrepreneurship education and entrepreneurial intentions and new enterprise creation has been regarded as under-researched (Goduscheit, 2011). Furthermore, most of the studies on the relationship between entrepreneurship education and entrepreneurial intention were conducted in developed countries (Solesvik, Westhead, & Matlay, 2014). Hence, there is a need to investigate its impact on the context of developing economy. Also, the literature on entrepreneurship education has been criticized for being very limited in terms of its impacts on developing students' entrepreneurial skills (Sánchez, 2013). Entrepreneurship education has been found to offer insufficient entrepreneurial skills training (Jusoh, Ziyae, Asimiran, & Kadir, 2011). This is very true especially in the Malaysia context. The literature on entrepreneurship education in Malaysia shows that entrepreneurship education in this country is not able to inculcate students with entrepreneurial knowledge and skills (Ismail & Ahmad, 2013). However, to generalize their findings to another area of entrepreneurship definitely requires empirical proof. Therefore, further investigation is needed to find whether AE in Malaysia will have a significant impact on instilling entrepreneurial skills among students. Thus, this study aims to contribute to the agropreneurship and entrepreneurial intention literature, from the perspective of developing economy, by providing the answers to the corresponding research questions to generate a better understanding of agropreneurial intentions and the influence of entrepreneurial orientation and AE on developing the intention among Malaysian agricultural students. Hence, the result of this study will fill the blank spot in our understanding of entrepreneurship especially in understanding agropreneurship. The findings of the current study will provide the answers to the following research questions:

RQ1. What is the impact of agropreneurship education on students' entrepreneurial orientation and intentions?

RQ2. Do students' entrepreneurial orientation predict the formation of agropreneurial intention among Malaysian agricultural students?

In order to answer such questions, we establish a causal relationship between these variables.

AGROPRENEURIAL INTENTION AND RESEARCH MODEL

The fundamental argument of entrepreneurial intention studies lies in the capacity of intentions to predict human behaviour. Among the competing intention models that have been employed in a substantial number of intention studies are the

theory of planned behaviour (Ajzen, 1985) and entrepreneurial event model (Shapero & Sokol, 1982). Intention can be defined as a cognitive indicator of a person's readiness to execute a certain behaviour in question (Shook & Bratianu, 2010). Hence, agropreneurial intention (AI) may be defined as a person's readiness to be self-employed by creating a new agricultural business venture to seek wealth.

Central to the argument that entrepreneurship can be taught and learned has highlighted the important role played by entrepreneurial education prior to the commencement of certain actual behaviour. At the university level, entrepreneurship education is expected to stimulate students' awareness and to form a mental picture and experience of the viability of entrepreneurship as a career choice (Fayolle & Gailly, 2015). Entrepreneurship education appears to enable students to acquire a set of knowledge and skills needed for successful performance along the entrepreneurial process (Matlay, 2008). This set of skills can facilitate future entrepreneurs especially in opportunity discovery as well as in promoting entrepreneurship desirability and feasibility, and thus increase the formation of intention to become self-employed (Peterman & Kennedy, 2003; Saeed, Yousafzai, Yani-De-Soriano, & Muffatto, 2013; Solesvik et al., 2014). Though substantial studies have contributed to the relations between entrepreneurial education and entrepreneurial intention, inconsistency with respect to the findings has been detected. While positive impact of entrepreneurship education on intention has been reported in a few studies (Farashah, 2013; Fayolle, Gailly, & Lassas-Clerc, 2006; Hattab, 2014; Küttim, Kallaste, Venesaar, & Kiis, 2014; Matlay, 2008; Pouratashi, 2014; Saeed et al., 2013; Sánchez, 2013), some others have reported no impact (Fayolle & Gailly, 2015; Franco, Haase, & Lautenschläger, 2010; Marques, Ferreira, Gomes, & Rodrigues, 2012) or even negative effects (Oosterbeek, Van Praag, & Ijsselstein, 2010). The inconclusive findings show that our understanding on the impact of entrepreneurship is still lacking (Karlsson, 2013; Solesvik et al., 2014). Thus, it deserves further attention from entrepreneurship scholars. Furthermore, it has been argued that the impact of entrepreneurship education is different based on regional context (Küttim et al., 2014; Walter & Dohse, 2012). This highlights a need to investigate the impact of entrepreneurship education on agropreneurship development or known as agropreneurship education and agropreneurial intention in the context of developing country. Despite numerous studies dedicated to clarify the impact of entrepeneurship education, the actual relationship between specific entrepreneurship education i.e. agropreneurship education (AE) and students' intention to engage in agropreneurship activities have not yet been clearly established. Therefore, we hypothesized:
H1: **There is a positive relationship between agropreneurship education and agropreneurial intention of agricultural students.**

Students who undergo an entrepreneurship program are expected to be entrepreneurially oriented as they acquire a set of positive outcomes from the training such as high motivation and high level of self-confidence, become proactive, creative, and team-oriented (Sánchez, 2013). The fact that agropreneurship deals with perishable agricultural products has placed agropreneurship in a fragile and risk-prone business that operates under

uncertainty conditions. Thus, this condition requires an agropreneur to be a risk-taker which is a personality trait that refers to the individuals' willingness to act under uncertainty (Lumpkin & Dess, 1996) and to penetrate the unique agropreneurship market. Also, due to the perishability issue, the market of agricultural products is very unique and challenging that requires agropreneurs to be creative and innovative by having the capability to design and introduce a new product which can attract customers' attention. Besides that, agropreneurs also need to be proactive by identifying the unique opportunities and be the first to act. Risk-taking, innovative, and proactive skills are also known as entrepreneurial orientation (EO) in entrepreneurship literature (Bolton & Lane, 2012; Taatila & Down, 2012). These orientations are necessary for agropreneurs to be successful when dealing with the dynamic and expeditious agropreneurial environment especially when it comes to recognizing business opportunities and circumventing entrepreneurial barriers along the entrepreneurial process. Based on the concept that entrepreneurship can be taught and learned, the AE provided by higher educational institutions (HEIs) must be able to produce this set of skills among students and tailor them to become entrepreneurially oriented.

An extensive literature on entrepreneurship education has shown that human capital investment in entrepreneurship education is related to the development of integrated entrepreneurial skills, capabilities, and competencies (Matlay, 2008; Rae, 2010; Sánchez, 2013; Solesvik et al., 2014). For example, in a study by Sánchez (2013), entrepreneurial education was found to have a significant relation to competencies such as risk-taking (RT) and proactiveness (PRO) among the sample of students. In another study, it was reported that students who engaged in entrepreneurship education have reported that education has increased their innovativeness (INN) and confidence level to make a move to a high degree (Støren, 2014). Although there are contradictory findings that show entrepreneurship education has no impact on entrepreneurial skills and traits (i.e. market awareness, creativity, flexibility, and risk-taking) (Oosterbeek et al., 2010), the findings are lack in terms of generalizability to developing countries as the study was conducted in a well-developed country. An investment in AE could result in the production of accumulated assets and EO which enables people to deal with the barriers to set up an agricultural business venture. Therefore, it is reasonable to assume that students who participated in AE will be entrepreneurially oriented as a result of the development of certain kind of skills such as risk-taking, innovativeness, and proactiveness compared to those who do not. Therefore, it is hypothesized:

H2a-H2c: **There is a positive relationship between agropreneurship education and EO (risk-taking, innovativeness, and proactiveness) of agricultural students.**

Since entrepreneurship takes place over time (McMullen & Shepherd, 2006), starting an agropreneurship evidently involves risks, be it strategic or financial risks. According to Sexton and Bowman (1983), entrepreneurship behaviour has generally been associated with a moderate level of risk propensity. Literature has showed that risk-taking tendency predicts the formation of intentions to become entrepreneurs (Lüthje & Franke, 2003; Sánchez, 2013; Trucker & Selcuk, 2009; Uddin & Bose, 2012; Zeffane, 2015) where risk-taking ability distinguishes entrepreneurs from non-entrepreneurs. Risk-taking tendency was found to be one

of the strongest determinants for business students intention to start their own business (Uddin & Bose, 2012). In line with this finding, Lim, Lee, and Cheng (2012) found that male students who have shown higher inclination towards entrepreneurship have also shown higher risk-taking tendency. However, there are also studies fail to prove the positive significant association between these two variables (Fitzsimmons & Douglas, 2005). In terms of agropreneurship, a previous research showed that agropreneurial intention among students who perceived themselves as risk-averse and students who perceived themselves as risk-loving have differed significantly where students who are risk-loving showed higher intention to venture in agropreneurship compared to the other group (Zakaria, Adam, & Abujaja, 2014).

The second dimension of EO is innovativeness. According to Lumpkin and Dess (1996), innovative agropreneurs create superior products, improve the existing products, and deliver greater effectiveness and efficiency in the production process. Individuals' innovative capabilities can represent their entrepreneurial behaviour where entrepreneurs are more innovative than non-entrepreneurs (Gürol & Atsan, 2006; Mueller & Thomas, 2001). Innovative individuals can also be linked closely with higher intention to become entrepreneurs. A considerable amount of studies has shown positive association between individuals' innovativeness and their intention to become entrepreneurs (Ahmed et al., 2010; Ghazali, Ibrahim, & Zainol, 2012; Gürol & Atsan, 2006; Ismail, Jaffar, & Hooi, 2013). Indeed, a study has shown that innovation is the main motivation for people to start a business venture (Mueller & Thomas, 2001). By linking this review to agropreneurship context, it can be posited that those who have innovative capabilities in creating new agricultural-based products or modifying existing agricultural products will have higher intention to become agropreneurs than those who do not.

The third dimension of AO is proactiveness which refers to the process of which entrepreneurs anticipate and respond to the customers' future needs and expectations and the involvement of introducing new products before starting the competition in the market (Lumpkin & Dess, 1996, 2001). According to Crant (1996), proactive individuals who are involved actively in opportunity identification and respond to it are eager to do something, take real actions, and do not simply give up until their objectives are successfully achieved. Indeed, proactiveness involves being ahead of competitors to either improve the existing situation or introduce new products and processes (Gupta & Bhawe, 2007). Hence, it can be concluded that proactiveness is very closely related to innovativeness (Lumpkin & Dess, 2001). While innovativeness concerns with agropreneurs' inclination towards creating new agricultural-based products or process or modifying existing products or process, proactiveness on the other hand concerns with forward-looking perspective in meeting future customers' needs and expectations in agricultural-based market. Even though limited studies have investigated the relationship between proactiveness and entrepreneurial intention, existing studies have shown that proactiveness contributes significantly to entrepreneurial intentions (Crant, 1996; Sánchez, 2013), significantly correlated with business creation (Brandstätter, 2011), and positively related to career success (Fuller Jr & Marler, 2009). To summarize, it is proposed that:

H3a-H3c: **There is a positive relationship between agricultural students' EO (risk-taking, innovativeness, and proactiveness) and agropreneurial intention.**

METHODOLOGY

Sample

In order to test our hypothesis, data were collected from diploma and bachelor students who were in the final semester of their study from three public universities and two polytechnics in Malaysia. Final semester students were chosen in order to make sure adequate education regarding agropreneurship has been obtained and also to investigate the impact of AE on students' EO and intention. Besides that, it is suitable to assess students' intention for self-employment at the very last stage of their education (Davey, Plewa, & Struwig, 2011).

Methods

The judgemental sampling technique was applied when choosing the respondents. Due to the confidentiality issue of students' contact information such as telephone number, mailing address, and email, students were approached via email which was sent by the academic advisor. The email sent to the respondents contained a link to an online web survey. The survey items were originally developed in English. Taken into consideration that the respondents are Malaysians who might face difficulty in understanding the meaning of the items, the questionnaire were therefore translated into the Malay language, which is the official language in this country. Translation and back translation process as suggested by Brislin (1970) were applied. The Malay version of the survey was the one that was distributed to the respondents from July to September 2015.

692 final semester students from five HEIs were approached. 335 students have participated in the online web survey which yield a response rate of 48.4 percent. This rate was higher than the previous response rate reported for an online web survey (see for e.g. Virick, Basu, and Rogers, 2015). In order to run a structural equation modelling (SEM) analysis with $\alpha = 0.05$, anticipated effect size of 0.15, and desired statistical power of 0.95, the minimum required sample size was 153. Thus, the sample size in this study was considered sufficient. Considering the respondents' profile, the 335 samples represented 40.8 percent of male and 59.2 percent of female. In terms of level of education, 30.6 percent of the respondents were pursuing their diploma in agricultural study in Malaysian Polytechnics while the rest 69.4 percent were pursuing their bachelor degree in agriculture at public universities.

Measures

Agropreneurial intention (AI), the dependent variable, was measured by measuring the students' responses to the six statement items adapted from Thompson (2009). There were six statements used to measure AI on a scale of six; from 1 = Strongly agree to 6 = Strongly disagree. Independent variables were the AE and EO factors. AE was measured using items that were originally developed by Keat, Selvarajah, and Meyer (2011). There were nine items used to measure this variable on a scale

of five; from 1 = Strongly agree to 5 = Strongly disagree. In measuring EO, respondents were asked to respond to four items related to risk-taking orientation. Respondents were also asked to answer another four questionnaire items related to innovative orientation. Further, respondents were presented with three items to measure their proactiveness orientation. The items used in measuring all dimensions of entrepreneurial orientation were adapted from Bolton and Lane (2012). The items were assessed on a scale of five; from 1 = Strongly agree to 5 = Strongly disagree.

RESULTS

The data obtained were analysed using SmartPLS 2.0. The purpose of using partial-least squares (PLS) was to test the pattern of relationship between the variables in the research model by estimating the parameters in the outer and inner model.

Assessment of measurement model

In assessing the measurement model, construct validity was performed to assess the extent to which the result obtained from the instrument used in the study fit the theories of which the test is designed (Sekaran & Bougie, 2010). In order to assess construct validity, a few tests to assess convergent and discriminant validity were performed. Convergent validity can be tested by referring to factor loadings, composite reliability (CR), and average variance extracted (AVE) (Hair, Ringle, & Sarstedt, 2011). On the other hand discriminant validity can be detected by analysing the correlation between measures where low correlation between measures depicts that a construct is unique and is not represented by other constructs in the model (Cheung & Lee, 2010). Based on Fornell-Larcker criterion, discriminant validity is established when the square root of each construct's AVE is higher than its correlation with other constructs (Hair, Hult, Ringle, & Sarstedt, 2014). As shown in Table 1, the loadings for all items ranged from 0.620 to 0.897; higher than the minimum loading recommended by Hair et al. (2014). All the CR and AVE values were higher than 0.7 and 0.5 respectively. This shows that all the five constructs are all valid measures of their respective constructs based on their parameter estimates and statistical significance.

Table 1: Measurement model

Construct	Items	Loadings	AVE	CR	Construct	Items	Loadings	AVE	CR
AE	AE1	0.667	0.612	0.934	**AI**	AI1	0.790	0.730	0.942
	AE2	0.755				AI2	0.862		
	AE3	0.792				AI3	0.822		
	AE4	0.844				AI4	0.854		
	AE5	0.817				AI5	0.897		
	AE6	0.819				AI6	0.897		
	AE7	0.823			**PRO**	PRO1	0.773	0.591	0.812
	AE8	0.753				PRO2	0.806		
	AE9	0.755				PRO3	0.726		
INN	INN1	0.700	0.550	0.830	**RT**	RT1	0.620	0.584	0.847
	INN2	0.793				RT2	0.774		
	INN3	0.710				RT3	0.829		
	INN4	0.759				RT4	0.815		

AE, agropreneurship education; AI, agropreneurial intention; RT, risk taking; PRO, proactiveness; INN, innovativeness

The results also illustrate that adequate discriminant validity exists for the measures used in this study. As shown in Table 2, discriminant validity was established as the square root of each construct's AVE was higher than its correlation with other constructs (Hair et al., 2014). In conclusion, the measurement model in the current study is satisfactory in terms of construct validity, reliability coefficient, convergent validity, and discriminant validity.

Table 2: Discriminant validity

	AE	INN	AI	PRO	RT
AE	***0.782***				
INN	0.394	***0.742***			
AI	0.465	0.325	***0.855***		
PRO	0.450	0.461	0.483	***0.769***	
RT	0.319	0.402	0.322	0.429	***0.764***

Note: Values in the diagonal are AVEs while the off-diagonals are squared correlations
AE, agropreneurship education; AI, agropreneurial intention; RT, risk taking; PRO, proactiveness; INN, innovativeness

Assessment of structural model

The results of the measurement model presented in Table 1 and Table 2 were within the recommended values, therefore providing the support to proceed with hypotheses testing. This study followed Hair et al. (2014)'s suggestions of employing bootstrapping procedure with a resample of 5000. Table 3 shows the bootstrapping results for hypothesis testing. H1 examined the relationship between AE and AI. It was found that AE significantly contributed to the students' AI (β = 0.288, p < 0.01). The bootstrapping analysis showed that all EO factors, RT (β =

0.319, $p < 0.01$), INN ($\beta = 0.394$, $p < 0.01$), and PRO ($\beta = 0.450$, $p < 0.01$) were found to impact AI significantly. AE alone was found to explain 10.2 percent, 15.6 percent, and 20.3 percent of the variances in RT, INN, and PRO respectively. Thus, H2a, H2b, and H2c were confirmed. For H3, we investigated the impact of EO factors on AI. Our results revealed that only PRO ($\beta = 0.298$, $p < 0.01$) impacted AI significantly. The findings did not provide the support for significant relationships between RT and AI and between INN and AI. Therefore, H3c was accepted. However, the bootstrapping analysis failed to prove the same for H3a and H3b. The collective EO factors and AE were found to explain a substantial proportion of the variance in AI (R^2 = 31.8 percent).

Table 3: Summary for the structural model

Hypothesis	Relationship	Std. Beta	Std. Error	t-Value	Decision
H1	AE -> AI	0.288	0.059	4.919**	Supported
H2a	AE -> RT	0.319	0.048	6.626**	Supported
H2b	AE -> INN	0.394	0.046	8.588**	Supported
H2c	AE -> PRO	0.450	0.046	9.834**	Supported
H3a	RT -> AI	0.086	0.058	1.492	Not supported
H3b	INN -> AI	0.040	0.057	0.694	Not supported
H3c	PRO -> AI	0.298	0.063	4.742**	Supported

** $p < 0.01$

AE, agropreneurship education; AI, agropreneurial intention; RT, risk taking; PRO, proactiveness; INN, innovativeness

DISCUSSION AND CONCLUSIONS

With the rise of the concept 'agriculture is business', AE has been emphasized especially at the tertiary level as a result of increasing awareness regarding the importance of graduate agropreneurship in contributing to sustainable society. Considering the results of our study, it seems that AE has significantly predicted agricultural students' EO and their intentions to become agropreneurs. AE was found to have the ability to develop students' inclination to embark in agropreneurship business activities as their source of income at some point in their life after graduation. The current finding is consistent with the study by Hattab (2014) and Pouratashi (2014) which stated that there is a significant relationship between AE and students' intentions to become entrepreneurs. Agricultural students who are supplied with sufficient and relevant agropreneurship knowledge are anticipated to be more motivated and disposed towards creating and starting their own agropreneurship business. AE was also found to be capable of developing students who are entrepreneurially orientated by developing skills such as risk-taking, innovative, and proactive. Thus, our findings debunk the previous claim that entrepreneurship education in this country cannot create graduates with the abilities to take up entrepreneurial challenges (Cheng, Chan, & Mahmood, 2009). Interestingly, our empirical data have proven otherwise. The current findings proved that agropreneurship courses and curriculum provided by the Malaysian HEIs have succeeded in providing students with in-depth knowledge and experience of how to start an agricultural-based business.

It has been argued that entrepreneurship needs a set of entrepreneurial skills including innovativeness, risk-taking, persistence, and proactiveness in order to act along the entrepreneurial process (Lim et al., 2012). Proactive orientation was found to impact agropreneurial intention among Malaysian agricultural students. This result is in line with the findings by Sánchez (2013) in which the author found that the intention to become self-employed was positively and significantly related to proactiveness. Thus, our finding also supports Sánchez (2013)'s conclusion that proactiveness is an individual personality characteristic that has a connection with individual motivation and action. In the current study, proactiveness has emerged as the strongest predictor of agropreneurial intention. However, our data did not provide the evidence for the impact of risk-taking and innovative orientations on agropreneurial intentions. The results suggest that students' risk-taking and innovativeness abilities do not stimulate the desire to embark in agropreneurship activities. In our opinion, one possible reason for the insignificant impact of risk-taking and innovativeness on students' agropreneurship intention lies in our sample characteristics. As evident in a study by Zeffane (2015), the positive relationship between risk-taking and entrepreneurship intention was only significant among actual entrepreneurs but not among students sample. The samples of the current study may view that agropreneurship creation is still remote for them. Rather than thinking about becoming self-employed, they may pay more attention to their study in terms of pursuing it to the higher level. Therefore, students may tend to ignore their risk-taking and innovative skills and become not interested to use them along the agropreneurship business creation process. Furthermore, based on the cognitive perspective of risk-taking orientation which assumes that entrepreneurs are subject to biases (Kahneman & Lovallo, 1993) and due to perishability nature of agricultural products, the students sample may lack self-confidence in performing agropreneurship business. However, further empirical investigations are definitely needed to support this suggestion.

The main objective of this study was to examine the effect of AE on students' EO and intention to become agropreneurs. Overall, the results obtained support the hypotheses. The findings of the current study suggest that AE is practical in promoting agropreneurship skills and intentions among graduates through effective curriculum course and training. The evidence provided strengthen our understanding about AE and the development of EO and intentions. Practically and managerially, our findings contribute to the educational providers in terms of helping them to design a well-directed course curricular that may promote the development of agropreneurial skills and competencies among agricultural graduates. This study also managed to make a novel theoretical contribution by testing the impact of AE on students' EO in a developing country. Also, unlike previous studies that investigated the impact of EO at organizational level, this study examined the impact of EO at individual level, and thus provides new insights into a more targeted and effective manner. The development of EO among graduates could result in unbelievable entrepreneurial outcomes. In terms of methodological contribution, this study contributed to the PLS literature by applying PLS-SEM analysis technique in exploring the causal links between exogenous and endogenous variables in the model used.

This study has its limitations. Firstly, this study has time limitation. In this study, intentions were investigated and cross-sectional research design was employed. Entrepreneurship is about wealth creation. Obviously intentions alone cannot create wealth. Therefore, future study should employ a longitudinal design and investigate if agropreneurial intentions will lead to actual agropreneurship business activities. Secondly, this study has a limitation regarding the use of student samples. As discussed in previous paragraph, the students sample may choose to pay more attention to pursuing their study to the higher level instead of focusing on creating a business. Hence, future study should choose samples from non-student population especially the young agropreneurs (those who just started their agropreneurship business). Thirdly, this study only focused on the impact of AE and EO in explaining agropreneurial intentions. Other behavioural, contextual, institutional, and social factors could also be important. Future research should also look into these variables in order to understand better the formation of agropreneurial intentions.

In conclusion, our findings have provided the answers to the research questions. Firstly, AE has a significant impact on the formation of EO and intentions among agricultural graduates. Secondly, EO has partially predicted the agropreneurial intention among Malaysian agricultural students. Since proactiveness orientation is the strongest predictor of agropreneurial intentions, there is a need to consider the content of local agropreneurship education in terms of its curriculum and pedagogical approach in such a way that promote this entrepreneurial skill.

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