

The influence of entrepreneurial competencies on entrepreneurial career option among polytechnic students in Nigeria

Umar Garba Isah^{1*} Norashidah Hashim²

1. Department of Business Administration and Management, School of Management Studies, Kano State Polytechnic, Kano, Nigeria
2. School of Business Management, College of Business, Universiti Utara Malaysia, 06010, Sintok, Kedah, Darul Aman, Malaysia

*Email: umargarbai@yahoo.com

Abstract

Entrepreneurship is gradually becoming a parameter of measuring socio-economic developments among nations. Entrepreneurship is helping the growth of economies by creating additional jobs, wealth, and reducing the incidence of abject poverty. Developed countries ascribe their achievements to technological development, scientific break-through, improved communication and information technology, and competitive advantage gained through their entrepreneurial competencies and adventures. The objective of this paper is to examine the significance of entrepreneurial skills and their influence on entrepreneurial career option. Entrepreneurial competencies seek to create awareness among students about entrepreneurship as the appropriate career option to engage after graduation, as well as impart the needed social skills and knowledge of the use of insights and intuitions to identify and exploit opportunities to start a business. A quantitative approach was used involving a total of 505 questionnaires distributed to polytechnic students in Nigeria. A total of 425 questionnaires were completed and returned with a response rate of 84.2 percent. Data were analysed using SmartPLS 3; results indicate a significant positive influence of know-who and know-when competencies on entrepreneurial career option. The study was consistent with earlier studies on the relationship between entrepreneurial competencies and entrepreneurial career option among students. The findings of the study will be of immense benefit to the government, education regulatory agencies, higher education institutions, and the general public. Further, the study will serve as a framework for future reference and assist in formulating future policies on entrepreneurship in Nigeria.

Keywords: Entrepreneurial career option, entrepreneurial competencies; polytechnics

1. Introduction

The global environment regards entrepreneurship as a tool of exploiting new ways of achieving economic development and meeting customer satisfaction by promoting competition through new market entry strategies or developing entirely new ways of doing business (Matusik, 2016). It is true, that socioeconomic developments open opportunities to form new business ventures as alternative career path option. The decision to choose to be an employee or self-employed is indeed, a complex and difficult decision. In fact, individuals make decisions to be self-employed by committing themselves to an entrepreneurial career as an option (Yarima & Hashim, 2016; Pérez-López, González-López, & Rodríguez-Ariza, 2016). Entrepreneurial career option (ECO) is a cognitive decision to consider an entrepreneurial career among other available career options (Pihie & Akmaliah, 2009). The entrepreneurial career leads to the economic and social development of nations through the provision of employment opportunities and social well-being of its citizens (Bakar, Islam, & Lee, 2015; Hoe Keat, Ahmad, & Hashim, 2014). On the other hand, the socioeconomic wellbeing of individuals to a great extent depends on entrepreneurial competencies (EC) which are popularly known as individual knowledge and skills for establishing a successful business enterprise (Hoe et al., 2014; William-Middleton & Donnellon, 2014).

Also, EC influences an individuals' enthusiasms to start their own entrepreneurial business venture through certain learner's competencies such as knowledge and skills (Hoe et al., 2014). More so, EC programmes also includes know-who and know-when competencies (Ernest, Matthew, & Samuel, 2015; Hoe et al., 2014). In this respect, know-who competency refers to the social skills and abilities to interact with people that are significant to business creation and management, whereas know-when connotes to knowledge of insights and intuitions for taking entrepreneurial action.

2. Problem Statement

Graduate unemployment is increasingly becoming a source of anxiety to governments and other concerned

individuals and organisations (Adawo & Atan, 2013; Lourenco, Taylor, & Taylor, 2013). Unemployment among graduates persistently gives policymakers sleepless nights due to its effects on the wellbeing and security of nations as such is receiving much scholarly attention. Previous studies have blamed rising graduate unemployment mainly on the upsurge in the number of higher education institutions (HEIs) across the globe. For instance, Wang, Liu, and Lai, (2012) and Zhou and Xu (2012) explain that expansion in HEIs leads to increase in the number of graduates and decrease in employment opportunities in China. Because, these institutions are churning out students in large numbers that the employment market cannot absorb (Lourenco et al., 2013). In Nigeria, for example, there are about 365 federal, state, and private owned HEIs as at 2009/2010 session under the supervision of the National Universities Commission (NUC), the National Board for Technical Education (NBTE), and the National Commission for Colleges of Education (NCCE). In this view, 1,691,141 students were admitted by these institutions during the 2008/2009 session alone. Notwithstanding, an average of 500,000 graduates were produced by these organisations annually (). Consequently, a gap is created between what the education system provides and what the labour market can absorb. Technically, this leads to graduate unemployment in Nigeria with resultant negative consequences on the peace and security of the nation (Adesina, 2013; Awogbenle & Iwuamadi, 2010). Scholars like Musa and Adewale (2015) traced unemployment among graduates in Nigeria to the introduction of formal bureaucracy under colonial rule which engages school graduates into the civil service immediately after graduation. But, graduate unemployment became most apparent in Nigeria when austerity measures were declared due to global economic downturn which began to show its ugly face in the early 1980s. Entrepreneurship then became mostly a necessity due to the need to survive (Adawo & Atan, 2013). Furthermore, problems of poor infrastructure, rationalisation, rightsizing, downsizing, privatisation and commercialisation of public enterprise etc. further aggravated the already dangerous situation by making employment opportunities sparse (Abdulrahman, 2014).

However, Nigeria's endowment with human and material resources is non-parallel in Africa and lingering prospects of inclusion into the group of 20 leading world economies before the year 2020 (Akhueomonkhan, Raimi, Patel, Fadipe, 2014; Innocent, 2014; Stevenson, 2011). Also, Nigeria's climatic condition and fertile arable land favour the cultivation of agricultural produce. Similarly, Nigerian youths and graduates of higher education institutions (HEIs) perceive of opportunities in and ever ready to engage in ECO to be self-reliant (Global Entrepreneurship Monitor (GEM, 2013). This implied that Nigerian graduates and youths could exploit these potentials to participate in ECO.

In the past, the Nigerian government has used the medium of entrepreneurship as a strategy to restrain unemployment and reduce the high incidence of poverty among the populace (Abdurrahman, 2014; Amire, Prosper, & Eze, 2016; Idoko, 2013). Similarly, policies such as indigenisation, commercialisation, and privatisation of public parastatals as well the creation of institutions to provide consultancy services, technical assistance, and funding to entrepreneurs were also put in place (Olutunla, 2001). Recently, Nigeria has joined the global trend where education is being used to impart EC to students through the transmission of knowledge, creation of awareness, and changing their mindset towards exploring the entrepreneurial career option (Amire et al., 2016; Hoe et al., 2014). Hence, EC programmes were designed and imparted to students through entrepreneurship education (EE) to connect graduates to a network of opportunities and insights in taking entrepreneurial actions (Asghar, Hakkarainen, & Nada, 2016; Hussain & Hashim, 2015).

Despite entrepreneurial initiatives, creation of opportunities, and provision of EC programmes through EE in the Nigerian HEIs, yet, the issue of unemployment continued unabated. Given this, Abdulrahman (2014) blamed the problem on the inadequacy of qualified EE lecturers in HEIs, inadequate funding of EE programmes, and the implementation of a faulty curriculum of instruction. In effect, the current unemployment level manifests themselves in the emergence of socio-economic problems. This refers to prostitution, armed robbery, oil pipe vandalisation, oil bunkering, kidnapping, substance abuse, rape, hostage-taking, religious uprisings etc., a way of earning a means of livelihood (Abdurrahman, 2014, Maina, 2014; Raimi, Akhueomonkhan, & Ogunjirin, 2015). This paper intends to enhance an understanding of ECO through exploring the influence of EC on ECO.

3. Literature Review

3.1 Entrepreneurial Career Option

Entrepreneurial career option (ECO) refers to a deliberate and premeditated decision to organise resources to exploit entrepreneurial opportunity to form a new venture as an alternative career path option (ECO) (Krueger, Reilly, & Carsrud, 2000; Yarima & Hashim, 2016; Perez-Lopez et al., 2016). A person's resolve to spend the rest of his/her life as an entrepreneur sets the foundation of entrepreneurship and suggests a final decision to engage in a venture formation as a career option (Yarima & Hashim, 2016). ECO is a decision individual make to join in an entrepreneurial career among other available career options (Douglas & Shepherd, 2002; & Pihie & Akmaliah, 2009). In effect, ECO is the career option suggested for youth and graduate students (Ashour, 2016; & Yarima & Hashim, 2016). ECO can mediate the dynamic economic conditions arising from stiff competition and effects of unemployment due to rightsizing, downsizing, retrenchment, and globalisation (Israel & Johnmark,

2014; & Perez-Lopez et al., 2016).

Accordingly, an individual's career preference is the first step in exploring ECO (Kolvereid, 2016), whereas other scholars explained the decision regarding psychological, cognitive, and personal factors. Given these, a person's entrepreneurial attitudes can describe or predict his/her career option (Farsi, Modarresi, Motavaseli, & Salamzadeh, 2014; Shook, Priem, & McGee, 2003). Attitudes towards a behaviour or action predict intention towards the act and subsequently lead to the implementation of the response in question (Kind, Jones, & Barmby, 2007). Additionally, Roy, Akhtar, and Das (2017) indicated that attitude influences graduates' entrepreneurial career intention; and that entrepreneurs require entrepreneurial knowledge and viable entrepreneurial opportunity to pursue an ECO.

Further, entrepreneurial motives explain persons desire to engage in ECO. Motives explain reasons for doing what one is doing, therefore its ability to predict ECO. Studies have shown that some persons' participation in entrepreneurial career may be due to certain positive pull factors or the recognition of certain opportunities in the environment. Other individuals are compelled to engage in entrepreneurial career due to negative push factors such as loss of job, unemployment situation, retirement, retrenchment, etc. (Ahmad, Jabeen, & Khan, 2014; Beeka & Rimmington, 2011; Islam, 2012;). Previous studies indicate that individuals also engage in ECO because of their need for achievement, independence, personal control etc. while others still indicate a preference for entrepreneurial career to be able to fulfil a family obligations (Dawson & Henley, 2011; McClelland, 1961; Millman, Li, Matlay, & Wong, 2010).

Similarly, entrepreneurial scholars also explained ECO in terms of an individual's perception of risks. Risk is a fundamental feature of the business, and some individuals are risk-lovers while others are risk-averse (Segal, Borgia, Schoenfeld, 2005; Zwang, Wang, & Owen, 2015). For instance, risk-averse individuals have a preference for public sector jobs because of the security it provides, rather than being self-employed (Stevenson, Daoud, Sadeq, & Tartir, 2010). Aminu, Mahmood and Muharram (2015) argued that conservative managers are reactive, risk-averse and not innovative, whereas entrepreneurial managers are proactive, innovative, and risk-loving/taking. Therefore, propensity to take calculated risks determines to some extent predicts entrepreneurial behaviours and success (Keh, Foo, & Lim, 2002; Zwang, Wang, & Owen, 2015). Further, self-efficacy believes also predicts ECO (Boyd & Vozikis, 1994; Lekoko, Rankhumise, & Ras, 2012). The more entrepreneurially efficacious an individual is, the more likely he is to engage in ECO (Solesvik, Westhead, Matlay & Parsyak, 2013; Yarima & Hashim, 2016). Recently, EE is an important influence of ECO (Ebewo, Rugimbana, & Shambare, 2017; Thompson & Kwong, 2016). This suggests that ECs such as the knowledge of know-who and know-when can be used to foretell entrepreneurship among students (Bell, 2016; Sanchez, 2013).

3.2 Entrepreneurial competencies

ECs are transferred through knowledge, attitude, and skills taught that are significant to individuals in an attempt to establish and operate businesses enterprise successfully (Ernest et al., 2015; William Middleton & Donnellon, 2013). EC programmes inculcate in learners certain capabilities such as attitudes, abilities, knowledge, skills, and behaviours that have an impact on a person's enthusiasms to start their entrepreneurial business venture (Brophy & Kiely, 2002). Accordingly, Fayolle and Gailly (2013) mentioned that imparting knowledge of know-who (social skill development) and know-when (intuition and insight) as part of the EC of EE programmes. Previous studies link ECs to knowledge, skills and experiences are competencies associated with the human capital resources of entrepreneurs and influential in the development and continued survival of organisations (Ucbasaran, Wright, Westhead, & Busenitz, 2003). Therefore, entrepreneurs can use their acquired competencies to recognise business opportunities and leverage resources (Sanchez, 2013; Ucbasaran et al., 2003). The competencies learnt relates to general skills, specialist skills, self-reliance skills, and people related kills (Collette, 2013; Nabi, Holden, & Walmsley, 2010).

3.2.1 Know-who Competency

Know-who competency describes skills of social networking (Hoe et al., 2014; Souitaris, Zerbinati, & Al-Laham, 2007). This competency imparts an ability to work together with different stakeholders in the entrepreneurial sphere (Hussain & Hashim, 2015; Nabi et al., 2010). Students must acquire knowledge of interacting and obtaining information from classmates, lecturers, and local entrepreneurs to learn how to create and operate new business ventures (Asghar et al., 2016). For instance, students must be able to obtain information from entrepreneurial lecturers, guest lecturers, colleagues, etc. that will assist them in business formation and management (Asghar et al., 2016; Othman & Nasrudin, 2016).

Hence, know-who competency is a significant part of EC, since new venture creation requires interaction with people significant to the creation, sustainability, and growth of new enterprises (Raichaudhuri, 2005; Souitaris et al., 2007). Therefore, EC instructors are under obligation to institute an entrepreneurial network of relationships with influential business persons and experts that will deliver the correct perspective of ECO through generating business ideas, network development, and team building (Hegarty, 2006).

3.2.2 Know-when Competency

Know-when competency is the knowledge of insights and intuition. This skill encompasses an understanding of the market, timing of the entrepreneurial action, and opportunity and financial costs. Know-when competency instils the knowledge of what time is appropriate to take entrepreneurial activity, what is the most suitable condition for the individual, what is the individual's assessment of the project (Hoe et al., 2014; Othman & Nasrudin, 2016). Entrepreneurs use their insights and intuition to manage business opportunities. Therefore, the teaching of know-when competency is necessary to impart skills of intuition to graduating students it is an appropriate instant to act, to be able to exploit an opportunity that other people ignored (Baron & Ward, 2004; da Costa & Mare, 2016; Shane & Venkataraman, 2000).

However, scholars argued that it is difficult to impart know-when competency to students because know-when competency accrues as a result of entrepreneurs' efforts to start a new business enterprise. Since know-when competency can only be enhanced by evident entrepreneurial experiences, yet, case studies, simulations, and gaming can be used to impart know-when competency to learners (Fayolle, 2008; Nabi et al., 2010). Therefore, know-when competency transfers intuitive skills to act at the correct time. As such, it is desirable to trust one's intuition which can direct an individual exploit an opportunity that has been ignored by others.

3.2.3 Know-who and ECO

Know-who competence refers learning in social networking skills (Nabi et al., 2010; Souitaris et al., 2007). Social network skills (know-who) is necessary for entrepreneurship because "connection" is essential in opportunity exploitation and new venture creation. Networks transferred through practicing entrepreneurs, lecturers, role models, talks, and mentors. Previous studies have linked entrepreneurial career to social network relationships and the presence of entrepreneurial mentors (e.g., Rani, 2016; Abaho, 2013; Nabi et al., 2010; Pruett, 2012; Ragins, Cotton, & Miller, 2000).

In a survey conducted by Eesley and Wang (2014) to examine the character and impact of mentorship on the probability of university students engaging in ECO, a significant positive effect established. Using a controlled field experiment that is longitudinal and randomised, the study assesses persons being mentored by an entrepreneur obtains a different result on EE as against being mentored by non-entrepreneurs with relevant experience in the industry. Findings indicate a substantial positive consequence of entrepreneurial mentors on the rate of entrepreneurship. In Malaysia, Rani (2016) reported a positive effect of mentoring, psychosocial factors, social support, and employment experience on graduate entrepreneurs' quality of entrepreneurship. Results indicate that graduate entrepreneurs have mentors that assist them to acquire and increase their entrepreneurial quality because of having access to successful entrepreneurs.

Likewise, a study conducted by Abaho (2013) reports a positive association of improved curriculum on universities' entrepreneurial values. Findings indicate that students with links to successful entrepreneurs, lecturers, and experiential learning obtain high-level standards of entrepreneurship among students. Equally, scholars exposed to networking opportunities, entrepreneurial marketing tools, and experiential learning activities aspire to be entrepreneurs and strongly impressed about EC (Peltier & Scovotti, 2010). Similarly, Sesen (2013) found that self-efficacy, social network, and an entrepreneurial mindset are more significant than government support in influencing ECO among graduate students.

H1: ECO positively influences Know-who.

3.2.4 Know-when Competency and ECO

Know-when denotes to the knowledge of insights and intuition (Hoe et al., 2014). Previous studies claimed the existence of a relationship between know-when competency (ideas and intuition) and ECO (e.g., Chou, Shen, Hsiao, Hsi-Chi, & Chen, 2014; Pruett, 2012; Robinson & Sexton, 1994). Know-when competency is learned through concrete experience, but can also impart through video case studies, role modelling, simulation, and exercises.

Consequently, internship training effectiveness and its influence on IT tested on 324 students. The efficacy of entrepreneurial internship positively associated with EI (EI) and satisfaction of placement substantially affect the effectiveness of entrepreneurial investment. Hence, the influence pattern and observed association of internship satisfaction on internship effectiveness on entrepreneurial internship effectiveness correlate positively (Chou et al., 2014). Similarly, the influence of EC workshop series tested against the psychological and social aspects of EI of students. Using analysis of variance, linear modelling, and t-tests results indicate that participation and entrepreneurial dispositions are inclined to intentions and exposure to role models (Pruett, 2012).

Similarly, the effect of participation in EC programme on the perception of feasibility and desirability of starting a business was examined. Changes in the understanding of students enrolled into EC programmes were analysed on the judgment of the feasibility and desirability using 'pre' test, 'post' test, and controlled group research design. The students that participated in the programme reported a significantly higher perception of feasibility

and desirability after completing the plan. Findings support empirical evidence that EC programmes are additional disclosure variables that need to incorporate into entrepreneurial intention models (Peterman & Kennedy, 2003). Given the above, the study hypothesized that:

H2: ECO is significantly influenced by know-when.

4.0 Proposed Framework

The framework below indicates a significant positive association of entrepreneurial competencies (know-who and know-when) and ECO. This implies the influence of the independent variables on the dependent variable, meaning that, the two EC motivates or predicts ECO. In other words, the knowledge of EC comprising of know-who and know-when are significant to entrepreneurial decision and action. Human Capital Theory (HCT) assumes that investment in education is a necessary investment in human resource and that knowledge is an investment that increases the intellectual capacity, quality of life, skills, and efficiency of individuals in the production of useful goods/services (Machlup, 1982). Martin, McNally, and Kay (2013) and Ployhart and Moliterno (2011) posit that Human capital theory envisages that the productivity of individuals with superior knowledge, skills and experiences far outweigh that of individuals with lower level competencies. EC programmes are imparted as education initiatives through HEIs the world over, Nigeria inclusive.

Independent Variables

Dependent Variable

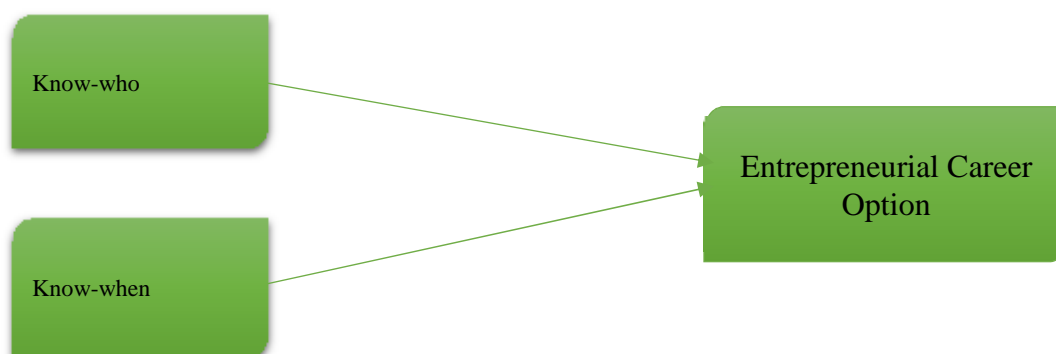


Figure 1: Entrepreneurial competencies and ECO

5. Methodology

5.1 Research Design

The study uses a multistage sampling procedure to select five polytechnics. After that, a sample of 361 students was drawn using stratified random sampling technique. As with most social science studies, quantitative research approach adopted for the study (Sekaran, Robert, & Brain, 2001). Other previous studies also used a quantitative method to examine the relationship of EC and ECO (e.g., Abuzhuri & Hashim, 2017; Hussain & Hashim, 2015; Yarima & Hashim, 2016).

5.2 Population and Sampling Technique

Study population constitute 6043 second year HND students of polytechnics in Nigeria (NBTE, 2017). A sample 361 respondents were selected based on Krijecic and Morgan (1970) criteria of sample determination. The unit of analysis for the study is individual, comprising of the final year higher national diploma (HND II) students of Nigerian polytechnic. Questionnaires were self-administered to collect data from the students. The study achieved a response rate of 84.2 percent which is adequate (Shehu & Mahmood, 2014).

5.3 Measurement of Construct

The variables in this study were measured using 7 points Likert scale from 1, strongly disagree to 7, and strongly agree, in line with previous studies. There are two independent variables (know-who and know-when) in the survey measured against entrepreneurial career option. As regards the dependent variable, 28 measures adapted from the previous works of Drnovsek and Glas (2002), Le Roux (2005), Moy, Luk, and Wright, (2003), and Steenkamp & Van da Merwe (2011). Know-who competency uses 6 item measures adapted from the previous work of Lo (2011). Similarly, know-when competency modified from the prior work of Carlson (2008). In all, 39 items were found useful in measuring the relationship between the study constructs.

6.0 Findings

6.1 Content Validity

The content validity of a study construct means that all the loadings of items in the construct should be high enough to measure the construct they are designed to measure. Factor loadings are used to measure content validity of constructs as recommended by Hair, Andersen, and Tatham (2010) and Chin (1998). In effect, items whose loadings were low on some other constructs deleted. The items load in the study as shown in Table 1 indicate adequate loadings on the respective constructs.

Table 1: Cross-Loadings of Items

Construct	ECO	KWN	KWO
ECO10	0.727	0.422	0.429
ECO15	0.746	0.357	0.446
ECO20	0.754	0.310	0.402
ECO22	0.808	0.409	0.482
ECO23	0.832	0.506	0.492
KWN1	0.523	0.830	0.648
KWN2	0.390	0.820	0.445
KWN3	0.370	0.777	0.456
KWN5	0.348	0.755	0.476
KWO1	0.485	0.500	0.793
KWO2	0.369	0.482	0.755
KWO3	0.400	0.491	0.745
KWO5	0.530	0.543	0.819
KWO6	0.433	0.479	0.733

6.2 Convergent Validity

Convergent validity is a measure of the extent to which items were measuring construct measures the construct (Bagozzi, Yi, & Phillips, 1991; Hair et al., 2010). Items' reliability can be used to measure the convergent validity of a construct. In SmartPLS literature, convergent validity assessed by using items' reliability, composite reliability, and Average Variance Extracted (AVE). A threshold of 0.70-factor loadings, 0.70 composite reliability, and AVE of at least 0.5 is a recommended measure (Bagozzi et al., 1991; Hair et al., 2010). In Table 2, it shows that all the rules exceeded their recommended threshold, as such established that the measurement model has an adequate level of convergent validity.

Table 2: Convergent Validity Analysis Result

Variable	Items	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Entrepreneurial Career Option	ECO10		0.833	0.882	0.600
		0.727			
	ECO15	0.746			
	ECO20	0.754			
	ECO22	0.808			
Know-when	ECO23	0.832	0.810	0.874	0.634
	KWN1	0.830			
	KWN2	0.820			
	KWN3	0.777			
	KWN5	0.755			
Know-who	KWO1	0.793	0.829	0.879	0.592
	KWO2	0.755			
	KWO3	0.745			
	KWO5	0.819			
	KWO6	0.733			

6.3 Discriminant Validity

The extent of the difference between items of one construct from other constructs described as discriminant validity. Discriminant validity in the measurement model is established using the Fornell-Larcker's (1981) criteria. The correlation matrix shown in Table 3 indicate the diagonal element representing the square root of the average variance extracted from the latent constructs. Hence, the correlation matrix indicated on the table underneath illustrates that the absence discriminant validity problem established. All the loadings indicate a value of more than the benchmark of 0.5 (Hair Jr, Hult, Ringle, & Sarstedt, 2016).

Table 3: Correlation Matrix

	Construct	ECO	KWN	KWO
1	Entrepreneurial career option	0.775		
2	Know-when	0.524	0.796	
3	Know-who	0.584	0.650	0.770

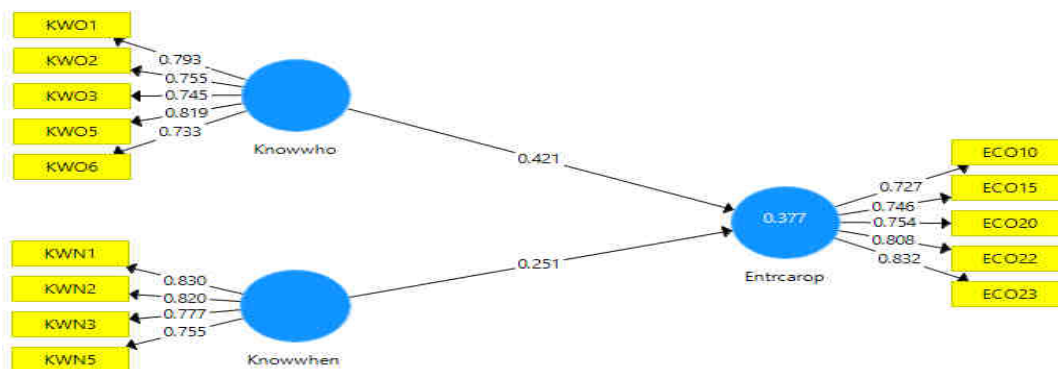


Figure 2. Measurement Model

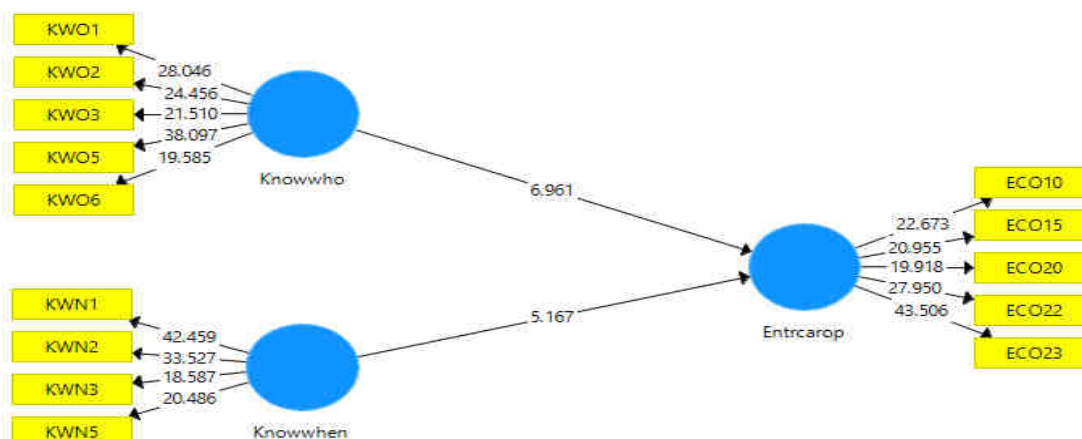


Figure 3. Structural Model

Table 4: Hypotheses Testing

Construct	Path Coefficient	Standard Error	STD	T Value	P Value	Decision
Know-when -> ECO	0.251	0.255	0.049	5.167	0.000	Supported
Know-who -> ECO	0.421	0.419	0.060	6.961	0.000	Supported

***: P<0.001, **P<0.01, *P<0.05

6.4 Predictive Relevance of the Model

The model quality is evaluated using cross-validated redundancy values. In SmartPLS-SEM, cross-validated redundancy and cross-validated communality generated by running the blindfolding procedure. Valuation criteria for a model's predictive relevance of an amount of i) 0.35 is substantial; ii) 0.015 is medium; while, iii) 0.02 is regarded as small (Chin, 1998). In this study, the predictive relevance is 0.209. Hence, the model's predictive quality is satisfactory.

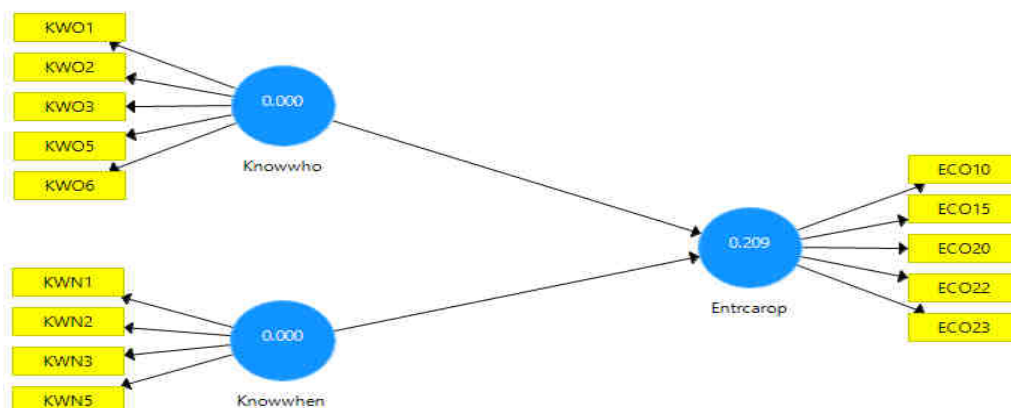


Figure 4. Predictive Relevance

6.5 Goodness of Fit

In PLS-SEM modelling, a standard measure of goodness of fit (GoF) available in most literature is the geometric mean of the AVE and the average R^2 for the endogenous variable, which calculates as $GoF: \sqrt{R^2 \times AVE}$. A goodness of Fit value of less than 0.1 is considered as no fit, while GoF values ranging from 0.1 to 0.25 (small); 0.25 to 0.36 (medium); and value great than 0.36 is a substantial value (Wetzels, Odekerken-Schoder, & Van Oppen, 2009). For this study, a GoF value of 0.175 is within the acceptable threshold level of validity of PLS model based on variance average.

7. Discussions and Implications

The study examined the association of know-who and know-when competencies on entrepreneurial career option among students in Nigeria. The study found direct support for the direct relationship between know-who and entrepreneurial career option. This study was consistent with the previous survey of Abuzhuri and Hashim (2017), Hoe et al. (2014), Hussain and Hashim (2015), and Rani (2016) supporting the assumption that social skills (know-who) and insights and intuitions (know-when) have a significant positive effect on ECO. In this study, findings indicate a considerable positive influence of EC (know-who and know-when) on ECO among polytechnic students in Nigeria. Therefore, students' knowledge of know-who and know-when is significant in entrepreneurial action. In essence, EC programmes designed in such a way as to have an influencing effect on students' ECO.

Consequently, the entrepreneurial curriculum must be altered to reflect more emphasis on practice rather than theory. In essence, the entrepreneurial curriculum of instruction must address issues in line with global best practice in teaching and learning and the effect of globalisation. HEIs must provide sufficient training to EE lecturers to be able to impart the needed EC based on global best practice. In fact, there must be a close collaboration between the ministry of education, the National Board for Technical Education, and Polytechnics/Monotechnics to achieve the lofty objectives of EC programmes.

Equally, cooperation with individuals relevant to entrepreneurial process is as important as entrepreneurial skills. Hence, there must be a healthy relationship between HEIs and local entrepreneurs. Because role models often exist in the local community and are influential in encouraging the students' entrepreneurial self-efficacy position. Guest speakers and role models should enable students to learn through practice and learning evaluated through assignments. In this respect, the pedagogy of imparting entrepreneurial learning designed in such a way as to give more emphasis on case studies, coaching, role-playing, simulations, gaming, where prototype scenarios of entrepreneurial behaviours exhibited. For this, the government must provide sufficient funding to polytechnics concerning EC programmes.

In this study, the influence of EC observed on ECO among on polytechnic students in Nigeria. The paper contributes to knowledge in line with the underlying assumption of the human capital theory that investment in education enables individuals to achieve better living conditions and able to produce better goods and services for public consumption as a result of improved learning and experience. However, this is by no means exhaustive. Future studies may consider EC influence on ECO of students of other countries or regions. Similarly, future research may examine the impact of EC on ECO among graduate students of universities and colleges of education. Equally, more studies are required to examine the association between several dimensions

of ECs and ECO after graduation. Studies need to explore the role of individual and cognitive factors affecting the decision to choose an entrepreneurial career among other career options available. Data may also be collected over an extended period to conduct longitudinal study rather than a cross-sectional study.

References

- Abaho, E. (2013). Entrepreneurial curriculum as an antecedent to entrepreneurial values in Uganda: a SEM model. *Global Advanced Research Journal of Management and Business Studies (ISSN: 2315-5086)*, 2(2), 085-092.
- Abdulrahman, S. (2014). Entrepreneurship education and new venture creation after graduation: An empirical study of school of rural technology and entrepreneurship development (Sorted) Rano Kano State Polytechnic, Northern Nigeria. *Researchjournal's Journal of Entrepreneurship*, 2(5), 1-13.
- Adawo, M. A., & Atan, J. A. (2013). Graduate unemployment in Nigeria: Entrepreneurship and Venture Capital Nexus. *Journal of Economics and Sustainable Development*, 4(9).
- Adesina, O. S. (2013). Unemployment and security challenges in Nigeria. *International Journal of Humanities and Social Science*, 3(7), 146-156.
- Ahmad, S. Z., Jabeen, F., & Khan, M. (2014). Entrepreneurs' choice in a business venture: Motivations for choosing home-stay accommodation businesses in Peninsular Malaysia. *International Journal of Hospitality Management*, 36, 31-40.
- Akhueonkhan, I., Raimi, L., Patel, A. M., & Fadipe, A. O. (2014). Harnessing the potentials of technology incubation centres (TICs) as tools for fast-tracking entrepreneurship development and actualisation of the Vision 20: 2020 in Nigeria. *Humanomics*, 30(4), 349-372.
- Aminu, M. I., Mahmood, R., & Muharram, F. M. (2015). The Intangible Resources and Small Firms' Multilevel Performance: A Partial Least Squares Approach. *Asian Social Science*, 11(16), 187.
- Amire, C. M., Prosper, O. M., & Ese, O. E. (2016). The Role of Entrepreneurship Education in the Achievement of Nigeria's Vision 20: 2020. *International Journal of Innovative Research and Development* || ISSN 2278-0211, 5(5).
- Ashour, S. (2016). Social and business entrepreneurship as career options for university students in the United Arab Emirates: The drive-preparedness gap. *Cogent Education*, 3(1), 1234425.
- Awogbenle, A. C., & Iwuamadi, K. C. (2010). Youth unemployment: Entrepreneurship development programme as an intervention mechanism. *African Journal of Business Management*, 4(6), 831.
- Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organisational research. *Administrative Science Quarterly*, 36(3), 421-458.
- Bakar, R., Islam, M. A., & Lee, J. (2015). Entrepreneurship education: Experiences in selected countries. *International education studies*, 8(1), 88.
- Baron, R. A., & Ward, T. B. (2004). Expanding entrepreneurial cognition's toolbox: Potential contributions from the field of cognitive science. *Entrepreneurship Theory and Practice*, 28(6), 553-573.
- Beeka, B., & Rimmington, M. (2011). Tourism entrepreneurship as a career choice for the young in Nigeria. *Tourism Planning & Development*, 8(2), 215-223.
- Bell, R. (2016). Unpacking the link between entrepreneurialism and employability: An assessment of the relationship between entrepreneurial attitudes and the likelihood of graduate employment in a professional field. *Education+ Training*, 58(1), 2-17.
- Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of EIs and actions. *Entrepreneurship theory and practice*, 18, 63-63.
- Brockhaus, R. H. (1980). Risk taking propensity of entrepreneurs. *Academy of Management Journal*, 23(3), 509-520.
- Brophy, M., & Kiely, T. (2002). Competencies: a new sector. *Journal of European Industrial Training*, 26(2/3/4), 165-176.
- Chin, W. W. (1998). Issues and Opinion on Structural equation modelling. *MIS Quarterly*, 7-14.
- Chou, C. M., Shen, C. H., Hsiao, H. C., & Chen, S. C. (2014). Factors Affecting Entrepreneurial Internship Effectiveness in It Industry: A Structural Equation Modeling. *Review of Industrial Engineering Letters*, 1(1), 36-43.
- Dawson, C., & Henley, A. (2015). Gender, risk, and venture creation intentions. *Journal of Small Business Management*, 53(2), 501-515.
- Douglas, E. & Shepherd, D. (2002). Self-employment as a Career Choice: Attitudes, EIs, and Utility Maximization. *Entrepreneurial Theory and Practice*, 26(3): pp. 81-90.
- Ebewo, P. E., Rugimbana, R., & Shambare, R. (2017). Effects of Entrepreneurship Education on Students' EIs: A Case of Botswana. *Management*, 5(4), 278-289.

- Edwards-Schachter, M., Garc' in-Granero, A., Sanchez- Barrioluengo, M., Pineda, H. Q., and Amara, N., (2015). Disentangling competencies: interrelationships on creativity, innovation and entrepreneurship, *Thinking Skills and Creativity*. <http://dx.doi.org/10.1016/j.tsc.2014.11.006>
- Eesley, C. E., & Wang, Y. (2014). The Effects of Mentoring in Entrepreneurial Career Choice. *Available at SSRN*.
- Ekpoh, U. I., & Edet, A. O. (2011). Entrepreneurship education and career intentions of tertiary education students in Akwa Ibom and Cross River States, Nigeria. *International education studies*, 4(1), 172.
- Ernest, K., Matthew, S. K., & Samuel, A. K. (2015). Towards Entrepreneurial Learning Competencies: The Perspective of Built Environment Students. *Higher Education Studies*, 5(1), 20.
- Farsi, J. Y., Modarresi, M., Motavaseli, M., & Salamzadeh, A. (2014). Institutional Factors Affecting Academic Entrepreneurship: The Case of the University of Tehran. *Economic Analysis*, 47(1-2), 139-159.
- Fatoki, O. O. (2010). Graduate EI in South Africa: motivations and obstacles. *International Journal of Business and Management*, 5(9), 87.
- Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, 53(1), pp.75-93.
- Fayolle, A., & Gailly, B. (2008). From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, 32(7), 569-593.
- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variable and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
- Hair, J. F., Andersen, R. L. & Tatham, R. L. (2010). *Multivariate data analysis* (7th ed). Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Hegarty, C. (2006), "It's not an exact science: teaching entrepreneurship in Northern Ireland", *Education þ Training*, Vol. 48 No. 5, pp. 322-335.
- Henry, C. (2013). Entrepreneurship education in HE: are policymakers expecting too much? *Education+ Training*, 55(8/9), 836-848.
- Hoe, C. H., Keat, O. Y., Ahmad, S., & Hashim, N. (2014). Inclination towards entrepreneurship among community college students in Malaysia.
- Hussain, A. & Hashim, N. (2015). Impact of Entrepreneurial Education on EIs of Pakistani Students. *Journal of Entrepreneurship and Business Innovation*, 2(1), 43-53.
- Idoko, I. F. (2013). The Paradox of Youths Unemployment in an Oil Producing Country. The Lesson from the Nigerian Experience. *International Journal of Business and Management Invention*, 2(4), 74-79.
- Innocent, E. O. (2014). Unemployment rate in Nigeria: Agenda for government. *Academic Journal of Interdisciplinary Studies*, 3(4), 103.
- Islam, S., & Gazipur, B. (2012). Pull and push factors towards small entrepreneurship development in Bangladesh. *Journal of Research in International Business Management*, 2(3), 65-72.
- Israel, K. J., & Johnmark, D. R. (2014). Entrepreneurial mindset among female university students: A study of University of Jos Students, Nigeria. *Chinese Business Review*, 13(5).
- Johannisson, B. (1991). University training for entrepreneurship: Swedish approaches. *Entrepreneurship & Regional Development*, 3(1), 67-82.
- Jones, C., Matlay, H., & Maritz, A. (2012). Enterprise education: for all, or just some? *Education+ Training*, 54(8/9), 813-824.
- Karimi, S., Biemans, H. J., Lans, T., Aazami, M., & Mulder, M. (2016). Fostering students' competence in identifying business opportunities in entrepreneurship education. *Innovations in Education and Teaching International*, 53(2), 215-229.
- Keh, H. T., Foo, M. D., & Lim, B. C. (2002). Opportunity evaluation under risky conditions: The cognitive processes of entrepreneurs. *Entrepreneurship theory and practice*, 27(2), 125-148.
- Kidane, G. M., & Raju, R. S. (2016). Entrepreneurial motivation and determinant factors of the TVET graduate students. *IJAR*, 2(1), 422-428.
- Kind, P., Jones, K., & Barmby, P. (2007). Developing attitudes towards science measures. *International Journal of Science Education*, 29(7), 871-893.
- Kolvereid, L. (2016). Preference for self-employment: Prediction of new business start-up intentions and efforts. *The International Journal of Entrepreneurship and Innovation*, 17(2), 100-109.
- Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of EIs. *Journal of business venturing*, 15(5), 411-432.
- KyrÖ, P., & Ristimäki, K. (2008). Expanding arenas and dynamics of entrepreneurship education. *The Finnish Journal of Business Economics*, 3(2008), 259-265.

- Lekoko, M., Rankhumise, E. M., & Ras, P. (2012). The effectiveness of entrepreneurship education: What matters most?. *African Journal of Business Management*, 65(1), 12023.
- Lourenço, F., Taylor, T. G., & Taylor, D. W. (2013). Integrating “education for entrepreneurship” in multiple faculties in “half-the-time” to enhance graduate entrepreneurship. *Journal of Small Business and Enterprise Development*, 20(3), 503-525.
- Machlup, F. (1982). Issues in the theory of human capital: Education as investment. *The Pakistan Development Review*, 1-17.
- Maina, S. (2014). The role of entrepreneurship education in job creation among youths in Nigeria. *International Letters of Social and Humanistic Sciences*, (15), 87-96.
- Matlay, H. (2008). The impact of entrepreneurship education on entrepreneurial outcomes. *Journal of small business and enterprise development*, 15(2), 382-396.
- Matusik, S. F. (2016). Entrepreneurship, Competition, and Economic Development. *The Antitrust Bulletin*, 61(4), 561-563.
- McStay, D. (2008). An investigation of undergraduate student self-employment intention and the impact of entrepreneurship education and previous entrepreneurial experience. *Theses*, 18.
- Muhammad, A. D., Aliyu, S., & Ahmed, S. (2015). EI among Nigerian University Students. *American Journal of Business Education (Online)*, 8(4), 239.
- Musa, M. Y., & Adewale, R. S. (2015). Effects of entrepreneurship education on the willingness to own personal business among Nigerian university graduates. *European Journal of Academic Research*, 3 (1), 19-30.
- Nabi, G., Holden, R., & Walmsley, A. (2010). Entrepreneurial intentions among students: towards a re-focused research agenda. *Journal of Small Business and Enterprise Development*, 17(4), 537-551.
- Nabi, G., Walmsley, A., Liñán, F., Akhtar, I., & Neame, C. (2016). Does entrepreneurship education in the first year of higher education develop EIs? The role of learning and inspiration. *Studies in Higher Education*, 1-16.
- NPC (2015): Nigerian population commission census, <http://country meters.info/en/Nigeria>
- Nwachukwu, A. C. (2012). The role of entrepreneurship in economic development: The Nigerian perspective. *European Journal of Business and Management*, 4(8), 96.
- Ogbonna, M. N. (2015). Incorporation of entrepreneurship education into tertiary education general studies curriculum: a panacea for restraining youth unemployment in Nigeria. *Journal of Research*, 24(1).
- Olutunla, G. T. (2001). Entrepreneurship for economic development. *Inaugural Lectures Series*, 27, 1-64.
- Ooi, Y. K., & Nasiru, A. (2015). Entrepreneurship Education as a Catalyst for Business Start-Ups: A Study on Malaysian Community College Students. *Asian Social Science*, 11(18), 350.
- Othman, N., & Nasrudin, N. (2016). Entrepreneurship education programs in Malaysian polytechnics. *Education and Training*, 58(7/8), 882-898.
- Peltier, J. W., & Scovotti, C. (2010). Enhancing entrepreneurial marketing education: the student perspective. *Journal of Small Business and Enterprise Development*, 17(4), 514-536.
- Pérez-López, M. C., González-López, M. J., & Rodríguez-Ariza, L. (2016). Competencies for entrepreneurship as a career option in a challenging employment environment. *Career Development International*, 21(3), 214-229.
- Peterman, N. E., & Kennedy, J. (2003). Enterprise education: Influencing students’ perceptions of entrepreneurship. *Entrepreneurship theory and practice*, 28(2), 129-144
- Pihie, Z. A. L., & Akmaliah, Z. (2009). Entrepreneurship as a career choice: An analysis of entrepreneurial self-efficacy and intention of university students. *European journal of social sciences*, 9(2), 338-349.
- Ployhart, R. E., & Moliterno, T. P. (2011). Emergence of the human capital resource: A multilevel model. *Academy of Management Review*, 36(1), 127-150.
- Pruett, M. (2012). Entrepreneurship education: Workshops and EIs. *Journal of Education for Business*, 87(2), 94-101.
- Ragins, B. R., Cotton, J. L., & Miller, J. S. (2000). Marginal mentoring: The effects of type of mentor, quality of the relationship, and program design on work and career attitudes. *Academy of management journal*, 43(6), 1177-1194.
- Raichaudhuri, A. (2005). Issues in entrepreneurship education. *Decision* 32(2): 73-84.
- Raimi, L., Akhuesonkhan, I., & Ogunjirin, O. D. (2015). Corporate Social Responsibility and Entrepreneurship (CSRE): antidotes to poverty, insecurity and underdevelopment in Nigeria. *Social Responsibility Journal*, 11(1), 56-81.
- Rani, S. H. B. A. (2016). The Influence of Psychosocial Factors on Entrepreneurial Quality among Graduate Entrepreneurs. *Procedia-Social and Behavioral Sciences*, 219, 620-626.
- Robinson, P. B., & Sexton, E. A. (1994). The effect of education and experience on self-employment success. *Journal of Business Venturing*, 9(2), 141-156.
- Rosique-Blasco, M., Madrid-Guijarro, A., & García-Pérez-de-Lema, D. (2016). Entrepreneurial skills and socio-cultural factors: An empirical analysis in secondary education students. *Education+ Training*, 58(7/8), 815-831.

- Roy, R., Akhtar, F., & Das, N. (2017). EI among science & technology students in India: extending the theory of planned behaviour. *International Entrepreneurship and Management Journal*, 1-29.
- Sánchez, J. C. (2011). University training for entrepreneurial competencies: Its impact on intention of venture creation. *International Entrepreneurship and Management Journal*, 7(2), 239-254.
- Sanchez, J. C. (2013). The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of Small Business Management*, 51(3), 447-465.
- Sánchez, J. C. (2013). The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of Small Business Management*, 51(3), 447-465.
- Sekaran, U., Robert, Y. C., & Brain, L. D. (2001). Applied business research.
- Sesen, H. (2013). Personality or environment? A comprehensive study on the EIs of university students. *Education and Training*, 55(7), 624-640.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review*, 25(1), 217-226.
- Sheriff, M., & Muffatto, M. (2015). The present state of entrepreneurship ecosystems in selected countries in Africa. *African Journal of Economic and Management Studies*, 6(1), 17-54.
- Shook, C. L., Priem, R. L., & McGee, J. E. (2003). Venture creation and the enterprising individual: A review and synthesis. *Journal of Management*, 29(3), 379-399.
- Sondari, M. C. (2014). Is Entrepreneurship Education Really Needed? Examining the Antecedent of Entrepreneurial Career Intention. *Procedia-Social and Behavioral Sciences*, 115, 44-53.
- Souitaris, V., Zerbini, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise EI of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566-591.
- Sternberg, R. J. (1999). Handbook of creativity. Cambridge University Press.
- Stevenson, L. (2011). Assessment of the environment for the development of women's entrepreneurship in Cameroon, Mali, Nigeria, Rwanda, and Senegal.
- Stevenson, Lois, Daoud, Yousef, Sadeq, Tareq and Tartir, Alaa (2010) Global entrepreneurship monitor: GEM-MENA regional report 2009 (the Middle East and North Africa). International Development Research Centre, Cairo, Egypt.
- Ulvenblad, P., Berggren, E., & Winborg, J. (2013). The role of entrepreneurship education and start-up experience for handling communication and liability of newness. *International Journal of Entrepreneurial Behavior & Research*, 19(2), 187-209.
- Wang, D., Liu, D., & Lai, C. (2012). Expansion of higher education and the employment crisis: policy innovations in China. *On the Horizon*, 20(4), 336-344.
- Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modelling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS Quarterly*, 177-195.
- Williams-Middleton, K., & Donnellon, A. (2014). Personalizing entrepreneurial learning: a pedagogy for facilitating the know why. *Entrepreneurship Research Journal*, 4(2), 167-204.
- Yarima, Y.A., & Hashim, N. (2016). Influence of entrepreneurial self-efficacy on the relationship between entrepreneurship education and entrepreneurial career option. *European journal of Business and Management*, 8(29), pp. 77-84.
- Z. Solesvik, M., Westhead, P., Matlay, H., & N. Parsyak, V. (2013). Entrepreneurial assets and mindsets: benefit from university entrepreneurship education investment. *Education+ Training*, 55(8/9), 748-762.
- Zhang, P., Wang, D. D., & Owen, C. L. (2015). A study of EI of university students. *Entrepreneurship Research Journal*, 5(1), 61-82.
- Zhou, M., & Xu, H. (2012). A review of entrepreneurship education for college students in China. *Administrative Sciences*, 2(1), 82-98