

**Volume 21, Special Issue****Print ISSN: 1098-8394;****Online ISSN: 1528-2651**

# **ENTREPRENEURIAL ORIENTATION AND INTENTION: IMPACT OF ENTREPRENEURIAL ECOSYSTEM FACTORS**

**Samuel O Olutuase, University of the Western Cape**  
**Pradeep Brijlal, University of the Western Cape**  
**Bingwen Yan, Cape Peninsula University of Technology**  
**Elizabeth Ologundudu, University of Jos**

## **ABSTRACT**

*In view of stimulating entrepreneurial drive for economic gains, it is pertinent to empirically unravel what entrepreneurial ecosystem variables significantly variate entrepreneurial orientation and intention. Within relevant theoretical postulations, this article aimed at determining the amount of variation in entrepreneurial orientation and intention as caused by entrepreneurial ecosystem factors over time. The key entrepreneurial ecosystem factors examined include: business protection; approval of reference people; state of infrastructure that supports intention; ease of accessing financial resources; friendly economic policies; and increase in technology. The study used a cross-sectional survey design following a quantitative approach. Using the simple random technique, data were collected from 191 university graduates via a 20-item questionnaire. Data were analysed using paired sample t-test and structural equation modelling. Findings show that there is significant variation in entrepreneurial orientation and intention which is directly or indirectly attributable to the uncontrolled interaction among entrepreneurial ecosystem variables such as approval of reference people; increase in technology; business protection, etc. This variation is however context-dependent. These findings suggest the need to create conducive entrepreneurial ecosystem to complement entrepreneurship education. It is therefore recommended that policy makers must be deliberate at creating complementary entrepreneurial ecosystem in the developing economy context, improve business protection for nascent entrepreneurs; ease the access to financial resources for entrepreneurial graduates; improve state of infrastructure needed for entrepreneurial drive, amongst others. In addition, academic planners should expand the focus of entrepreneurship education curriculum to include how to strategically deal with ecosystem factors that could significantly impact on entrepreneurial action.*

**Keywords:** Entrepreneurial Orientation, Entrepreneurial Intention, Entrepreneurship Education, Entrepreneurial Ecosystem, Entrepreneurial Activities, Entrepreneurial Action.

## **INTRODUCTION**

Since 2010, there has been a slow but growing scholarly interest in entrepreneurial ecosystems, vis-à-vis the role of entrepreneurship education. One possible reason for this increasing interest is an attempt to prove the worth of the proliferated entrepreneurship programs

being offered within the context of entrepreneurial ecosystem (Isenberg, 2011b; Kshetri, 2014; Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011; Mat, Maat & Mohd, 2015).

The shift from trait and demographic perspectives has birthed the cognitive views on the impact of entrepreneurship education (Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011 and Wu, 2009). The cognitive literature argues that entrepreneurship education stimulates both entrepreneurial orientation and intention in individuals which makes them more malleable to behave or act entrepreneurially at various levels over time. However, Fayolle, Gailly & Lassas-Clerc (2006) conceptions make it reasonable to assume that time lag allows other external factors play significant role in shaping or reshaping previously formed entrepreneurial intention and orientation of individuals.

Although empirical study showed that entrepreneurship education impacts on individuals' intention, Fayolle, Gailly & Lassas-Clerc (2006) maintains that it is highly uncertain this impact would be sustainable over time. In consonance with their uncertainty, Fayolle, Gailly & Lassas-Clerc (2006) alluded to literature and empirical evidences by further asserting that young graduates' orientation and intention towards entrepreneurship are also influenced by certain environmental factors. These factors have been vividly captured by Isenberg (2011b) as entrepreneurial ecosystem variables.

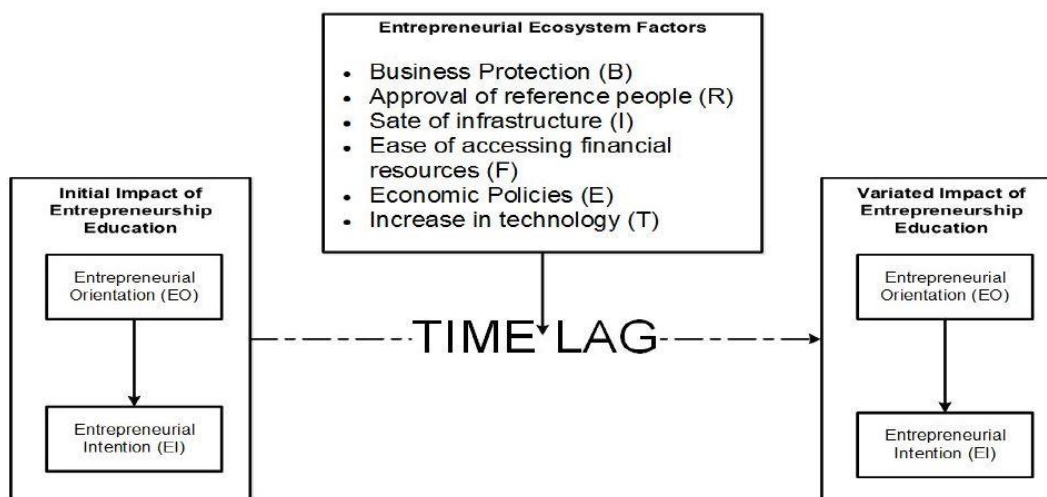
This study focused on Nigeria in order to explore the usefulness and veracity of entrepreneurship education within the context of entrepreneurial ecosystem. In 2007, entrepreneurship education was introduced into Nigerian higher education curriculum as a compulsory module with a view to tackling graduate unemployment. In 2003, the graduate unemployment rate stood at 25.6 percent; but rose to 40.3 percent in 2009 leaving nearly 400,000 fresh graduates unemployed on annual basis. According to statistics, it is extremely alarming to know that 2.5 million graduates in Nigeria were unemployed as at 2008. While it was hoped that sporadic spread of entrepreneurship education will at least, decelerate the rising graduate unemployment by means of graduate entrepreneurship, the reverse is the case. In particular, it was claimed that, increasing rate of graduate unemployment still persists despite the implementation of the entrepreneurship policy by the Higher education Institutions (HEIs) in Nigeria. Recent figures published by the National Bureau of Statistics (NBS) show that youth unemployment (including graduates) stood at 52.65 percent at the end of the third quarter of 2017. It is also revealed that 2.9 million graduates were estimated to have lost their jobs between 2015 and 2016, thereby increasing unemployment. Besides being alarming, this situation raises puzzling questions about the socio-economic import of entrepreneurship education in, especially developing economy, like Nigeria. Three of such critical questions include:

- a) What was the impact of the formed entrepreneurial intention and orientation of graduates, whose intention and orientation have been shaped by undergoing entrepreneurship education while students?
- b) Why investing resources in entrepreneurship education if entrepreneurial intention/orientation is seldom translated into entrepreneurial actions/drive?
- c) What ecosystem factors have inhibited or reinforced entrepreneurial intention and orientation?

This article therefore aims at determining the nature and amount of variation in the entrepreneurial orientation and intention of graduates having undergone entrepreneurship education program. In addition, the inter-relationships among entrepreneurial ecosystem factors as well as their causal effects on entrepreneurial orientation and intention over time are measured. This paper also demonstrates how entrepreneurial ecosystem could undermine the economic dividends of entrepreneurship education and the need to have a more robust entrepreneurship education strategy that encapsulates entrepreneurial ecosystem factors.

## LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Theoretical conceptions and postulations by authors such as Fayolle, Gailly & Lassas-Clerc (2006); Isenberg (2011b, 2016); Liñán, Rodríguez-Cohard & Rueda-Cantuche (2011) and Mason and Brown (2014) have provided useful framework for further research focusing on the nexus of entrepreneurial ecosystem, orientation and intention. This section of the article articulated recent scholarly thoughts on the links between entrepreneurial ecosystem and entrepreneurial orientation and intention in Figure 1. Against the backdrop of cognitive thought, it is presumed that entrepreneurship education plays a huge role in the formation or at least, activating the consciousness of entrepreneurial orientation and intention in individuals. The theoretical framework in Figure 1 conveys the fact that graduates' entrepreneurial orientation and intention variate over time due to the exogenous influence of entrepreneurial ecosystem factors. This implies that the level of entrepreneurial actions from individuals who have undergone entrepreneurship education is relative to the entrepreneurial ecosystem in which they live and hope to operate.



**FIGURE 1**  
**VARIABILITY OF ENTREPRENEURIAL INTENTION, ORIENTATION WITHIN**  
**ENTREPRENEURIAL ECOSYSTEM**

### Entrepreneurship Education: Source of Entrepreneurial Orientation and Intention

The globally held truism that entrepreneurship is the key to economic prosperity is adjudged a major cause of the sporadic proliferation of entrepreneurship programs (EEP) across the globe since 1990 (Fayolle, Gailly & Lassas-Clerc, 2006; Kuratko, 2005; Liñán, Rodríguez-Cohard & Rueda-Cantuche, 2011; Mat, Maat & Mohd, 2015). The continued proliferation of EEPs may have been sustained on the logic that entrepreneurship education stimulates entrepreneurial orientation and intentions in individuals which increases their propensity to act or behave entrepreneurially over time (Debarliev et al., 2015; Donnellon, Ollila & Williams, 2014; Fayolle and Toutain, 2013; Hattab, 2014; Ismail et al., 2015; Kirby & Ibrahim, 2011; Miranda, Chamorro-Mera, Rubio, 2017; Moberg, 2017).

Entrepreneurial orientation, which could exist at individual, firm and national level, encompasses those attributes that stimulate entrepreneurial propensities. Wickramaratne,

Kiminami & Yagi (2014) and Ismail et al. (2015) model on entrepreneurial orientation includes attributes such as proactiveness, innovativeness and disposition to risk. While Urbano (2006) had earlier identified the need for achievement and internal locus for control as other dimensions for measuring entrepreneurial orientation, Kraus, Meier & Niemand (2016) added that opportunity recognition or seeking is a further dimension of entrepreneurial orientation. However, Kraus, Meier & Niemand (2016) challenged the innovative dimension arguing that it is distinct to entrepreneurial orientation. It is plausible to say that the dividing line between entrepreneurial orientation and innovativeness is negligible until further empirical evidences.

Ismail et al. (2015) suggest that entrepreneurial orientation is needed in addition to entrepreneurial orientation in order to foster entrepreneurial activities in an economy. Entrepreneurial intention can be defined as a state of mind which potentially fosters entrepreneurial action/behaviours in individual (Hattab, 2014). Entrepreneurial intention is commonly measured on a Likert using dimensions such as: intention to start up a business; intention to take over/grow family business; intention to develop further a business idea being currently nursed or intention to become an entrepreneur (Rueda, Moriano & Liñan, 2015; Thompson, 2009; Zhao, Seibert & Hills, 2005).

The general consensus among scholars in the field of entrepreneurship research is that entrepreneurship education plays a major role in shaping entrepreneurial orientation and intention of individuals (Davey, Hannon & Penaluna, 2016). This consensus is a reason for the upward trend in the investment into the ever-increasing number entrepreneurship programs worldwide. This investment pattern is anchored on the logic that the more people are exposed to entrepreneurship education; the more entrepreneurial activities will result. Debates on entrepreneurial intention and actions do not get acted upon immediately and thus, with the passage of time, both entrepreneurial intention and orientation is altered by other contextual factors (Fayolle, Gailly & Lassas-Clerc, 2006). It is in view of this that Kirkwood, Dwyer & Gray (2014) suggests that future research on evaluating the value of entrepreneurship education programs should be based within the frame of contextual factors such as culture, economic or social variables. The suggestion is in recognition of the fact that contextual factors play significant role in shaping one's orientation and intention towards entrepreneurial action/behaviour, making entrepreneurial orientation and intention to vary over time. In other words, there is the need for more and more empirical studies in the field of entrepreneurship education to generate convincing evidences on the impact of time lag on already shaped entrepreneurial orientation and intention. On this premise, the first hypothesis is formulated:

*H1: Entrepreneurial Orientation and Intention resulting from entrepreneurship education significantly changes over time.*

## **Nature of Entrepreneurial Ecosystem**

Owing to time lag, it is plausible to contextualize the factors that variate entrepreneurial orientation and intention. These contextual factors, which could be social, political, economic and technological, are vividly captured as entrepreneurial ecosystems variables by Isenberg (2011a, 2011b, 2016). In this article, we conceptualize entrepreneurial ecosystem as uncontrolled exogenous variables which, through multi-dimensional interaction, act as inhibitors or facilitators to entrepreneurship within a given economy, territory or region (Isenberg, 2016; Kshetri, 2014; Mack and Mayer, 2016). Some of the variables include: physical and legal infrastructure; entrepreneurship-approving culture; financial services and resources; leadership; government

institutions and regulatory policies; economic variables such tax and inflation indices; level of technology diffusion; support organizations and educational institutions (Mack and Mayer, 2016; Roundy, Brockman & Bradshaw, 2017).

As a virtuous cycle, the variables of an entrepreneurial ecosystem could be reinventing thereby making the entire ecosystem self-sustaining (Isenberg, 2016). For example, culture is considered a crucial element of entrepreneurial ecosystem (Nadgrodkiewicz, 2013). If culture promotes entrepreneurial pursuit leading to entrepreneurial success, then the entrepreneurial culture will be up-scaled in the long run thereby sustaining the tempo of entrepreneurial ecosystem.

Another important nature of entrepreneurial ecosystem is that the variables that make up the ecosystem interact with one another. Contrary to the impression derived from Isenberg's (2011a & 2011b) model, variables in the entrepreneurial ecosystem interact in an inter-dependent manner (Mack and Mayer, 2016). Although Isenberg (2016) acknowledged the multi-dimensional causality among the ecosystem variables, Mack and Mayer (2016) suggest further empirical investigation that would provide deeper understanding of interdependencies among the ecosystem variables is needed. The relative importance of entrepreneurial ecosystem variables over time also suggests that these variables do not have a fixed value from context to context and time to time (Isenberg, 2011a; Mack and Mayer, 2016 and Roundy, Brockman & Bradshaw, 2017), implying that in every context and at any given time, certain economic, cultural and institutional variables could act differently as facilitators or inhibitors of entrepreneurship.

It is also pertinent to note that factors that make up an entrepreneurial ecosystem behave in a manner that, according to Isenberg (2016), exhibits an ecosystem with no central control. This implies that intention and orientation towards entrepreneurship could accrue multiple sources from inter-dependently workings of entrepreneurial ecosystem variables. Lack of central control could also reflect in varied interactions among the entrepreneurial ecosystem factors. It is against this backdrop the following hypothesis is formulated:

*H2: Ecosystem factors interact in uncontrolled manners causing the entrepreneurial environment to be dynamic.*

Taking cognizance of the inter-entrepreneurial ecosystem factors is extremely important to designing and implementing more effective entrepreneurship programs will foster transition to entrepreneurial economy.

For this study, six entrepreneurial ecosystem factors are considered: business protection in the country (B); approval of reference people like family members and friends (R); state of infrastructure that supports intention (I); ease of accessing financial resources to actualize initial entrepreneurial intention (F); friendly economic policies like tax decisions of government that support the pursuit of entrepreneurial intention (E); and increase in technology (T). These six factors represent the policy, culture, support, finance and market domains of Isenberg's (2011a & 2011b) model.

### **Variability of Entrepreneurial Orientation and Intention by Entrepreneurial Ecosystem factors**

In the foregoing sections, two theoretical assumptions form the foundation for further research into the nexus of entrepreneurial ecosystem, orientation and intention. First, not every entrepreneurial intention eventually becomes entrepreneurial action. Second, entrepreneurial

orientation and intention vary over time. It is therefore logical to investigate the variability of entrepreneurial orientation and intention as caused by entrepreneurial ecosystem. Thus the following hypothesis is formulated:

*H3: Entrepreneurial ecosystem factors significantly variate entrepreneurial orientation and intention over time.*

Considering the importance of entrepreneurial ecosystem in shaping orientation and intention towards entrepreneurial propensities, it is key for countries to build an entrepreneurial ecosystem that is virile (Nadgrodkiewicz, 2013) and resilient (Roundy, Brockman & Bradshaw, 2017). To do this, convincing evidences from empirical researches are required on a time-to-time basis to guide policy and practical directions. The evidences will point out which entrepreneurial ecosystems factors need to be strengthened; which are the areas of priority and changes have occurred in these factors, signalling their relative importance. This strongly eludes to the fact that entrepreneurship within entrepreneurial ecosystem, of which emerging economies like Nigeria is not exempted (Essia, 2012).

## STUDY DESIGN AND METHODOLOGY

The cross-sectional survey design following a quantitative approach was adopted for this study. The choice of a cross-sectional survey was motivated by two reasons: firstly, post-entrepreneurship programs' evaluations aimed at documenting the impact of entrepreneurship education on students' entrepreneurial orientation and intentions were not available across the higher education institutions up till the time of this study. The second reason is the lack of a database to adequately support the tracking of variation in entrepreneurial orientation and intention. As part of the early efforts to track the variation of entrepreneurial orientation and intention of previous entrepreneurship program students, this study therefore used the cross-sectional survey designed to draw from respondents' careful retrospective reflection about their initial and current entrepreneurial orientation and intention.

### Sample and Data Collection

The target population for this study includes all the graduates from a major Nigerian higher education institution who were undergoing their compulsory national service in a central state in Nigeria. The rationale for selecting this target population includes the fact that these graduates are drawn from all categories of institutions as well as from different parts of the country, representing a rich socio-cultural, economic and educational diversity. Furthermore, the population frame presents a crop of graduates who had undergone an entrepreneurship course with a time lag of 2 to 5 years. A third reason for selecting the population frame was that, the respondents in this population stand at a crucible of taking practical decisions and steps towards a career more than ever in their lifetime. This will determine how many of them are really keen of taking on entrepreneurial career.

Using the simple random technique, a total of 250 graduates was sampled through a simple random technique from a stream of graduates who were undergoing a one-year compulsory national service in a North Central Metropolitan city in Nigeria in 2016. Out of the completed and returned questionnaire, a total of 191 questionnaires through a process of data cleaning, were eventually considered valid for analysis.

A self-administered questionnaire was used to collect data. Respondents were duly briefed about the objectives of the study and informed consent was obtained before voluntarily participating in the study. For internal consistency reliability, the questionnaire was tested using the Split-half method. The split-half estimate computed via Cronbach's alpha yielded a score of 0.874 which is acceptable (Gliem & Gliem, 2003).

Out of a total of 191 valid respondents, 89 were female graduates (representing 47%) while 102 were male graduates (representing 53%). 93 graduates were (about 49%) aged between 16 to 25 years, where another 95 graduates (representing about 49%) aged between 26 and 35 years. The remaining 3 respondents (representing 2.0%) were aged 35 years or above.

## Measurement and Data Analysis

The three major variables involved in this article namely: entrepreneurial orientation, intention and ecosystem factors were measured on a Likert Scale of 1–7. Entrepreneurial orientation was measured using elements such as disposition to risk, enthusiasm towards entrepreneurship and opportunity-seeking disposition (Wickramaratne, Kiminami, Yagi, 2014). Entrepreneurial intention was measured using dimensions such as intention to start business or take over a family business; intention to become an entrepreneur; intention to develop a business idea gained from entrepreneurship class (Rueda, Moriano & Liñan, 2015; Thompson, 2009 and Zhao, Seibert & Hills, 2005). Juxtaposing Isenberg's (2011a, 2011b & 2016) model with Mason and Brown's (2014) thoughts, this article used six dimensions as ecosystem factors. These include: business protection in the country (B); approval of reference people like family members and friends (R); state of infrastructure that supports intention (I); ease of accessing financial resources to actualize initial entrepreneurial intention (F); friendly economic policies like tax decisions of government that support the pursuit of entrepreneurial intention (E); and increase in technology (T).

To test the research hypotheses, two statistical tools were used. Firstly, the paired-sample t-test, a parametric test, was used for determining a significant statistical difference between the initial and current entrepreneurial orientations and intentions of graduates. The test was carried out via Statistical Package for Social Sciences (SPSS) version 24. As required, the data which were drawn from a random sample were normally distributed and excluded outliers (Hinkle, Wiersma & Jurs, 2003). Secondly, the structural equation model was used to measure the interaction among ecosystem factors and the dimensional causal effects they have on entrepreneurial intention and orientation of individuals (Kline, 2012). SPSS Amos version 24 was used develop the structural equation model. It was critical that the steps taken in performing a structural equation model fits the data (Cheung and Rensvold, 2002; Hooper, Coughlan & Mullen, 2008; Moss, 2009 and Wothke, 2010).

## RESULTS AND FINDINGS

### Model Testing

To obtain a fitted structural modelling test, the following fit indices were employed: Relative Chi-Square ( $\chi^2/df$ ); Comparative Fit Index (CFI), Incremental Fit Index (IFI), Root Mean Square Error of Approximation (RMSEA) and PCLOSE. All indices indicate the structural model's goodness-of-fit at:  $\chi^2/df=2.46$  ( $\leq 3.0$  for  $n < 200$ ); CFI=0.953 ( $\geq 0.90$ ); IFI=0.955 ( $\geq$

0.90); RMSEA=0.78 ( $\leq 0.80$ ); and PCLOSE=0.066 ( $>0.05$ ). These indices confirmed that the model fits the data collected for this study (Hooper, Coughlan & Mullen, 2008 and Moss, 2009).

*H1: Variation in Entrepreneurial Orientation and Intention*

For the respondents sampled, there was a time lag of two to three years between the time they attended an entrepreneurship education program and the time they were surveyed. Six dimensions were used to measure the entrepreneurial orientation and intention of graduates reflecting two points. The paired difference results are presented in Tables 1 and 2. From the results, we can say that all the parameters used to measure the time difference in entrepreneurial orientation and intention are significantly correlated except for disposition to risk ( $r=0.045$ ,  $p=0.536$ ). However, enthusiasm at the initial time and later time is weakly and negatively correlated ( $r=-0.277$ ,  $p<0.001$ ). Initial and current intention to develop a business idea ( $r=0.39$ ,  $p<0.001$ ); to start or take over business ( $r=0.418$ ,  $p<0.001$ ); as well as the initial and current orientation towards to seeking entrepreneurial opportunities ( $r=0.181$ ,  $p=0.012$ ) are all weakly and positively correlated. Initial and current intention to becomes an entrepreneur ( $r=0.587$ ,  $p<0.001$ ) is the only parameter that is strongly and positively correlated. On the overall, initial and later entrepreneurial orientation are not significantly correlated ( $r=-0.024$ ,  $p=0.745$ ) whereas initial and later entrepreneurial intention are strongly and positive correlated ( $r=0.516$ ,  $p<0.001$ ).

<b>Variables</b>	<b>N</b>	<b>Correlation (r)</b>	<b>P value</b>
Enthusiasm towards entrepreneurship	191	-0.277	0.000
Intention to develop a business idea	191	0.39	0.000
Intention to become entrepreneur	191	0.587	0.000
Intention to start business/take over family business	191	0.418	0.000
Positive disposition to risk	191	0.045	0.536
Seeking entrepreneurial opportunities	191	0.181	0.012
Entrepreneurial Orientation	191	-0.024	0.745
Entrepreneurial Intention	191	0.516	0.000

From Table 2, the results show that there was a significant average difference between initial and later: enthusiasm towards entrepreneurship ( $t_{190}=11.704$ ,  $p<0.001$ ); intention to develop a business idea ( $t_{190}=-2.002$ ,  $p<0.047$ ); intention to become an entrepreneur ( $t_{190}=-2.788$ ,  $p<0.006$ ); intention to start or take over family business ( $t_{190}=-8.747$ ,  $p<0.001$ ); disposition towards risk-taking ( $t_{190}=9.59$ ,  $p<0.001$ ); orientation towards seeking entrepreneurial opportunities ( $t_{190}=4.246$ ,  $p<0.001$ ). On the overall, initial entrepreneurial orientation significantly differ from the later entrepreneurial orientation ( $t_{190}=10.742$ ,  $p<0.001$ ); similarly, initial and later entrepreneurial intention differs significantly ( $t_{190}=-6.189$ ,  $p<0.001$ ).

Furthermore, the results in Table 2 show that on the average, entrepreneurial orientation of graduates declined by 1.618 over time and that is significant compared to the upper boundary of 1.1915. Reverse is the case in entrepreneurial intention as the results show later intention towards entrepreneurship was on the average higher than the initial intention by 0.728. This is however very small compared to upper boundary of -0.496.



Variables	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	P value
				Lower	Upper			
Enthusiasm towards entrepreneurship	2.44	2.881	0.208	2.029	2.851	11.704	190	0
Intention to develop a business idea	-0.298	2.06	0.149	-0.592	-0.004	-2.002	190	0.047
Intention to become entrepreneur	-0.325	1.609	0.116	-0.554	-0.095	-2.788	190	0.006
Intention to start business/take over family business	-1.267	2.002	0.145	-1.553	-0.981	-8.747	190	0
Positive disposition to risk	1.66	2.392	0.173	1.318	2.001	9.59	190	0
Seeking entrepreneurial opportunities	0.743	2.42	0.175	0.398	1.089	4.246	190	0
Entrepreneurial Orientation	1.618	2.081	0.151	1.321	1.915	10.742	190	0
Entrepreneurial Intention	-0.728	1.625	0.118	-0.96	-0.496	-6.189	190	0

*H2: Interaction among Entrepreneurial Ecosystem Factors.*

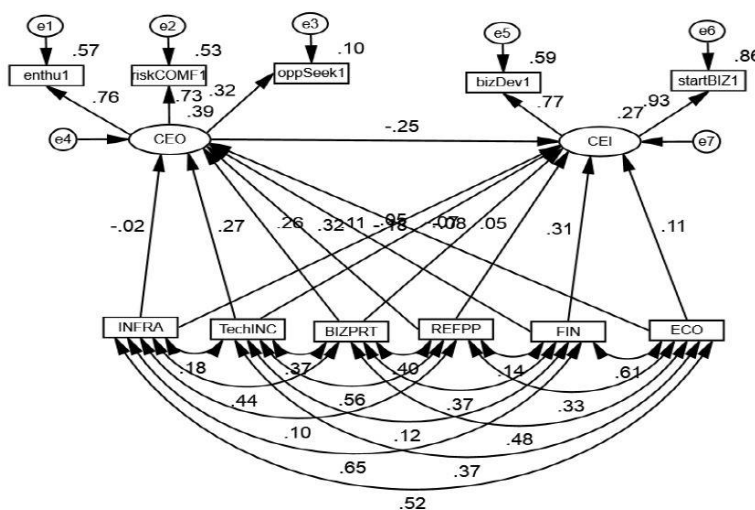
Within the theoretical postulations advanced by Isenberg (2011b & 2016) and Mason and Brown (2014), it was hypothesized that ecosystem factors interact in uncontrolled manners causing the entrepreneurial environment to be dynamic. To test this hypothesis as well as the subsequent one, a structural model was developed as earlier stated. In the structural model, six ecosystems factors that were examined include: business protection (B); approval of reference people (R); economic conditions (E); easy access to financial services (F); state of infrastructure (I); and increase in technology (T). All six factors were correlated to determine the nature and strength of interaction among. The results are presented in Table 3. The results show that all correlated ecosystems factors significantly interact in a positive manner except for infrastructure and reference people ( $r=0.096$ ,  $p=0.187$ ); increased in technology and easy access to financial services ( $r=0.123$ ,  $p=0.093$ ); and reference people and finance ( $r=0.138$ ,  $p<0.059$ ). These results demonstrate the fact the behaviour of a factor in an entrepreneurial ecosystem is not static and not the same towards every other factor.

Variables	Estimate	S.E.	Remark
I <--> T	0.175	0.017	Significant
I <--> R	0.096	0.187	Not significant
I <--> F	0.650	***	Significant
T <--> R	0.560	***	Significant
T <--> F	0.123	0.093	Not significant
R <--> F	0.138	0.059	Not significant
I <--> B	0.440	***	Significant
T <--> B	0.372	***	Significant
R <--> B	0.396	***	Significant

F <--> B	0.373	***	Significant
I <--> E	0.517	***	Significant
T <--> E	0.366	***	Significant
R <--> E	0.333	***	Significant
F <--> E	0.608	***	Significant
B <--> E	0.484	***	Significant
*** means that $p < 0.001$			

H3: Entrepreneurial Ecosystem factors varying Entrepreneurial Orientation and Intention.

Against the backdrop contextual influence, a third hypothesis was stated to test the effect of entrepreneurial ecosystem factors on varied entrepreneurial orientation and intention over time. To achieve this, the standardized total effects along causal paths in the model were estimated and the results are shown in Figure 2 and presented in Table 4. From the results we can say that: increase in technology ( $r^2=0.267$ ,  $p=0.004$ ), reference people (in other words, culture) ( $r^2=0.32$ ,  $p<0.001$ ); and business protection ( $r^2=0.256$ ,  $p=0.006$ ) are three entrepreneurial ecosystem factors that significantly impact a positive effect on the variation of entrepreneurial orientation and intention. Additionally, approval of reference people (culture) is one important factor that variates entrepreneurial orientation and intention most. The results further show that none of the entrepreneurial ecosystem factors significantly impact on entrepreneurial intention directly. However, the variation of entrepreneurial orientation by these ecosystem factors caused a significant negative effect in entrepreneurial intention ( $r^2=-0.245$ ,  $p=0.038$ ). This implies that a 100 percent variation in entrepreneurial orientation will lead to significant decline of 25 percent in entrepreneurial intention.



**FIGURE 2**  
**STRUCTURAL EQUATION MODEL RESULTS SHOWING CORRELATION AND**  
**EFFECTS OF ENTREPRENEURIAL ECOSYSTEM FACTORS**

<b>Path</b>	<b>Estimate</b>	<b>P</b>	<b>Remark</b>
CEO <--- I	-0.02	0.840	Not significant
CEO <--- T	0.267	0.004	Significant
CEO <--- R	0.32	***	Significant
CEO <--- F	-0.181	0.089	Not significant
CEO <--- B	0.256	0.006	Significant
CEO <--- E	-0.077	0.455	Not significant
CEI <--- I	0.114	0.257	Not significant
CEI <--- T	-0.018	0.604	Not significant
CEI <--- B	-0.135	0.429	Not significant
CEI <--- R	-0.033	0.625	Not significant
CEI <--- F	0.356	0.004	Not significant
CEI <--- E	0.131	0.255	Not Significant
CEI <--- CEO	-0.245	0.038	Significant

\*\*\* means that  $p < 0.001$

### Summary of Findings

The results yielded interesting findings that support the three hypotheses as summarized in Table 5. From the analyses, it is evident that entrepreneurial intention and orientation ‘wane or wax’ strong over time. Furthermore, the variation in entrepreneurial orientation and intention is directly or indirectly attributable to the uncontrolled interaction among entrepreneurial ecosystem variables such as approval of reference people; increase in technology; business protection, etc.

<b>Hypothesis</b>	<b>Results</b>
<i>H1</i> : Entrepreneurial orientation and intention resulting from entrepreneurship education significantly changes over time	Supported (for both EO and EI)
<i>H2</i> : Ecosystem factors interact in uncontrolled manners causing entrepreneurial environment to be dynamic	Supported fully
<i>H3</i> : Entrepreneurial ecosystem factors significantly variate entrepreneurial orientation and intention directly or indirectly over time	Partially Supported

### DISCUSSION, CONCLUSION AND FURTHER STUDIES

The findings of this study show strong evidence of variation of entrepreneurial orientation and intention. This empirical evidence justifies the theoretical postulations on variation of entrepreneurial intention and orientation by Debarliev et al. (2015); Donnellon, Ollila & Williams (2014); Fayolle & Toutain (2013); Hattab (2014); Ismail et al. (2015); Kirby & Ibrahim (2011); Miranda, Chamorro-Mera & Rubio (2017) and Moberg (2014). As suggested by Fayolle, Gailly, Lassas-Clerc (2006), this study provides an empirical evidence to support the assertion that entrepreneurial orientation and intention as initially shaped by entrepreneurial education is not sustainable over time. Time lag variation in entrepreneurial orientation and

intention has led to research focus on entrepreneurial action, based on the theory of entrepreneurial event. This article therefore affirms the scholarly debate that calls for strategic rather than spurious entrepreneurship education programs and policies.

A strategic entrepreneurship education program and policy would of necessity be needing input from empirical evidences showing which strongly correlated entrepreneurial ecosystem factors significantly variate entrepreneurial orientation and intention. As a key finding of this study, some factors directly or indirectly affect orientation and intention towards entrepreneurship whereas some do not significantly cause variation. For instance culture is considered one of the critical elements of an entrepreneurial ecosystem (Nadgrodkiewicz, 2013). The evidence emanating from the results of this study attest to the fact that culture is a critical component that determines level of entrepreneurial action within a context. As stated by Ajzen (1991), the approval of reference people like family members and friends, plays a significant role in an individual's entrepreneurial propensities. As a subjective norm, the extent of approval from reference people gives impetus to entrepreneurial drive, therefore determining whether orientation and intention will translate into entrepreneurial action. Although in one of the several attempts to validate Ajzen (1991)'s theory of planned behaviour, Rueda, Moriano & Liñan (2015) recently reported a weak impact of reference people on entrepreneurial intention.

Despite the commonly reported empirical evidences showing strong and significant impact of entrepreneurship education on entrepreneurial orientation (EO) and intention (EI), this article shows that EO and EI can be potentially be varied over time due to influences of contextual factors that form the core of entrepreneurial ecosystem. While inter-entrepreneurial ecosystem variables behave multi-dimensionally, it is equally necessary to note that some factors tend to play more important role in the variation of entrepreneurial intention and orientation at any given point in time. The relative importance of the factors suggests shift areas of priorities for formulating workable entrepreneurial policies. Furthermore, the study has also demonstrated that entrepreneurial ecosystem elements are crucial to translating entrepreneurial intention formed through entrepreneurship education into entrepreneurial actions. Therefore, it is incumbent on all stakeholders, principally the government, to create and sustain an ecosystem that not only support but stimulates entrepreneurship.

It is pertinent to however, note that this study did not provide for techniques for overcoming the bias of feelings and memory retrieval that may have influenced the responses of participants, which formed the data used for analyses. On this note, it is recommended that further empirical studies in this field should develop methodological design that would elicit deeper reflections on entrepreneurial intention and orientation of individuals and how these have evolved over time. In summary, this research contributes to the theory of planned behaviour and particularly, the entrepreneurial ecosystem framework for complementing the impact of entrepreneurship education.

## REFERENCES

- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50, 211.
- Cheung, G.W. & Rensvold, R.B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modelling*, 9(2), 233-255.
- Davey, T., Hannon, P. & Penaluna, A. (2016). Entrepreneurship education and the role of universities in entrepreneurship. *Industry and Higher Education*, 30(3), 171-182.
- Debarliev, S., Janeska-iliev, A., Bozhinovska, T & Ilieva, V. (2015) Antecedents of entrepreneurial intention: Evidence from Republic of Macedonia. *Business and Economic Horizons*, 11(3), 143-161.

- Donnellon, A., Ollila, S. & Williams, M.K. (2014) Constructing entrepreneurial identity in entrepreneurship education. *The International Journal of Management Education*, 12(3), 490-499.
- Essia, U. (2012) Entrepreneurial culturing of formal education programmes in Nigeria. *Journal of Sustainable Society*, 1(2), 52-62.
- FayoIle, A. & Toutain, O. (2013). Four educational principles to rethink ethically entrepreneurship education. *Revista de Economia Mundial*, 35, 165-176.
- FayoIle, A., Gailly, B. & Lassas-Clerc, N. (2006) Assessing the impact of entrepreneurship education programmes: A new methodology. *Journal of European Industrial Training*, 30(9), 701-720.
- Gliem, J.A. & Gliem, R.R. (2003) Calculating, interpreting and reporting cronbach's alpha reliability coefficient for likert-type scales. *Midwest Research to Practice Conference in Adult, Continuing and Community Education*, 82-88.
- Hattab, H.W. (2014). Impact of entrepreneurship education on entrepreneurial intentions of university students in Egypt. *The Journal of Entrepreneurship*, 23(1), 1-18.
- Hinkle, D.E., Wiersma, W. & Jurs, S.G. (2003). *Applied statistics for the behavioural sciences*.
- Hooper, D., Coughlan, J. & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Isenberg, D. (2011a). How to foment an entrepreneurial revolution. *The Babsos Entrepreneurship Ecosystem Project*, (781), 7.
- Isenberg, D. (2011b). The entrepreneurship ecosystem strategy as a new paradigm for economic policy: Principles for cultivating entrepreneurs. *The Babsos Entrepreneurship Ecosystem Project*, 1(781), 1-13.
- Isenberg, D. (2016). Applying the ecosystem metaphor to entrepreneurship. *The Antitrust Bulletin*, 61(4), 564-573.
- Ismail, K., Anuar, M.A., Omar, W.Z.W., Aziz, A.A., Seohod, K. & Akhtar, C.S. (2015). Entrepreneurial intention, entrepreneurial orientation of faculty and students towards commercialization. *Procedia-Social and Behavioural Sciences*, 181, 349-355.
- Kirby, D.A. & Ibrahim, N. (2011). Entrepreneurship education and the creation of an enterprise culture: Provisional results from an experiment in Egypt. *International Entrepreneurship and Management Journal*, 7(2), 181-193.
- Kirkwood, J., Dwyer, K. & Gray, B. (2014). Students' reflections on the value of an entrepreneurship education. *The International Journal of Management Education*, 12(3), 307-316.
- Kline, R.B. (2012). Assumptions in structural equation modelling. In: *Handbook of structural equation modelling*, New York, Guilford Press, 111-125.
- Kraus, S., Meier, F. & Niemand, T. (2016). Experimental methods in entrepreneurship research: The status quo. *International Journal of Entrepreneurial Behaviour & Research*, 22(6), 958-983.
- Kshetri, N. (2014). Developing successful entrepreneurial ecosystems : Lessons from a comparison of an Asian tiger and a Baltic tiger. *Baltic Journal of Management*, 9(3), 330-356.
- Kuratko, D.F. (2005). The emergence of entrepreneurship education: Development, trends and challenges. *Entrepreneurship Theory and Practise*, 29(5), 577-598.
- Liñán, F., Rodríguez-Cohard, J.C. & Rueda-Cantuche, J.M. (2011). Factors affecting entrepreneurial intention levels: A role for education. *International Entrepreneurship and Management Journal*, 7(2), 195-218.
- Mack, E. & Mayer, H. (2016). The evolutionary dynamics of entrepreneurial ecosystems. *Urban Studies*, 53(10), 2118-2133.
- Mason, C. & Brown, R. (2014). Entrepreneurial ecosystems and growth oriented entrepreneurship. *OECD*, 1-38.
- Mat, S.C., Maat, S.M. & Mohd, N. (2015). Identifying factors that affecting the entrepreneurial intention among engineering technology students. *Procedia-Social and Behavioral Sciences*, 1016-1022.
- Miranda, F.J., Chamorro-Mera, A. & Rubio, S. (2017). Academic entrepreneurship in Spanish universities: An analysis of the determinants of entrepreneurial intention. *European Research on Management and Business Economics*, 23(2), 113-122.
- Moberg, K. (2014) Two approaches to entrepreneurship education: The different effects of education for and through entrepreneurship at the lower secondary level. *International Journal of Management Education*, 12(3), 512-528.
- Moss, S. (2009). Fit indices for structural equation modelling.
- Nadgrodkiewicz, A. (2013). *Building Entrepreneurship Ecosystems. Economic Reform Features Services*.
- Roundy, P.T., Brockman, B.K. & Bradshaw, M. (2017). The resilience of entrepreneurial ecosystems. *Journal of Business Venturing Insights*, 8, 99-104.

- Rueda, S., Moriano, J.A. & Liñan, F. (2015). Validating a theory of planned behaviour questionnaire to measure entrepreneurial intentions. In: Fayolle, A., Kyröy, P. & Liñán, F. (eds), *Developing, Shaping and Growing Entrepreneurship*, 60-69.
- Thompson, E.R. (2009). Individual entrepreneurial intent: Construct clarification and development of an internationally reliable metric. *Entrepreneurship Theory and Practice*, 33(5), 669-694.
- Urbano, D. (2006). Diversity in entrepreneurship. *European Council for Small Business and Entrepreneurship*.
- Wickramaratne, A., Kiminami, A. & Yagi, H. (2014). Entrepreneurial competencies and entrepreneurial orientation of tea manufacturing firms in Sri Lanka. *Asian Social Science*, 10(18), 50-62.
- Wothke, W. (2010). *Introduction to Structural Equation Modelling Course Notes*. SAS Education & Publishing, United States of America: SAS Education & Publishing.
- Wu, W. (2009). A competency-based model for the success of an entrepreneurial start-up. *WSEAS Transaction on Business and Economics*, 6(6), 279-291.
- Zhao, H., Seibert, S.E. & Hills, G.E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, 90(6), 1265-1272.