



Moderating effect of entrepreneurial education on the relationship between individual entrepreneurial orientation and entrepreneurial intention in Kaduna State University

Nurudeen Jimoh¹, Salisu Umar², Zubair Mohammed³ and Suleiman A. Karwai⁴

¹*Department of Business Administration, Kaduna State University – Nigeria.*

^{2&4}*Department of Business Administration, Ahmadu Bello University, Zaria – Nigeria.*

³*Department of Banking and Finance, Ahmadu Bello University, Zaria – Nigeria.*

Email: nur.jimoh@gmail.com

Abstract

Despite the dearth of scholarly work that examined entrepreneurial orientation at individual level in relation to intention, the relationship between the individual dimensions of risk taking, innovativeness, pro-activeness and entrepreneurial intention still produce inconsistencies of research findings. This study examines moderating role of entrepreneurial education on the relationship between individual entrepreneurial orientation and entrepreneurial intention, the study employed the partial least square structural equation modelling (PLS-SEM) as the analysis technique to run and analyze the data collected from University female students using a population sample of 250. The findings of the study showed that three (3) hypotheses were rejected. The direct relationship between risk-taking, innovativeness and entrepreneurial intention (EI) were found to be insignificant. Also, entrepreneurial education failed to moderate the relationship between innovativeness and EI. However, a significant moderating role of entrepreneurial education was established between risk-taking and EI. The study concludes that entrepreneurial education is a critical factor in building the risk appetite and strengthening the pro-activeness of female students in Kaduna state university.

Keywords: Entrepreneurship education, individual entrepreneurial orientation, entrepreneurial intention

1. Introduction

Research on entrepreneurial intention (EI) is becoming a rapidly progressing arena of study (Swarupa & Goyal, 2020, Linan & Fayolle, 2015). However, the low level of entrepreneurial intention among Nigeria female couple with persistent increase in unemployment and population growth is of great concern to Nigerian government and other policy makers. For instance, Global Entrepreneurship Monitor (GEM) of 2015 ranking which is the last GEM report from 2015 to 2021 that featured Nigeria

indicates that, Female entrepreneurs are mostly affected with low entrepreneurial intention (EI) than their male counterpart in Africa at large, and Nigeria in particular; as compared to other African nations. The GEM report revealed that the EI of female across all African nations stood at 47% which is low in comparison with 52% of their male counterpart (GEM, 2015). The report further indicated that the EI of Nigerian female stood at about 41% which is very low compared to 57%, 68% and 70% of the Uganda, Botswana and

Malawi's female EI respectively (Kelley et al., 2015).

Another central indicator of GEM is the Total Early-stage Entrepreneurship Activity (TEA) rate, which "measures the percentage of the adult population (18 to 64 years) in the process of starting a business and those who have recently started one". It was revealed that the Nigerian female TEA stood at 6% which is still very low in comparison with other African countries like Uganda, Zambia and Cameroon with 47%, 41% and 39% respectively (Kelley et al., 2015).

Similarly, notwithstanding the acknowledgment of entrepreneurship as vital means of mitigating the rate of unemployment among Nigerian youths, statistics revealed that about 10.61 million (35.2%) Nigerian females are unemployed as at the 4th quarter of 2020, this is a significant increase from 26.6% in the last quarter of 2018 (Nigeria Bureau of statistics (NBS), 2020; 2018). The 35.2% of unemployed females is much higher than the 31.8% of male unemployed (NBS, 2020). This suggests that more females in the working population in Nigeria are either unable or unwilling to work compare to their male counterpart. Therefore, the unemployment problem may be worsening with the arrival of university graduates whom may be competing in the already saturated labour market with little or no hope of securing a white-collar job.

Thus, investigating the likely factors that can enhance and harness the seemingly low entrepreneurial intention and TEA of the Nigerian female as well as enhancing the appetite for acquiring relevant skills towards becoming self-employed will be a huge contribution to the body of literature.

One of those factors discussed by a number of scholars such as ((Samuel,

Olutuase, Brijlal, Yan, & Ologundudu, 2018; Martins, & Ceballos, 2017; Razavi & Ab Aziz, 2017) in the extant literature is individual entrepreneurial orientation (IEO). Understanding individual entrepreneurial orientation (IEO) with the three dimensions of innovativeness, pro-activeness and risk-taking can assist investors, teachers and other stakeholders to comprehend students' or other individuals' personal orientation towards innovativeness, pro-activeness and risk-taking in their resolve toward commencing their own business (Bolton & Lane, 2012). Regardless of an increase in scholarly work that investigated the relationship between IEO and EI, the insufficiency in number of studies that examined entrepreneurial orientation predominantly at the individual level is a source of great concern and require more studies (Koe, 2016; Martens, Lacerda, Belfort & de Freitas, 2016; Gupta & Gupta, 2015). Furthermore, entrepreneurial education (EE) is very vital in stimulating university students' individual entrepreneurial skills and preparing them with the requisite entrepreneurial orientation, for instance; innovativeness and risk-taking (Ferreira, Raposo, Rodrigues, Dinis, & do Paco, 2012).

Despite the dearth of scholarly work that examined EO at individual level in relation to intention, the relationship between the individual dimensions of risk taking, innovativeness, pro-activeness and entrepreneurial intention still produce inconsistencies of research findings. Also, several studies found a positive relationship between risk taking, innovativeness, pro-activeness and entrepreneurial intention; there are others who found negative relationship with respect to the aforementioned variables. For instance, (Bell 2019; Fedáková, Studená & Kožárová, 2018; Ahmed, Pahi, Mozammel, Umrani, 2018; Popescu,

Bostan & Robu, 2016) found positive and significant relationship between risk-taking and entrepreneurial intention, while others like (Park, 2017; Koe, 2016) reported risk-taking not having significant effects on EI.

Similarly, (Bell, 2019; Koe, 2016; Gozukara & Colakoglu, 2016; Ozaralli & Rivenburgh, 2016) established positive and significant relationship between innovativeness and entrepreneurial intention, while others like (Sharaf, El-Gharbawy & Ragheb 2018; Park 2017.) established a negative and insignificant relationship between innovativeness and EI. Scholars such as (Bell, 2019; Park, 2017; Koe, 2016; Delle & Amadu, 2016) documented a positive and significant relationship between pro-activeness and entrepreneurial intention, while others like (Miao, 2015) established a negative relationship between pro-activeness and entrepreneurial intention.

With these mixed findings, no conclusion can be established. Thus, as advocated by Baron and Kenny (1986), where there are inconsistent or weak findings between exogenous and endogenous variables, a typical moderating variable can be introduced to balance and strengthen the relationship. Therefore, this study is employing entrepreneurial education to moderate the relationship between the individual dimension of EO (risk-taking, innovativeness, pro-activeness) and entrepreneurial intention of female undergraduate students in Kaduna State University.

2. Literature Review

Entrepreneurial Intention

Intentions signifies an individual's stimulus to make an effort to act upon a conscious plan or decisions (Liu, Lin, Zhao & Zhao, 2019). As stressed by Fayolle and Linan (2014), entrepreneurial

intentions direct an individual to prefer self-employment as their favourite career choice. Entrepreneurial intentions have been viewed from different perspectives by different scholars. Therefore, Dohse and Walter (2010) in agreement with Dell (2008) defined entrepreneurial intentions as the willingness of an individual to express entrepreneurial behaviour and involve in entrepreneurial activities correlated with self-employment initiatives and new venture start-ups.

Individual Entrepreneurial Orientation (IEO)

Several studies have empirically examined and defined entrepreneurial orientation (EO) as a firm level construct (see: Covin & Slevin, 2018; Linton & Kask, 2017). Extant literature on entrepreneurial orientation has largely linked the origin of the concept to the work of Miller (1983) (see: Lonial & Carter, 2015; Kollmann & Stöckmann, 2014). However, Scholars had advocated that EO can also be considered as an individual level construct (e.g. Gupta & Gupta, 2015; Robinson & Stubberud, 2014). This has led to the emergence of new avenues to scholars and researchers to examine EO from an individual level and perspective. According to Bolton and Lane (2012), entrepreneurial orientation concept has been defined as a psychological construct that assists in clarifying the basic means of comprehending the rationale behind individual behaviours toward engaging in entrepreneurial activities. Thus, the present study adopts the three validated dimensions of EO construct (innovativeness, pro-activeness and risk-taking) and test the effect of each dimension independently on Nigeria students' intentions as suggested by Bolton and Lane (2012).

Theoretical framework and development of hypotheses

Innovativeness and Entrepreneurial Intention

Innovation is the predisposition to creativity and experimentation in producing new products, services and technology through research and development (R &D) of new processes (Rauch, Wiklund, Lumpkin & Frese, 2009). It signifies the ability of engaging in new ideas and techniques in order to introduce new products and services in markets (Zahra & Garvis 2000). Koe (2016) investigated the relationship between Individual Entrepreneurial Orientation (IEO) and entrepreneurial intention of One Hundred and Seventy Six Malaysian students. The study documented a significantly positive relationship between innovativeness and entrepreneurial intention. Furthermore, a number of empirical studies have established that innovativeness as one of the dimensions of individual entrepreneurial orientation has significant positive relationship with entrepreneurial intention ((Gozukara & Colakoglu, 2017; Ozaralli & Rivenburgh, 2016; Ramoni, 2016). On the basis of the above, the null hypotheses were formulated:

Ho₁: *Innovativeness has no significant relationship with entrepreneurial intention (EI)*

Ho₂: *Entrepreneurial education does not moderate the effect of innovativeness on EI*

Pro-activeness and Entrepreneurial Intention

At the individual level, Bolton and Lane (2012) suggested that pro-activeness is defined as “an opportunity-seeking, forward-looking perspective characterized by new products and services ahead of the competition and acting in anticipation of future demand”. Proactive individuals have the tendency to influence the environment around them and are more likely to be the first to identify and

implement opportunities (Rauch & Frese, 2007). Delle and Amadu (2015) investigated the relationship between proactive personality and entrepreneurial intention among 270 undergraduate students from three universities in Ghana. The study found that proactive personality was significantly and positively associated with entrepreneurial intention. Bell (2019) examined predicting entrepreneurial intention across the University in United Kingdom. The study indicated that pro-activeness has a significant relationship with entrepreneurial intention of the students. Hu, Wang, Zhang & Bin (2018). examined the extent to which entrepreneurial alertness mediates the effects of students’ proactive personalities and creativity on entrepreneurial intention. Using a sample of 735 Chinese undergraduate students at 26 universities, the study documented a positive significant relationship between proactive personalities and entrepreneurial intention. In line with the above submission, the null hypotheses were formulated:

Ho₃: *Pro-activeness has no significant relationship with entrepreneurial intention (EI)*

Ho₄: *Entrepreneurial education does not moderate the effect of pro-activeness on EI*

Risk Taking and Entrepreneurial Intention

According to Park and Park (2017) risk-taking signifies the desire by an individual or organisation to actively capture and pursue opportunities in an uncertain environment accommodating the risks involved. Individual’s character that is receptive to take risk tends to be associated with an entrepreneurial role of venture creation and stronger level of EI (Kerr, Kerr & Dalton, 2019). Miao, (2015) employed structural equation modelling and established a positive and significant relationship between risk-taking and

student's start-up intention among Chinese students. In addition, Ahmed, Pahi, and Umrani (2018) examined entrepreneurial intention among female students in Malaysia, employing the structural equation modelling on a sample of Three Hundred Eighteen female undergraduate students. The study found a significantly positive relationship between risk-taking and entrepreneur intention. In Nigeria, Ameh, Abu Amodu and Udu (2016) investigated the relationship between social networks size and risk disposition among student entrepreneurs. The study established a significant positive relationship between risk disposition and entrepreneurial intention among the sampled students. Djaoued, Mohammed, and Fethi, (2018) examined the role of individual factors as a predictor of entrepreneurial intention of female university students in Algeria. The study documented a weak relationship between risk-taking propensity and entrepreneurial intention of the female students. Based on the above literature, the null hypotheses were formulated:

H₀₅: *Risk-taking has no significant relationship with entrepreneurial intention (EI)*

H₀₆: *Entrepreneurial education does not moderate the effect of risk-taking on EI*

Entrepreneurial education and entrepreneurial intention

Entrepreneurial education (EE) has been viewed from different perspectives by different scholars. Oduwaiye (2009) sees entrepreneurship education as the scope of lectures, curricular and programmes that endeavour to provide students with the required entrepreneurial competencies, aptitudes, technical know-how and skill geared towards the pursuit of a career in entrepreneurship. Abiodun and Oyejoke (2017) examined the relationship between entrepreneurship education and students'

entrepreneurial intentions in Ogun state-owned universities, Nigeria. Using a sample of 609 students, the study found that entrepreneurship education significantly influences students' entrepreneurial intentions. Aladejebi (2018) ascertain the effect of Entrepreneurship Education on Entrepreneurial Intention among Tertiary Institutions in Nigeria. It was established that entrepreneurial education positively influenced entrepreneurial intention. Conversely, Popescu, Bostan, Robu, Maxim and Diaconu (2016) analyse how entrepreneurial intentions are influenced by certain psycho-behavioural traits of the individual in Romanian. The study found that entrepreneurial education negatively relates with entrepreneurial intention. Thus, the following hypotheses were formulated:

H₀₄: *Entrepreneurial education has no significant relationship with entrepreneurial intention*

Theory of Planned Behaviour (TPB)

The theory of TPB was propounded by Ajzen (1991), and regarded as one of the most useful models that explained the entrepreneurial intentions of students. This theory is usually employed to explain and analyse human behaviour which comprises three basic elements: attitude towards behaviour, subjective norm and perceived behavioural control. Attitude towards behaviour implies the extent to which an individual has a favourable or unfavourable evaluation of becoming an entrepreneur (Ajzen, 2002). Subjective norm is the perceived social pressures to perform or not to perform a specific behaviour towards entrepreneurship; it is grounded on the belief that that some vital individual will approve or fail to approve the prospective entrepreneur's actions of commencing a new venture (Ajzen,

2001). Perceived behavioural control signifies the perceived ease or difficulty in relation to one's capability of executing entrepreneurial behaviour (Liñán & Chen, 2009). It can be contended that when people see great opportunities for commencing a business venture in their environs, they tend to have more favourable expectations about the possible result of an attempt to launch a business venture and this implies that such people will also have a more positive attitude

towards entrepreneurship because of acquired entrepreneurial education. Likewise, when university graduates acknowledge that panic of failure will preclude them from going in to entrepreneurship; it can be considered as a pointer for a negative attitude towards developing a business venture. This will equally influence their level of risk perception, innovativeness, and pro-activeness.

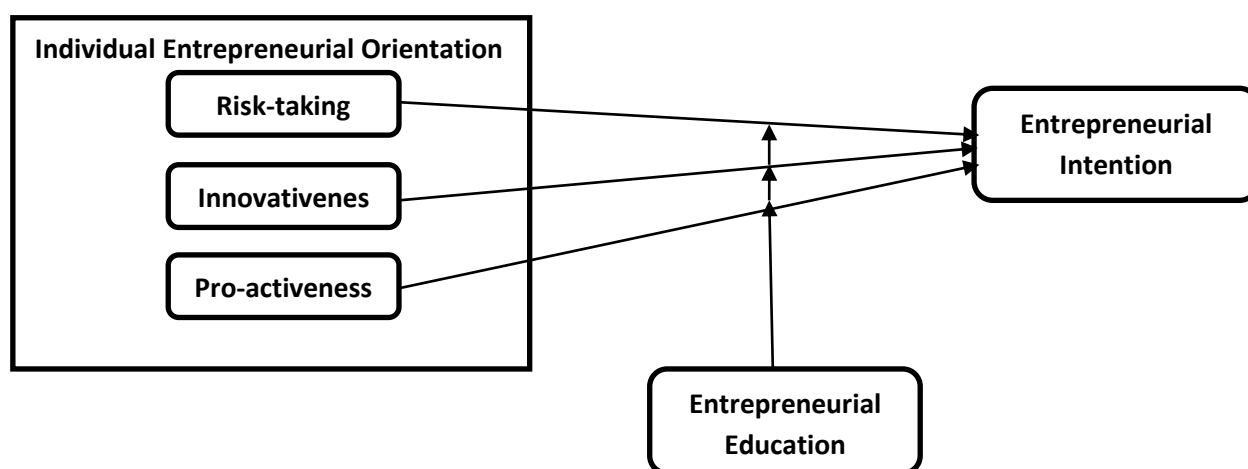


Figure 1 Research framework

3. Methodology

The study employed survey research design which was a cross-sectional in nature. Self-administered questionnaires were used to obtain primary data from the respondents. The population of the study were the female final year students of Kaduna State University whom were (1,311) in number. Krejcie and Morgan, (1970) sample size table was used to arrive at the sample size of (299) which is the average of 297 and 302 for a population of 1,300 and 1400 respectively. In line with the suggestion of Hair, Wolfinbarger, Ortinau, and Bush (2008) that a sample size could be increased by 40 to 50 per cent so as to handle the tendency of missing questionnaires as well as disobliging subjects. The sample size was increased by 40% and the new sample size

amounted to (418). Out of the 418 questionnaires distributed, 271 were filled and returned, 21 had more than 7.7% missing values and were deleted. Thus, 250 valid questionnaires were used for the analysis. Proportionate stratified random sampling technique was employed.

The instrument for measuring IEO was multidimensional with three dimensions of risk-taking, four dimensions of innovativeness and three dimension of pro-activeness making a total of 10 items adapted from the study of (Bolton & Lane, 2012) with Chronbach's alpha of .70. Similarly, five (5) items for measuring entrepreneurial education were adapted from (Souitaris, Zerbinati, & Al-Laham, 2007) and has a Chronbach's alpha of 0.71. Moreover, six (6) items that measured entrepreneurial intention were

adapted from the work of Linan and Chen (2009) with Chronbach's alpha of 0.78. Structural Equation Modelling using Smart-PLS 3.0 statistical software was used for data analysis.

4. Result and Discussion

Assessment of SEM Path Model Results: Individual Item Reliability

Assessment of individual indicators' reliability was achieved by evaluating the outer loadings of individual construct's measure (Hair et al., 2018; Hair et al., 2010). All the outer loadings exceeded the recommended threshold value of 0.7 (Hair et al., 2018, Henseler, et al., 2009). However, in line with the suggested rule of thumb, items with loadings between .40 and .70 are also acceptable (Hair et al., 2014). It was realised that of the 21 items that measured the constructs of the study, 16 items were retained as they had a loading between 0.73 and 0.93. Six items were deleted because their loadings were below the established threshold. See appendix 1 for the pictorial image of the measurement and structural models.

Internal Consistency Reliability and Convergent Validity

Cronbach's alpha and composite reliability were used to assess the internal consistency/ reliability. Cronbach's alpha presumes that all indicators are similarly reliable, and have equal outer loadings on

the construct. However, the weakness of this conjecture is the fact that PLS-SEM ranks the indicators in relation to their individual reliability (Hair, *et al.*, 2018). On the other hand, the second alternative measure of internal consistency reliability is known as composite reliability. This measure emphasised on the distinct outer loadings of the indicators. It is thus, appropriate to cogitate both (Hair, *et al.*, 2018). In this regard, the rule of thumb states that any outer loading with a value of an indicator of 0.70 and above will be retained, otherwise discarded.

The composite reliability as well as the Cronbach alpha values for all the latent construct examined indicated that they are all above the suggested threshold of 0.7 (Hair et al., 2014, Henseler et al., 2009). Precisely, as indicated in the table, the values for the latent constructs for the two test of reliability employed ranged from 0.871 to 0.928, hence, signifying higher level of reliability (Hair et al., 2014). Following the reliability test, convergent validity was also assessed, convergent validity measures the extent to which two measures of the same concept are correlated (Hair *et al.*, 2014). This was achieved by examining the value of the average variance extracted (AVE). All the AVE values as showed in table 1 exceeded the threshold of 0.5 (Hair et al., 2014, Henseler et al., 2009). The minimum value was 0.668; this implies that convergent validity was established.

Table 1: Items Loadings, Average Variance Extracted, Reliability

Item	Loading	AVE	Composite Reliability	Cronbach's Alpha
EE1	0.829	0.668	0.908	0.871
EE2	0.734			
EE3	0.873			
EE4	0.854			
EE5	0.843			



EI1	0.902	0.689	0.928	0.903
EI2	0.819			
EI3	0.839			
EI4	0.799			
INNO1	0.926	0.699	0.874	0.783
INNO2	0.895			
PRO1	0.931	0.739	0.895	0.823
PRO2	0.918			
PRO3	0.836			
RISK2	0.908			
RISK3	0.890			

Next is the examination of the discriminant validity which signifies the degree to which a construct is really distinct from other constructs (Hair *et al.*, 2014). Fornell and Lacker ‘s (1981) criterion was utilised to established this validity. The results of the study indicated that the square root of AVE values for all

constructs exceeded other construct as they correlated with a latent variable correlation. Thus, the discriminant validity of the constructs was established (Hair *et al.*, 2014, Henseler *et al.*, 2009). Table Two presented the Fornell and Lacker ‘s (1981) criterion for establishing discriminant validity

Table 2: Latent Variable Correlation

Variable	1	2	3	4	5
1. Education	0.784				
2. InnoV	0.756	0.819			
3. Intention	0.67	0.567	0.817		
4.ProAc	0.617	0.618	0.574	0.856	
5. Risk	0.751	0.7	0.494	0.585	0.9

Note: Diagonal elements (figure in bold) are the square root of the variance average extracted (AVE) shared between the construct and their measures. Off diagonal elements are the correlations among constructs.

Assessment of Significance of the Structural Model

In line with the result of the test of hypothesis presented in table 1 below, the following are documented. The finding of hypothesis one (H01) revealed a non-significant positive relationship between risk-taking and entrepreneurial intention

(EI) ($t=0.879$, $p > 0.05$). Similarly, finding of hypothesis H02 revealed a non-significant positive relationship between innovativeness and entrepreneurial intention (EI) ($t= 0.401$, $p > 0.05$). Likewise, finding regarding H03 revealed a significant positive relationship between pro-activeness and entrepreneurial

intention ($t= 2.541, p < 0.05$). With respect to H04, the finding showed a significant positive relationship between entrepreneurial education and entrepreneurial intention ($t=2.049, p < 0.05$). Next, for the indirect relationships, the result for hypotheses H05 and H07 showed evidence for moderating effects of entrepreneurial education on the

relationship between risk-taking and proactiveness on entrepreneurial intention ($t=3.247, p < 0.01$), ($t=2.087, p < 0.05$), respectively. Contrarily, result for hypothesis H06, showed evidence for non-moderating effect of entrepreneurial education on the relationship between innovativeness and entrepreneurial intention ($t= 1.855, p > 0.05$).

Table 3: Hypotheses testing (direct and moderating relationships)

Hypotheses	Relationship	Beta Value	Standard Error	t-value	p-value	Decision
H01	Risk -> Intention	0.181	0.206	0.879	0.380	Fail to reject
H02	InnoV -> Intention	0.027	0.068	0.401	0.688	Fail to reject
H03	ProAc -> Intention	0.537	0.211	2.541	0.011**	Rejected
H04	Education -> Intention	0.144	0.07	2.049	0.041**	Rejected
H05	Risk * Education ->EI	0.131	0.04	3.247	0.001***	Rejected
H06	InnoV * Education ->EI	0.45	0.243	1.855	0.064	Fail to reject
H07	ProAc * Education ->EI	0.518	0.248	2.087	0.037**	Rejected

** $p < .05$; *** $p < .01$

Assessment of Variance Explained in the Endogenous Latent Variables

The *R*-squared value signifies the proportion of variation in the endogenous variable(s) that can be explained by one or more predictor variable. However, the acceptable level of *R*² value is research context specific (Hair et al., 2011). In this study, the *R*-Square is 0.641 which approximately (64%).

The research model indicated that the exogenous variables explain 64% of the total variance in the endogenous variable (EI).

5. Discussion of the findings

The major objective of this study is to examine the effects of entrepreneurial education on the relationship between the individual dimension of EO and EI of

female students in kaduna state university. Findings from the collected data indicated that that risk-taking and innovativeness have a positive but non- significant influence on entrepreneurial intention. These findings are in conformity with the study of Djaoued, Mohammed, and Fethi, (2018) which documented that risk taking has no significant influence in predicting female EI in Algeria.; and Park (2017) who established a non-significant relationship between innovativeness and EI. However, a significant positive relationship was established between pro-activeness and EI. This finding is in line with the study of Bell (2019) which found that pro-activeness has a significant relationship with entrepreneurial intention of the students in University in United Kingdom. This implies that pro-activeness is very critical in predicting entrepreneurial intention of university students which may ultimately leads to actual venture creation. Similarly, the study also confirmed that entrepreneurial education moderates the relationship between risk-taking and EI, as well as between pro-activeness and EI. This result suggests that entrepreneurial education is very vital in enhancing and strengthening the student's appetite for risk-taking towards developing EI which is necessary for venture creation. The result further suggests that entrepreneurial education significantly moderate the relationship between pro-activeness and EI of the female students. This may assist by guiding the students on how to recognise opportunities and capitalize on them and persevere until they bring about meaningful change. Though, the moderating effect of EE on pro-activeness and EI is significant, but the beta value of (0.518) of the indirect relationship compared with the beta-value (0.537) of the direct relationship, signifies that, the inclusion of the moderating variable dampens the direct relationship as

established in the study. This may be attributed to the nature of the curriculum used in delivering the EE which to a large extent lacks the practical approach capable of enhancing the pro-activeness of these students. However, entrepreneurial education (EE) fails to moderates the relationship between innovativeness and EI. This can be due to the nature of the EE, and the style of delivering the EE lecture which in most cases, is purely theoretical without much attempt to blend the style of delivering with creative thinking and vocational activities that can enhance the students' innovative capacity.

6. Conclusion

This study concludes that entrepreneurial education is a critical factor in building the risk appetite and strengthening the pro-activeness of female students in Kaduna state university. The duo factors play a substantial role in developing entrepreneurial intention which is a strong predictor of entrepreneurial behaviour. Thus, the study recommends that KASU's management and other policymakers should focus on strengthening entrepreneurial education as it is capable of driving student's appetite for risk-taking and enhance their pro-activeness tendency especially if blends with practical approach towards forming EI. Furthermore, since innovativeness is not significant despite its relevance in forming EI, the study recommends blends of theoretical and vocational training in the course of lecture delivering; this will assist in stimulating the creativity inclination of the students towards developing an EI which has direct influence on becoming self-employed. Finally, this study contributes to entrepreneurship literature by documenting moderating effects of entrepreneurial education on the relationship between the individual dimension of EO (risk-taking,



innovativeness and pro-activeness) and entrepreneurial intention which is very rare in the extant literature.

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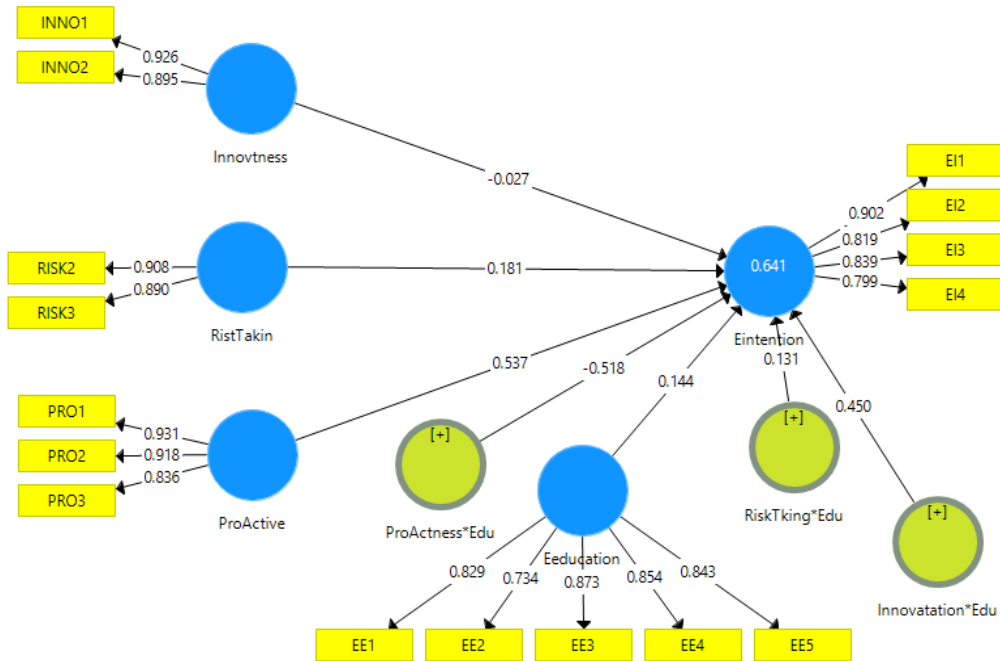
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Appendix 1 Measurement Model



Structural Model

