

Entrepreneurship Education, Personality Traits and University Environment as Predictors of Venture Creation Among Undergraduates in Nigeria

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Abstract

National entrepreneurship activities define economic growth, development and national competitiveness. Creating a pool of entrepreneurs becomes a viable strategy for developing countries to improve employment and livelihoods therein. While entrepreneurship education, personality traits and the university entrepreneurship environment matter in terms of the stimulation of entrepreneurial intention, little is known about the relationship in the Nigerian context. This study therefore examines the influence of entrepreneurship education (EE), students' personality traits (PECs), and the perception of the university entrepreneurship environment on students' entrepreneurial interest (EI) and practice (EP). The study further explores how EE influences their entrepreneurial capabilities. Primary data were collected from 3,848 students across the science, engineering and social science disciplines at six Nigerian universities. The results show that about 81.8% of the students are interested in entrepreneurship, while about 39.1% of them are currently practicing entrepreneurship. Regression analysis shows that EE, PECs and parents' entrepreneurial experience have a positive and significant relationship with students' EI and EP. Interestingly, students' perception of the university entrepreneurship environment shows a positive and significant relationship to EI, especially in terms of inspiring them to become entrepreneurs. EE was found to equip students with the ability to notice and develop business ideas, networks, practical managerial skills, an understanding of entrepreneurship in general and the attitude, values and motivation necessary for venture creation. The study provides novel empirical insights into the relevance of the university context to the EI and EP of students at Nigerian universities. It further confirms the influence of EE and

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PECs on EI and EP. The study concludes with important policy suggestions by means of which to stimulate and sustain students' interest and confidence in venture creation.

Key words

university, entrepreneurship interest, entrepreneurial practice, personal entrepreneurial characteristics, undergraduates.

Introduction

One of the critical challenges confronting African countries, and Nigeria in particular, is the persistent increase in the unemployment rate leading to unrest and insecurity. Unemployment has escalated in recent years due to the economic slowdown occasioned by the COVID-19 pandemic (Ilevbare et al., 2022). Recent statistics from the national database showed that the country has an unemployment rate of 33.3%, with the majority in the youth category (42.5%) (NBS, 2022). With a low business birth rate and a poor business climate in the country, it does not seem as though the problem of unemployment will disappear anytime soon. Therefore, promoting and stimulating entrepreneurship among the youth becomes a viable option for overcoming poverty and unemployment (Drucker, 2014; Ilevbare et al., 2022). Successive governments in Nigeria had devised several programmes and policies to tackle the problem of unemployment and macroeconomic challenges in the past, including the industrial revolution plan, economic recovery and growth plan, economic sustainability plan and the current national development plan (2021-2025) (FMFBNP, 2021). Major programmes that cut across the national development plans are those designed to reduce poverty, unemployment and provide critical infrastructure to stimulate new venture creation while sustaining the existing ones. In fact, the 2022 budget, which was meant to finance the National Development Plan (2021-25), hinged on achieving accelerated growth, deepening initiatives for diversified growth

and fostering sustainable development. To achieve these laudable goals, four key strategic objectives and two cross-cutting enablers were identified to lay the groundwork. Among these strategic objectives are the need to establish a strong foundation for a diversified economy, invest in critical infrastructure (such as finance, physical, digital and innovation), build a solid framework for building capacity and strengthening security, and enable a vibrant, educated and healthy populace. In addition, investment in social infrastructure for the alleviation of poverty and the promotion of development opportunities across the country and regions have become key enablers in the NDP (FMFBNP, 2021). As earlier noted, the nucleus of any economy lies in the ability to provide an enabling environment for business and innovation in a sustainable way, including a wide array of social and infrastructural services. This gave credence to the argument espoused by Mazzucato (2016) that nations have to be appropriately equipped with entrepreneurial mindsets and leadership, deploying policies and making decisions that allow for the exploitation of opportunities in order to foster economic development.

Overreliance on oil revenue since the 1970s has been a major drawback for the Nigerian economy. The agricultural sector, which previously served as the mainstay, is now dominated by subsistence practices, resulting in huge food deficits and subsequent imports (NBS, 2020; 2022). The service sector now contributes more than other sectors to the economy, although its full potential is not

being explored as a result of weak ICT infrastructure, which is one of the key types of infrastructure needed to bolster innovation and entrepreneurship ecosystems in the country.

Moreover, the knowledge institutions within the ecosystems need to provide education and training in entrepreneurship to equip students and faculty members with entrepreneurship competencies and skills to positively impact society. There is burgeoning literature on how entrepreneurship education and training can stimulate students' career options in venture creation and self-employment (Olofinyehun et al., 2018; Adelowo et al., 2021). In addition to entrepreneurship education, there is a general perception in the country that most curricula taught in schools merely prepares students for careers in white-collar jobs, thereby pushing them to become job-seekers after graduation rather than job creators. To effectively prepare students for venture creation, all actors in the entrepreneurship and innovation ecosystems have to play active roles providing policy incentives, critical entrepreneurship infrastructure, financial incentives such as venture/innovation funds, clear guidelines on training, R&D investment, university-industry collaborations and human capital development. In addition, some of the key indicators that have emerged for monitoring and evaluating entrepreneurship ecosystems recently included national and entrepreneurship framework conditions, societal values and individual attributes (GEM, 2022). The Global Entrepreneurship Development Institute also designed indicators for measuring the quality and dynamics of entrepreneurship ecosystems at the national and regional levels, paying particular attention to attitudes, ability and aspirations as the core structure of entrepreneurship indices (Acs et al., 2018). In shaping the ecosystems, the indicators take cognisance of the framework conditions advanced in the GEM reports including the market structure

of the economy, infrastructure, R&D system, the financial sector, the corporate sector, government and the education system. Furthermore, Acs et al. (2018) devised 14 components of entrepreneurship ecosystems ranging from opportunity recognition to the availability of risk capital within the system. Entrepreneurship begins with the ability to perceive and exploit opportunities using the available resources, yet adequate support in the ecosystems are required. The performance of Nigeria as measured in existing entrepreneurship data indices has always been low principally because of its weak institutions, infrastructure and policy incentives, among other things (Siyanbola, 2019). This is also demonstrated in the consistent decline of the country's ranking on the WIPO Global Innovation Index (WIPO, 2021) and the Global Competitiveness Index (GCI, 2021) by the World Economic Forum.

In recent times, a consortium of three universities in Europe have emerged to regularly map the university entrepreneurial spirit of students at the national and global levels (Sieger, 2021). The datasets generated by the consortium provide insights into the entrepreneurial intention and its key determinants among university students in various countries around the world. The participation of Nigerian universities in this survey is limited to 2010, with few responses. However, recent studies have shown that the National Centre for Technology Management in Nigeria has been conducting a large-scale survey on students' entrepreneurial intentions since 2007 (Olofinyehun et al., 2022). The dataset has now been published and is freely available for public use as well (Olofinyehun et al., 2022). This dataset is useful to policymakers and interested stakeholders for mapping the relevance of entrepreneurship education and identifying key correlates of entrepreneurship interest and practice among undergraduates in the country. For the purpose of this study, we specifically examine the important roles played by the university entrepreneurship

environment, students' personality traits and entrepreneurship education as important variables that jointly influence the propensity for entrepreneurship among students. As parts of the effort to transform universities into hubs of innovation and entrepreneurship in Nigeria, it is critically important to map the level of preparedness that could match students' readiness for venture creation. This study shines a light on students' perception of the university entrepreneurship environment at universities and also scrutinises how entrepreneurship education has impacted their entrepreneurship capabilities. The uniqueness of this study is twofold; it uses a large-scale dataset and represents the first case of including the university entrepreneurship environment as a variable that influences EI and EP, in addition to personality traits and entrepreneurship education. Theoretically, the study provides empirical implications of the university entrepreneurship environment and entrepreneurship education on the intention of undergraduates to become entrepreneurs (Ajzen, 1991; 2011). The remaining sections are structured as follows: section 2 contains the literature review; section 3 articulates the methodology, variables and measurement and how the data was analysed; section 4 presents the results and discussion; while the last section highlights the conclusions and policy recommendations.

1. Literature review

Studies have consistently demonstrated that entrepreneurship education (EE) has the potential to instil entrepreneurial mindsets and skills, particularly in young people (Gerry et al., 2008; European Commission, 2012; Valerio et al., 2014; Liñán & Fayolle, 2015; Olofinyehun et al., 2018). The findings also show that exposure to entrepreneurship education indeed improves the propensity for entrepreneurship among undergraduates (Siyanbola, 2019; Olofinyehun et al., 2018). However, direct links between EE and actual

engagement in entrepreneurial activities is yet to be established, given that a number of other factors mediate start-up formation, including finance, infrastructure, regulations and other players in the ecosystem. Besides these other factors, the entrepreneurship education curriculum also matters, including the delivery system, class size and availability of mentoring services. From the perspectives of Ajzen (1991) as laid out in his theory of planned behaviour, entrepreneurial behaviour is driven by three important psychological properties, namely attitude towards behaviour, subjective norms and perceived behavioural control. The attitude towards entrepreneurial behaviour is defined by the degree to which an individual considers entrepreneurship a favourable outcome after evaluation. Here, the benefits and motivations for engaging in entrepreneurship are considered holistically by individuals before actual engagement in entrepreneurial ventures. Second, the subjective norms relate to the acceptability of the behaviours in society. For instance, if an individual believes that an entrepreneurial undertaking is acceptable in a particular setting, most likely among one's peers, friends and society, there is a high chance of engaging in it than would otherwise be the case. The third component, perceived behavioural control, relates to the capability of an individual to actually exercise the behaviour. In this case, competence matters. The overarching role of entrepreneurship education as a mediator of attitude, subjective norms and perceived behavioural control towards start-up creation has been well documented in the literature (Ndfirepi, 2020). By exposing an individual to EE or ET, their attitude, perception and aspirations regarding entrepreneurship receive a boost (Linan, 2008; Regele & Neck, 2012; Rauch & Hulsink, 2015; Boldureanu et al., 2020). This notion is also confirmed by the human capital theory, where education is believed to imbue skills and knowledge into an individual to enhance competence and capability for independent

or collective actions. EE tends to increase participants' awareness of entrepreneurial opportunities both prior to and after graduation, thereby enabling skills development for new venture creation (Morland et al., 2021). They further claimed that EE allows participants to self-discover their entrepreneurial potential, with the possibility of engaging in entrepreneurship in the future. To Morland et al. (2021), experiential entrepreneurship education is important for individuals interested in starting business ventures, as it fills the gaps between knowledge acquisition and tacit appreciation of what it takes to be entrepreneurial. Therefore, to promote entrepreneurship among university students, it is imperative to understand their initial drive and motivation for participation in entrepreneurship courses so as to provide suitable programmes that will be more likely to lead to positive business outcomes. It should be noted that EE is most effective where favourable entrepreneurial ecosystems exist and suitable training develops skills, perceptions and intentions which can easily be translated into actions (Martinez et al., 2010).

In a quasi-experimental study among Spanish students at the University of Castilla-La Mancha, Díaz-García et al. (2015) found empirical evidence for the contention that EE improves entrepreneurial intentions and sustains the self-efficacy of those who participated in the entrepreneurship programme. This suggests that EE has the potential to ignite passion for entrepreneurship in students, but a different strategy may be required to sustain it, particularly the establishment of entrepreneurship facilities such as incubators, science parks and technology parks, among others. A more recent study also confirms that the university context and entrepreneurship training are important parameters that influence students' attitudes towards entrepreneurship in 10 Colombian universities (Valencia-Arias et al., 2021). The authors later emphasise the need to align the entrepreneurship

curriculum with industry needs and equip students with an experiential entrepreneurship education that helps them create business ventures or make them readily employable in the industry. Solesvik (2019) also affirmed that participation in university entrepreneurship programmes develops stronger entrepreneurship skills among students who participate than those who do not. Della Volpe (2020) argued that entrepreneurship education that will equip 21st century entrepreneurs with the skills and mindsets necessary for business creation should go beyond traditional classroom teaching to incorporate knowledge that promotes innovation. Entrepreneurship education programmes may arouse the urge for entrepreneurship in students, but there are other factors that mediate between intention and actual action, particularly the configuration of the entrepreneurial ecosystems – access to finance, business space and other support infrastructure. Moreover, the curriculum and delivery process are key to the success of EE. For instance, Guerrero and Urbano (2012) suggest that for EE to be effective and achieve the intended purpose, seminars, business meetings and labs where students and experienced entrepreneurs can interact have to be incorporated into the training. Other authors have also suggested role modelling (Van Auker et al., 2006; Karimi et al., 2013), case studies (Byabashaija & Katono, 2011) and mentoring programmes (Karimi et al., 2013) as important components of entrepreneurship education and training.

In Nigeria, studies have examined and shown the influence of self-efficacy on entrepreneurship intention among students in technical and vocational education in Lagos State (Adeniyi, 2021; Adeniyi et al., 2022). However, the author did not consider the fact that self-efficacy of students is a function of their knowledge and understanding of entrepreneurship and other factors in the entrepreneurship ecosystems. As noted earlier, for students to improve self-efficacy,

entrepreneurship education is crucial. By factoring in the university entrepreneurship environment, we tend to increase the understanding of how its perception interacts with entrepreneurship intention and practice among undergraduates. Finally, the study evaluates the influence of entrepreneurship education, personality traits (PECs) and university context on EI and EP of the undergraduates in the country. The study also estimates the influence of entrepreneurship education on the entrepreneurship capacity of the students using regression analysis (OLS).

2. Methodology

The study utilises a cross-sectional study for which data were collected with the aid of a questionnaire to examine the effects of government entrepreneurship education policy on the entrepreneurial intention and practice of students in six selected universities across Nigeria (Adelowo et al., 2021; Olofinyehun et al., 2022). In Nigeria, research on entrepreneurial interest and practice among students of higher education institutions dates back to 2007, when the effect of entrepreneurship education policy in Nigeria was examined at NACETEM. In 2010-2011, a large scale cross-sectional survey was again designed to gain more insights into how entrepreneurship courses at Nigerian institutions have influenced EI and EP. In 2016 and 2020-2021 further rounds of datasets were collected from the same institutions to further unpack the dynamics of entrepreneurial activities in the universities. In the latter survey, however, certain variables were introduced to provide a better understanding of the influence of entrepreneurship education on the entrepreneurial skillsets acquired by the students. It also provided information on how students perceived the university entrepreneurship environment (ecosystems), and whether it is conducive to entrepreneurial ventures. Universities with entrepreneurship

infrastructure and incentives tend to boost students' interest and participation in venture creation. For instance, there are deliberate efforts currently ongoing in South Africa to improve the entrepreneurial climate in higher education institutions through the introduction of entrepreneurship development in higher education (EDHE). Such programmes target different segments of students and faculty with the sole aim of improving venture creation and research commercialisation, thereby reducing the rate of unemployment in the country. Nigeria has run compulsory entrepreneurship education as part of tertiary education for decades now, but the different approach that South Africa brought to their programmes makes them more likely to promote job creation. For instance, the introduction of competitive grants, innovation funds and other mechanisms to bridge university-industry gaps are germane to the promotion of entrepreneurship in the higher education system.

In the datasets used for this article, at least 700 or 800 students from the science, social science and engineering departments at six universities participated in the survey. A total of 3,848 survey instruments retrieved were usable for analysis. The datasets used represent those collected during the 2020-2021 sessions. It should be noted that data collection began in the first quarter of 2020 before the COVID-19 pandemic was reported in Nigeria. Data collection at one university was delayed until 2021 because the school could not resume the process as a result of the lockdown measures meant to stall the spread of COVID-19.

2.1. Variables and Measurement

The important variables of interest in this study include students' entrepreneurial intention, practice and their perception of the university entrepreneurship environment. From the theory of reasoned action (TRA) and planned behaviour (TPB), intention has been advanced as an important predictor of

behaviour, including entrepreneurial behaviour. TPB strongly advanced the hypothesis that behaviour is a function of interplays among three key variables, including attitude towards behaviour, subjective norms and perceived behavioural control (Ajzen, 1991; 2011). Students' intention to start or interest in starting a business was captured using the dichotomous variable 'Yes' or 'No' and coded as '1' and '0' respectively. Students who were interested in starting their own businesses answered in the affirmative, while their level of interest was captured on a five-point Likert rating scale ranging from very low (1) to very high (5). Quantifying their level of interest provided further insight into their level of seriousness with regard to the previous question of whether they were interested in entrepreneurship as a career option or not. Similarly, entrepreneurial practice (EP) was measured using the dichotomous variable of 'Yes' (1) or 'No' (0), indicating whether they were already undertaking business activities at the time of the survey. This is not an uncommon practice among young graduates in Nigeria, where some engage in petty trading to support themselves financially on campus (Olofinyehun et al., 2018). Information on whether their parents run or manage a business was elicited using the dichotomous response of 'Yes' (1) or 'No' (0). Parents' business experience has been established in the literature to influence entrepreneurial intention among students (Olofinyehun et al., 2018). Students' participation in entrepreneurship courses was captured using the dichotomous variable of 'Yes' (1) or 'No' (0).

For the personal entrepreneurship characteristics (PECs) of students, 55 validated items developed by Management Systems International in 2018 were adapted (Reyel et al., 2018; Adelowo et al., 2021). The items were measured on a five-point Likert scale of 'never' (0) to 'always' (4). Unlike how the PECs were grouped and analysed in our previous study, weighted means were computed and used in this article.

In terms of university entrepreneurship ecosystems, students were asked to rate the extent to which they perceived their university environment as supporting or promoting entrepreneurial inclinations on a five-point Likert scale from 'never' (0) to 'always' (4). Six items were used to capture this variable, adapting Sieger's (2021) framework (see Appendix 1). The items are as follows: 'the entrepreneurship environment at my university inspires me to develop new business ideas', 'a favourable environment for becoming an entrepreneur exists at my university', 'students are encouraged to engage in entrepreneurial activities at my university', 'there are suitable entrepreneurial laboratories and equipment for skills acquisition at my university', 'we were exposed to the practical approach of entrepreneurship or businesses in my department' and 'there are sufficient lecture halls for entrepreneurship education at my university'. These six items were reduced to two main factors using the Principal Component Analysis (PCA). The two factors explained 68.1% of the variance among the items that represents students' perception of the university entrepreneurship environment. The results further show that the Bartlett's test of sphericity was statistically significant ($X^2=6119$, $df=15$, $p<0.01$), the Keiser-Meyer-Olkin index of 0.773 was 'good' and the scree plot elbow suggests that the two components be retained. The two factors were renamed based on the items that load on each of them. The first factor was renamed 'EEEnv-Facilities' because the three items loading thereon are mainly related to those that captured the perception of students on the entrepreneurial laboratories or equipment, practical entrepreneurship workshops and lecture halls for teaching and learning at universities. The second factor was renamed 'EEEnv-Inspiration' because they are related to the degree to which they perceived the environment as providing inspiration, motivation and encouragement to the students. The two renamed factors are used in the regression

analysis to explore their influence on entrepreneurship interest and practice among the students. The results of the data analysis are presented and discussed in the next section of this article below.

3. Results and Discussion

The descriptive results presented in Table 1 show students’ responses to parents’ business experience, students’ personal business involvement and interest in starting ventures, perhaps after graduation. Students’ level of interest in starting a business and whether they have taken entrepreneurship education courses were adequately captured. The results show that most students (82.3%) affirmed that their parents had business experience. Most of them (81.8%) also signalled their interest in starting a business while approximately 39.1% of them were already running one form of business or another at the time of the survey. The latter result was expected, as the majority of them are currently expected to pay sufficient attention to their studies and limit any activities that may distract them. Interestingly, however, the rate of business engagement among students is improving over time. For instance, Olofinyehun et al. (2018) revealed improvement in entrepreneurial practices among students in Nigeria. In 2007, 2011

and 2016, the percentage of students engaged in entrepreneurial activity was found to be 26.9%, 27.8% and 36.1% respectively (Adelowo et al., 2021; Olofinyehun et al., 2018; 2022). Conversely, there has not been a consistent increase in the level of entrepreneurial interest among students over time. For instance, over the same period 83.6% of students showed interest in entrepreneurship in 2007, 84.3% in 2011, and 92.7% in 2016, while this figure currently stands at 81.8%. These results are consistent with the findings of research by Sieger (2021) that students’ entrepreneurship intention fluctuates over time, especially as a result of individual differences/preferences and given that the surveys are cross-sectional in nature. When it comes to students’ level of entrepreneurial interest, most students (69.5%) have between high and very high levels of entrepreneurial interest, while few of them have moderate levels of interest and negligible numbers have low and very low levels.

One of the indicators of venture readiness is the development of business plans. The results show that approximately 44% of students had a business plan ready at the time of data collection, indicating their readiness to establish a venture. This suggests that most of the students do not yet have a business plan.

Table 1. Key entrepreneurship activities among undergraduates

Students’ parents have business experience	Frequency	%
No	666	17.7
Yes	3095	82.3
Students are engaged in business		
No	2293	60.9
Yes	1472	39.1
Students are interested in starting their own business		
Yes	3043	81.8
No	677	18.2

Students have created a business plan		
Yes	1517	44.3
No	1906	55.7
Students have taken part in entrepreneurship education		
Yes	2819	74.6
No	962	25.4
Level of interest in starting one's own business		
Very high	1416	43.5
High	847	26.0
Moderate	819	25.2
Low	127	3.9
Very low	47	1.4

Source: calculated by authors

Most students (74.6%) have taken entrepreneurship education courses at university at one time or another. Entrepreneurship courses have been compulsory for all students in tertiary institutions in Nigeria since 2006 when the policy came into force; however, students are free to choose at what point before graduation the course would be taken. In fact, the entrepreneurship course has now been split into practical and theoretical sections, such that students are expected to complete both sections before graduation. For those who have not enrolled in any entrepreneurship courses, they might have more years of study remaining, which provides them with an opportunity to defer the course.

3.1. Predictors of Entrepreneurial Intention at Nigerian Universities

In this section, the key determinants of entrepreneurial intention among the students were explored with particular emphasis on students' perception of universities' entrepreneurial environment, personal entrepreneurial characteristics and entrepreneurship education as clearly stated in the research objective. Here regression analysis was conducted to map and quantify the strength of the relationship between the dependent variable (EI) and the independent

variables (the determinants being PECs, EE and perception of the entrepreneurship environment at universities). The results showed that students' entrepreneurial interest is positively and significantly influenced by entrepreneurship education ($\beta=0.074$, $p<0.001$) and personal entrepreneurial characteristics (PECs) ($\beta=0.178$, $p<0.001$). This suggests that adequate attention should be paid to the two independent variables in the universities to improve students' passion for and drive towards becoming entrepreneurs. This result corroborates earlier findings where EE and PECs contributed significantly to the determination of EI (Olofinyehun et al., 2018; Solesvik, 2019). Similarly, perception of the entrepreneurship environment at universities, broken down further into two factors, namely facilities and motivation/inspiration, was analysed by means of exploratory factor analysis, indicating that motivation/inspiration ($\beta=0.02$, $r<0.001$) had a positive and significant influence on students' EI while facilities ($\beta=-0.03$, $p<0.001$) had the opposite effect. This shows that, beyond entrepreneurship education or the courses taken at university, how students perceive the university ecosystems is germane to determining their inclination towards entrepreneurship, particularly the

‘soft’ components that relate to motivation and inspiration. It could be inferred that facilities alone may not be adequate to stimulate entrepreneurship intention. For instance, based on previous observations, the entrepreneurship classes are usually large (approximately 500 students per class) while the ratio of students to staff is also large (Siyانبola et al., 2012).

For the control variables, marital status and parents’ business experience, the results showed that parents’ entrepreneurship experience ($\beta=0.345$, $p<0.001$) contributed

positively and significantly to students’ EI. This result also reinforces the argument that students whose parents own or run businesses are more likely to see entrepreneurship as a career option (Ilevbare et al., 2022). However, the marital status ($\beta=-0.132$, $p<0.001$) of students showed a significant negative relationship to EI. The overall impression from these results is that the independent variables ($F=191.8$, $p<0.001$) sufficiently explained 26.4% of the key determinants of students’ entrepreneurial interest in the context of Nigerian universities.

Table 2. Regression analysis showing key antecedents of entrepreneurship interest among students

Independent variables	B	Std. Error	T	Sig.
(Constant)	.151	0.045	3.36	.001
Have you previously taken any entrepreneurship courses?	.074	.014	5.416	.000
PECs	.178	.013	14.182	.000
EE: Facilities	-.030	.006	-4.801	.000
EE: Motivation/inspiration	.020	.007	3.123	.002
Marital status	-.132	.022	-6.054	.000
Have either of your parents established or run a business?	.345	.016	22.256	.000
R	51.3%			
R ²	26.4%			
F	191.8**			

Dependent Variable: Entrepreneurship Interest **P<0.001

Source: calculated by authors

In addition, important determinants of entrepreneurial practices among students were also examined using regression analysis. The results, as presented in Table 3, show that entrepreneurial interest ($\beta=0.337$, $p<0.001$), entrepreneurship education ($\beta=0.051$, $p<0.001$) and personal entrepreneurial characteristics ($\beta=0.078$, $p<0.001$) showed a positive and significant relationship to students’ entrepreneurship practices. As expected, interest precedes the actual practice; therefore, the

relationship between EI and EP is expected. Entrepreneurship education or training shows a triggering effect in this study as it contributed positively to the students’ EP. However, the general entrepreneurship environment in the universities, whether in terms of facilities or motivation/inspiration, showed a significant negative relationship to students’ EP. These results suggest that the environment does not support students as they come to practice entrepreneurship.

Table 3. Regression analysis showing key determinants of entrepreneurship practices among students

Independent variables	B	Std. Error	T	Sig.
(Constant)	-.136	.048	-2.838	.005
Are you interested in starting your own business?	.337	.022	14.967	.000
Have you previously taken any entrepreneurship courses?	.051	.019	2.659	.008
PECs	.078	.018	4.298	.000
EE: Facilities	-.032	.009	-3.655	.000
EE: Motivation/inspiration	-.001	.009	-.102	.919
R	32%			
R2	10%3			
F	76.3**			

Dependent Variable: Entrepreneurship Practice

**p<0.01

Source: calculated by authors

Furthermore, the influence of EE on the key entrepreneurship capabilities developed in the students were examined using regression analysis. The overall results, as presented in Table 4, show that EE positively and significantly influences all entrepreneurship skills and the capability that students claimed to have acquired at university, although the strengths of the relationship differ. Specifically, EE influenced students' ability to identify business ideas ($\beta=0.373$, $p<0.001$), ability to develop networks ($\beta=0.167$, $p<0.001$), practical management skills ($\beta=0.306$, $p<0.001$), and increased students' understanding of attitude, values and motivation for entrepreneurs ($\beta=0.302$, $p<0.001$). Moreover, students' ability to grow a business ($\beta=0.232$, $p<0.001$) and understanding of entrepreneurship ($\beta=0.345$, $p<0.001$) were significantly influenced by EE. These results corroborate the existing literature where entrepreneurship education or training influence the entrepreneurship competencies of students (Lee and Eesley, 2018; Olofinyehun et al., 2018; Solesvik, 2019; Lee and Eesley, 2020). In

fact, Leiva et al. (2022) demonstrated that the skills, abilities and values attained by students at Costa Rican universities positively influence their EI, reinforcing the assertion that the university environment, EE and learning programmes are important drivers of EI. Given that entrepreneurship education programmes bring students from various faculties and departments together, there is a greater chance of them being able to build strong networks and competencies needed for their professional lives after graduation, even if they do not end up as entrepreneurs. Moreover, such programmes tend to increase entrepreneurship awareness within the university community and provide students with ability to recognise business opportunities. In a country where unemployment is high, equipping students with entrepreneurship mindsets through education has been perceived as a plausible policy option, particularly when such programmes are reinforced by the establishment of incubators, hubs, business grant competitions and mentorship schemes.

Table 4. Regression analysis showing the relationship between EE and key entrepreneurship capabilities

Dependent variables	Unstandardised Coefficients		t	Sig.	ANOVA (F)	R	R ²	Adjusted R ²
	B	Std. Error						
Constant	0.283	0.050	5.651	0.000	20.65**	0.093	0.09	0.08
a. Ability to grow a business	0.232	0.051	4.544	0.000				
Constant	0.316	0.048	6.618	0.000	49.94**	0.14	0.02	0.02
b. Increased understanding of entrepreneurship	0.345	0.049	7.067	0.000				
Constant	0.356	0.047	7.547	0.000	39.16**	0.13	0.16	0.16
c. Increased understanding of attitude, value, and motivation for entrepreneurs	0.302	0.048	6.258	0.000				
Constant	0.361	0.048	7.531	0.000	39.16**	0.13	0.016	0.015
d. Practical management skills required to start a business	0.306	0.049	6.257	0.000				
Constant	0.379	0.051	7.423	0.000	10.24**	0.068	0.005	0.004
e. Ability to develop networks	0.167	0.052	3.200	0.001				
Constant	0.382	0.043	8.934	0.000	73.05**	0.17	0.03	0.03
f. Ability to identify business ideas	0.373	0.044	8.547	0.000				

Independent Variable: Entrepreneurship Education **p<0.01

Source: calculated by authors

Conclusion and Recommendations

This study sets out to provide empirical insights into the understanding of key determinants of entrepreneurship interest and practice among students of higher education institutions in Nigeria. It sheds light on the relevance of a conducive entrepreneurial environment within the university to support students’ entrepreneurial learning and inclinations. The study further shows how entrepreneurship education influences the entrepreneurial capabilities of the students. The main argument of policymakers for introducing entrepreneurship education at higher education institutions was to overcome the challenge of unemployment by equipping students with

entrepreneurial competence skills. Beyond the introduction of entrepreneurship education, there are other important variables that could encourage or stimulate entrepreneurial interest among the students, particularly personal entrepreneurial characteristics and their perception of the university entrepreneurship environment. The study utilises publicly available large scale datasets collected from six universities in Nigeria (Olofinyehun et al., 2022). Although the datasets contain series of cross-sectional surveys conducted over four periods, in 2007, 2011, 2016 and 2020-2021, this article essentially focused on the latter. This is because the selected dataset contained information related to key research objectives, namely the perception of the

university entrepreneurship environment and skills acquired by the students who participated in EE. Data was analysed using descriptive and regression analysis (OLS). The study has shown that most of the students are interested in entrepreneurship and have taken entrepreneurship courses while only a few of them confirmed that they were running one form of business or another as at the time of data collection. The study further showed a high level of entrepreneurship interest among the students, although only a few of them had developed business proposals, suggesting their readiness to pursue business in case funds and infrastructure are made available to them. As expected, entrepreneurship education, PECs, parents' business experience and perception of the university entrepreneurship environment are important variables that influenced students' entrepreneurial interest at the universities studied. For those of the students who are already running businesses, the key determinants were EE, PECs and entrepreneurial interest. However, a negative relationship was observed between the students' perception of the university environment and entrepreneurial practice, suggesting that the environment does not support student entrepreneurship. A plausible reason for this result could be the weak entrepreneurship infrastructure at the university by means of which to support innovation and entrepreneurship, as well as the large entrepreneurship class sizes (Siyanbola et al., 2012). From a deeper analysis of the relationship between entrepreneurship education and the capabilities acquired by the students, the study found that EE significantly contributed to a series of entrepreneurship competences among the students, particularly their ability to come up with business ideas, develop networks, management skills and their understanding of entrepreneurship as a whole. To further bolster the culture of innovation and entrepreneurship at Nigerian

universities, it is important to establish entrepreneurship infrastructure where theoretical knowledge can be put into practice. Moreover, the creation of an annual entrepreneurship week where students can pitch business ideas and compete for business grants is an important mechanism by means of which to transition from interest to venture creation. The recent Central Bank Entrepreneurship competitive grant initiative by the federal government could be expanded to further stimulate or bolster the culture of innovation and entrepreneurship among university students. Previous studies have shown that the curriculum, delivery system and capabilities are important when it comes to the quality of the entrepreneurship education received by undergraduates (Valerio et al., 2014; Liñán & Fayolle, 2015; Boldureanu et al., 2020; Morland et al., 2021). Therefore, university administrators and faculties could overhaul the content of the entrepreneurship curriculum, the delivery system and the capabilities of faculties to develop skillsets and competences that have positive bearings on national competitiveness and sustainable development plans. Organising inter- and intra-university entrepreneurship competitions where students and faculties could have the opportunity to pitch their business ideas is another important mechanism for turning ideas into business reality. Another plausible option to improve the entrepreneurship environment at universities would be to create a knowledge sharing platform among all Centres for Entrepreneurship Studies in Nigeria where best practices are shared, resulting into the co-creation of an efficient entrepreneurship education delivery system. This initiative could further create entrepreneurship awareness and consciousness at higher education institutions. Additionally, to optimise the potential of students in terms of business creation, a mentorship programme could be introduced where students are attached

to industry to acquire and further enhance their practical skills.

The study is not without limitations, as it relied on a cross-sectional survey through the use of a self-reported questionnaire that cannot be claimed to be entirely free of common bias. However, the fact that the research instrument had already been validated and used over time reduces the likelihood of bias in the study. Further, the questionnaire items were developed through sound theoretical underpinning and crafted in plain language after a series of brainstorming sessions among faculty and practitioners. The process guaranteed that any bias associated with self-reported study was reduced, if not eliminated. Also, to fully understand the impact of entrepreneurship education on entrepreneurship practice among undergraduates, future studies may consider longitudinal or experimental forms.

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Appendix 1

Key items for university entrepreneurship context and results of factor analysis

Component Matrix	Component	
	1	2
The entrepreneurship environment at my university inspires me to develop new business ideas	0.074	0.867
A favourable environment for becoming an entrepreneur exists at my university	0.133	0.850
Students are encouraged to engage in entrepreneurial activities at my university	0.397	0.651
There are suitable entrepreneurial laboratories and equipment for skills acquisition at my university	0.801	0.242
We were exposed to the practical approach of entrepreneurship or businesses in my department	0.817	0.073
There are sufficient lecture halls for entrepreneurship education at my university	0.782	0.165
Variance explained (%)	35	33.15

$\chi^2=6119$. df = 15, $p<0.01$, Keiser-Meyer-Olkin= 0.773

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation

Source: calculated by authors