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Entrepreneurship Education and Entrepreneurial Intention in a Turbulent Environment: The Mediating Role of Entrepreneurial Skills

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Abstract. This study examines the impact of entrepreneurship learning on individual propensities to entrepreneurial activities in the context of a turbulent environment. The paper draws from a cross-sectional survey of 331 students of the University of Maiduguri in Maiduguri Northeast Nigeria, and Bayero University Kano, in Northwest Nigeria — both cities heavily affected by conflict and terrorist insurgency. The results of the structural equation modelling indicate that the impact of entrepreneurship education (EE) on entrepreneurial intention is fully mediated by entrepreneurial and management skills. Further, the results show that entrepreneurial skills have significant impacts on respondents' risk taking and self-efficacy, and EE is an effective moderator of political instability in the sense that EE weakens the negative impact of perceived political instability on entrepreneurial intention. By bringing together the interactions of entrepreneurship education with individual attributes and environmental factors, the paper makes a significant contribution to a new body of research examining the impact of entrepreneurship education on entrepreneurial and micro/small business development in sub-Saharan Africa and conflict contexts. It also highlights the importance of entrepreneurship development as part of a multi-faceted policy intervention in conflict contexts characterised by widespread youth unemployment and alienation from the State.

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1. Introduction

In much of sub-Saharan Africa, the structure of the national economies is such that there are limited capacities within the labour market to absorb graduate job seekers (Bandiera et al., 2022). The typical African employment profile remains dominated by smallholder agriculture (Allen et al., 2018). In the past decade, there has been a significant expansion in the services sector, especially telecommunications, although employment opportunities remain limited (Ndubuisi et al., 2021). Manufacturing, which could have provided significant opportunities for graduate employment, is just beginning to gather some momentum after a steady decline in the past few decades (Kruse et al., 2022). As such, many African countries have grappled with rising graduate unemployment. This is in addition to the worsening crisis of overall youth unemployment. This presents a peculiar socio-economic and human resource challenge to the continent, in terms of the structure and quality of university education, and the overarching need to re-orientate university undergraduates towards job creation, rather than job seeking. Thus, it is expected that provision of entrepreneurship education for university undergraduates will enable the production of highly skilled and capable graduates able to fill the critical gap of job creators markets in African nations — thereby mitigating not only graduate unemployment but overall youth unemployment (Olofinyehun et al., 2018).

The provision of entrepreneurship education in the higher education sector is also set against the backdrop of turbulent institutional environments characterised by political instability, market volatility, derelict infrastructure, and conflict (Christie, 2016; Johnson & Hoba, 2015). This can influence or complicate the willingness of university undergraduates to be interested in and ultimately undertake business start-up, even in the face of limited opportunities in the formal labour market. This study therefore examines the impact of entrepreneurship education in the unique case of Northern Nigeria where Boko Haram insurgency — partly instigated by widespread youth unemployment — has precipitated one of the largest humanitarian crises in the continent.

For several years, intention studies have been at the heart of entrepreneurship research (Krueger, Reilly, & Carsrud, 2000; Liñán, 2004; Mueller, 2011). Scholars have adapted Ajzen's (1991) theory of planned behaviour (TPB) to examine how and why entrepreneurs come to decisions to start new ventures. Broadly, three antecedents of entrepreneurial behavior were identified as: attitudes towards the behavior, subjective norms, and perceived behavioral control (Rajh et al., 2018). Akin to scholarly interests on the theme of intention is the question of if and how entrepreneurs are born or made. Thus, if entrepreneurial attributes are innate qualities that cannot be taught, or skills that

can be acquired by learning. This is a long standing debate (Klinger & Schündeln, 2011). In Europe, for example, policy makers have generally worked under the assumption that entrepreneurship skills can be taught, i.e. that they are not fixed personal characteristics (Oosterbeek et al., 2010). It is believed that, at least, higher levels of entrepreneurial success can be achieved through education in general, and entrepreneurship education (EE) in particular (European Commission, 2006). However, entrepreneurs in Western Europe and other developed countries operate under a different set of institutional conditions, and in contexts where there are more options for formal employment, and entrepreneurial ventures are driven more by opportunity rather than necessity (Iakovleva et al., 2011; Van der Zwan et al., 2016). Such entrepreneurial opportunities across developed markets are strongly supported through well-functioning formal institutions. However, the institutional support in developing economies is limited and in some cases absent, thus hindering the formation of new start-ups (e.g., Khanna & Palepu, 2010).

Scholarly research on EE sometimes fails to grapple with the heterogeneity of EE provisions, and the implication of this for intention studies. Fayolle and Gailly (2008) highlighted three different learning processes in EE: learning to become an enterprising individual, learning to become an entrepreneur, and learning to become an academic. Similarly, Liñán (2004) distinguished between four types of EE: entrepreneurship awareness education, education for start-up, education for entrepreneurial dynamism, and continuing education for entrepreneurs . Thus, not all types of EE are aimed towards entrepreneurial intention. The type of training required is sometimes associated with the growth stage of the enterprise, from existence through survival, success, take off and resource maturity or the individual's stage in the entrepreneurship career path, from foundation to awakening, specialisation, creation, and maturing (Carayannis et al., 2003).

While scholars now agree that certain kinds of entrepreneurial education can contribute to entrepreneurial intentions, it is not clear how this takes place. This is especially the case in turbulent environments such as those observed in developing economies. Some scholars (Bae, Qian, Miao, & Fiet, 2014; Kuratko, 2005; Rauch & Hulsink, 2015) have highlighted the impact of EE on raising positive attitudes towards entrepreneurship. However, relatively fewer studies have examined the role of entrepreneurial skills as a mediator of entrepreneurial intention (Liñán, 2008; Shabbir et al., 2017). In other words, do newly acquired skills or newly improved skills achieved through EE have any positive impact on entrepreneurial intention? This is especially pertinent in challenging institutional environments and conflict contexts, where the specific contents of entrepreneurship education, and the skills acquired through it, can help push the students over the threshold of confidence required to launch new ventures and contribute towards productivity growth (Costin, O'Brien and Hynes, 2022). It is also a pertinent question, because, as previously noted, entrepreneurship

education programmes vary in objectives and curriculum contents and the kinds of transferrable skills they emphasize, and how this influences initial entry into entrepreneurship.

In effect, this study is based on the proposition that entrepreneurship education can shape the development and growth of small businesses in Nigeria and sub-Saharan Africa. The Global Entrepreneurship Monitor routinely reports a high level of entrepreneurship activity in sub-Saharan African countries. However, majority of these are low-growth, necessity ventures typically led by less-educated, low-skilled business owners (Weber et al., 2023). They are invariably trapped in the poverty/subsistence cycle. In an environment where opportunities for formal jobs are limited, and institutions are weak, entrepreneurship skills acquired via entrepreneurship education can help re-orientate university undergraduates to deploy their intellectual capital and professional knowledge towards the creation of high growth ventures that can in turn generate jobs, create wealth, and enhance national productivity. Furthermore, by mobilising the will and resilience to overcome the challenges of the turbulent environments, they will ultimately have helped transform existing institutions, and thereby creating new conditions in which enterprises thrive, opportunities multiply, and conflicts are significantly reduced (e.g., Bullough & Renko, 2013; Caliendo et al., 2020; Renko et al., 2020).

Given the foregoing, the contributions of this paper are in two parts: firstly, it elucidates the critical role of skills as a precursor of entry into entrepreneurship, especially in turbulent environments associated with political instability, policy volatility and institutional uncertainties. The critical role of skills illuminates the self-efficacy pillar in the social cognitive career theory frame work, and its relationship with outcome expectations in relation to entrepreneurial intention and entry. Secondly, and in line with the first, it highlights the importance and potential impact of skills content in entrepreneurial curricula as a key indicator of successful entrepreneurship education where the aim is to encourage more young people into entrepreneurship. The rest of the paper is organised as follows: the next section outlines the theoretical background for this study, followed by the empirical context. This is followed by description of the methodological approach, before a detailed discussion of the results. The paper ends with the conclusion and recommendation for policies and future research.

2. Theory and Hypotheses

2.1. Intention, self-efficacy and outcome expectation in the entrepreneurial process

The use of intention as a key predictor of future action was popularised by Ajzen (1991) in his theory of planned behavior (TPB). According to this model,

intentions to perform behaviors of different kinds can be predicted by attitudes towards the behavior, subjective norms, and perceived behavioral control (PBC). Each of these three components are further divided into sub-components. Thus, attitude can be affective, in terms of whether the planned behavior is enjoyable or unenjoyable; or it can be instrumental, in terms of whether it is harmful or beneficial. Furthermore, perceived behavioral control can be measured in terms of self-efficacy and controllability. Finally, subjective norm can be either injunctive or descriptive (La Barbera & Ajzen, 2020).

However, other scholars have drawn attention to the limitations of intention models of entrepreneurial behaviour. They argue that, while intention models explicate situational and personality factors associated with entrepreneurship, they do not adequately grapple with the complexity and non-linearity of the entrepreneurial process (Liguori et al., 2018; Adebusuyi et al., 2022). In order to bridge this gap in understanding, Lent et al. (1994), drawing from Social Cognitive Career Theory, highlights three key pillars that shape a deeper understanding of the entrepreneurial process: self-efficacy, outcome expectation, and goal representation. In other words, along with intentionality, forethought, self-reactiveness, and self-reflectiveness are all important factors that explain the journey from thought through action and self-evaluative outcomes. Outcome expectations can, for example, influence individual's self-selection into entrepreneurship education programmes or otherwise shape how they apply themselves to learning once in it.

Entrepreneurship education can play a key role in the entrepreneurial behavioural processes outlined in the preceding paragraphs. The first general impact is awareness, although, as noted, awareness can sometimes inform self-selection into entrepreneurship education. It is suggested that, by creating awareness about entrepreneurship opportunities, EE programmes can facilitate a positive change or increase in attitudes of students studying entrepreneurship towards new venture creation (Jena, 2020) However, EE programmes vary in terms of their objectives, their target audience, mode of assessment and evaluation, contents and theories, and methods and pedagogies (Elert et al., 2020; Ratten & Usmanij, 2021; Ndofirepi, 2020).

While awareness may generate initial interest, it is sometimes not a sufficient antecedent of entrepreneurial intention, because the entrepreneurial journey is riddled with risks and uncertainties such that it takes more than mere awareness to elicit firm intention. It is therefore important to interrogate what happens during the entrepreneurship education programme itself, in terms of learning experience and skill development. Thus, we propose the following hypotheses in relation to the potential association between entrepreneurship education and skill development, on the one hand, and the relationship between skills acquired through EE and entrepreneurial intentions:

H_{1a}: Entrepreneurial education has a significant positive impact on entrepreneurial skills.

H_{1b}: Entrepreneurial skills positively mediates the impact of entrepreneurship education on entrepreneurial intention.

To further explicate the potential contributions of entrepreneurship education in relation to the intention of individuals to undertake entrepreneurial activities, it is important to highlight two key attributes at the threshold between general awareness and explicit commitment to pursue entrepreneurship opportunities. These are risk-taking propensity and self-efficacy of individuals in relation to entrepreneurial action. These factors, embedded within the social cognitive career theory, describe the cognitive huddles needed to be scaled by individuals before arriving at a firm initial commitment to entrepreneurial action (Adebusuyi et al., 2022). While these can be sometimes enacted instinctively as natural characteristics, it is not clear if and to what extent participation in entrepreneurship education can induce or enhance risk-taking propensity and self-efficacy. Thus, we propose:

H_{2a}: Entrepreneurial education has a significant positive impact on risk-taking behavior.

H_{2b}: Entrepreneurial education has a significant positive impact on entrepreneurial self-efficacy

In order to unpack the varied and nuanced impacts of entrepreneurship education, this study draws not only from data regarding participation and non-participation in EE programmes, but on specific curriculum content and approach, and participants' perceived learning. These considerations are relevant for understanding universities' strategies for human resource development and talent nurturing. Some researchers highlighted the impact of entrepreneurial competencies on intentions (Ataei et al., 2020; González-López et al., 2021; Krieger et al., 2018).

However, fewer studies have considered the mediating role of entrepreneurial skills on entrepreneurial intention (Lv et al., 2021). As well as adding to limited empirical insight on this, the present study takes a step further by investigating the impact of entrepreneurship education on key entrepreneurial personal attributes such as risk taking and self-efficacy. This is in line with the concepts outlined in the social cognitive career theory framework.

2.2. Entrepreneurial intentions in turbulent environments

Aside from individual factors discussed in the foregoing, our study also examines the impact of institutional environment on entrepreneurial intentions. This is in line with growing interest among strategy and entrepreneurship scholars on the links between institutional environment, entrepreneurial decision making and firm performance (Hiatt & Sine, 2014). Institutions shape firms' behavior, including organizational practices and individual responses to new challenges and opportunities (e.g., North, 1990; Wilkinson & Wood, 2017).

Entrepreneurs also have to deal with varying degrees of uncertainties and instabilities at different stages in the life of their enterprise, and these can

influence initial interest and entry decisions (Chen et al., 2020; Townsend et al., 2018). Turbulent environments are generally characterised by high levels of inter-period change that creates uncertainty and unpredictability, sharp discontinuities in supply and demand, and low barriers to entry and exit (Calantone et al., 2003). Scholars have highlighted three dimensions of environmental turbulence: political instability, economic instability, and perceived danger. Political instability is defined as "the propensity of change in the executive, either by constitutional or unconstitutional means" (Alesina et al., 1996). Economic instability is linked with indicators such as exchange rate volatility (Danmola, 2013; Nakos and Brouthers, 2002)) and drastic or frequent changes in commodity prices (Iwayemi and Fowowe, 2011; Oberndorfer, 2009). Finally, perceived danger is defined in terms of individual's judgement about the extent to which a set of events or circumstances are potentially threatening or harmful (Bullough et al., 2014). This reflects the acknowledgement that individuals can perceive similar events or circumstances differently. Concern for physical safety and personal security can have significant impacts on entrepreneurial activities. It can drive down consumers' demands, and influence entrepreneurs' rational decision making and investors' assessment of risks (Hiatt & Sine, 2014).

In this study, we examine if the turbulent environment has an effect on entrepreneurial intention. Many developing and emerging markets have fluid and unstable institutional environments which are characterized by institutional voids (e.g., Khanna & Palepu, 1997, 2010). Current and potential entrepreneurs face significant challenges across developing and emerging markets in securing support from the formal institutions to start a new venture. This study addresses the specific question of whether or not the dimensions of environmental turbulence highlighted in the foregoing have any negative impact on the entrepreneurial intentions of both participants and non-participants in the EE programme. This question is pertinent because turbulence is not inherently a barrier to entrepreneurial ventures, and entrepreneurship often thrives in chaos (Motley et al., 2023). In developing countries, informal entrepreneurs sometimes thrive better off the radar of formal institutions and governmental scrutiny, although opportunities may be limited down the line as they grow and seek, for example, to internationalise. Lack of job opportunities and widespread poverty, exacerbated by environmental turbulence, may also push individuals to self-select into entrepreneurship. Therefore, to operationalise this, we examine the impact of three constructs — political instability, economic instability, and perceived danger on entrepreneurial intentions. This is captured in the following:

H_{3a}: Political instability negatively influences entrepreneurial intentions.

H_{3b}: Economic instability negatively influences entrepreneurial intentions.

H_{3c}: Perceived danger negatively influences entrepreneurial intentions.

Finally, and following from the above, we examine whether or not entrepreneurship education moderates the impacts of political instability, economic instability, and perceived danger on entrepreneurial intention. This

consideration is linked with previous discussions of the three pillars of social cognitive theory: self-efficacy, outcome expectations and goal representation. Entrepreneurship education can push individuals over the threshold of self-belief and confidence needed to firmly commit to future entrepreneurial pursuits. As EE participants gain more knowledge about potential entrepreneurial opportunities, and as they develop new skills to weather the inevitable storms in the entrepreneurial journey, they are more likely be confident in their ability to achieve expected outcomes against the odds. Conversely, participation in EE can sometimes have the opposite effect of accentuating student self-doubt and disinterest, in the fuller knowledge of the risks and uncertainties associated with an entrepreneur's journey (Oosterbeek et al., 2010, Piperopoulos & Dimov, 2015). In effect, the question as to whether or not participation in EE can help individuals to choose entrepreneurship in the face of turbulence is a matter of legitimate scholarly inquiry. Thus, we raise the following hypotheses:

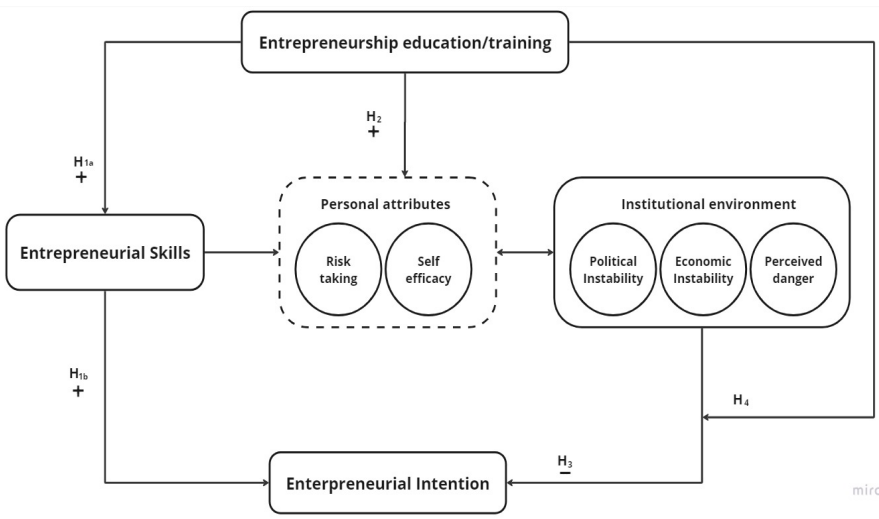
H_{4a}: Entrepreneurship education moderates the impact of political instability on entrepreneurial intention.

H_{4b}: Entrepreneurship education moderates the impact of economic instability on entrepreneurial intention.

H_{4c}: Entrepreneurship education moderates the impact of perceived danger on entrepreneurial intention.

The foregoing discussion highlights how human resources development can be shaped by the interaction between entrepreneurship education on the one hand, and a combination of personal attributes and institutional factors, on the other. We now bring these together in a conceptual model that integrates all the study's hypotheses (see Figure 1).

Figure 1. Conceptual model and hypotheses



3. Empirical Context

3.1. Entrepreneurship education and small business development in sub-Saharan Africa

Research and policy interventions have attracted increasing attention and interests over the past few decades, as many higher education institutions across the world launch new entrepreneurship programmes and interdisciplinary modules outside of traditional business degrees. This is partly in recognition of the imperative of the knowledge economy, as entrepreneurship education is seen as a critical means of equipping students with knowledge, skills and competencies in the knowledge environment (Hynes & Richardson, 2007; Ogunsade et al., 2021). In the knowledge economy, intangible human elements such as knowledge, skills and attitudes are seen as central to the capacity of businesses to achieve and maintain competitive advantage (Aragón-Sánchez et al., 2003; Chi et al., 2008).

In recognition of this, scholars have argued that entrepreneurship education programmes and policies need to focus more attention on the local contexts, as they play a key role in the results of entrepreneurship education (Lindh & Thorgren, 2016). Furthermore, the design and delivery of entrepreneurship education has evolved in its relation to the local business environment. It has shifted from preparing students for readiness and adaptation to the business environment to educating and equipping students to change the local business environment. Thus, better synergy and collaborations between educational institutions and local businesses can not only significantly strengthen, but also potentially transform, existing local development paths. This is also in line with recent conversations on the imperative of a multi-stakeholder approach to entrepreneurship education, bringing together the triple helix of university, industry and government stakeholders (Galvão et al., 2020). Higher education institutions, through the provision of entrepreneurship education, promote the entrepreneurial spirit, thereby increasing the number of business enterprises created and raising the aggregate productivity and development of regions (Galvão et al., 2018). They can also be instrumental for transforming the institutional and business environment, in response to the changing global economic landscape in the knowledge economy.

Since the turn of the millennium, there has been a drastic increase in the rate of higher education enrolment in sub-Saharan Africa. According to one report, the number of higher education enrolment more than doubled from 2,344,000 in the year 2000 to 5,228,000 in 2010 (British Council, 2014). As of 2019, the number of enrolments has increased to 8 million (The Economist, 2019). However, in spite of the significant expansion of access to higher education, sub-Saharan African countries continue to grapple with high rates of youth unemployment, and graduate unemployment in particular. This trend underlines a major challenge with the systems and structure for human resource

development in the continent: there is a general mismatch between the type of graduates produced and the requirements of the industry and the overall structure of the economies. In a continent where there are very limited opportunities for formal employment both in the public and private sector, African countries — perhaps more than any continent — require a strong cohort of graduates who are more oriented to launching new ventures and creating jobs, rather than seeking for "white collar" jobs themselves.

In response to this challenge, many African countries have launched new policy interventions to promote entrepreneurship education, in many instances making it compulsory for all students enrolled in the higher education sector. In some African countries like Botswana, Kenya and Uganda, entrepreneurship education has been introduced in both public secondary schools and tertiary institutions, providing knowledge and skills in business planning, accounting and book-keeping, credit and finance, and marketing, amongst others (Farstad, 2002; Rudhumbu et al., 2020). In Nigeria, the federal government launched a policy initiative in 2002 directing all higher education institutions to introduce entrepreneurship as a compulsory course in their curriculum. The overarching intention was to "reorient young people enrolled in VOTEC and tertiary level institutions towards self-employment and entrepreneurship, and thereby promote an enterprise culture" (Federal Ministry of Education, 2002, p. 14). This specific intervention aimed at the higher education sector is also underpinned by previous findings that educated entrepreneurs tend to start growth-oriented firms and are more effective in expanding businesses. In the Nigerian example, it was expected that enterprise training for university undergraduates can help produce high quality entrepreneurs who, rather than wait for formal employment, can be instrumental in launching new ventures and creating new opportunities for others (Olofinyehun et al., 2018).

3.2. Higher education and graduate unemployment in Nigeria

Since the start of the fourth republic in 1999, the number of higher institutions in Nigeria, and the number of students enrolled in them, has increased significantly. This is partly due to government's liberalisation of the higher education sector, and the attendant licensing of private universities. For example, between 2003 and 2007 alone, the number of universities in Nigeria grew from 53 in 2003 to 128 in 2013 (Akinyemi et al., 2012; Clark & Ausukuya, 2013). Accordingly, student enrolment and graduate turnout have grown considerably over the years, with university enrolment increasing from 780,001 in 2005 to 1,013,337 in 2009 (Shu'ara, 2010).

In spite of the increasing level of graduate turn out in Nigeria, unemployment and poverty have remained high, and graduate unemployment in particular has worsened in recent years. According to official statistics, unemployment rate increased from 11% in 2006 to 24% in 2011, and a great number of those employed are under-employed (World Bank, 2013). The group mostly affected by

the unemployment crisis is the youth, with one report estimating that the unemployment rate among the Nigerian youth is at least three times the national composite average, and three times the average rate for other sub-Saharan African countries (Federal Ministry of Labour and Productivity, 2011).

These statistics reinforce the widely held view that there is a fundamental problem with human resource development in Nigeria. This scenario has potentially severe security repercussions. On the one hand, the population of Nigeria, being the most populous country in Africa with 200 million people and a median age of 18.4, presents the country with an auspicious opportunity to drive growth and prosperity not only in the country but also in the wider region. However, in the absence of an effective educational system and policy initiatives to develop industry-relevant human resources, manage talents and create new opportunities, the large youth population becomes a nightmare scenario for the African nation. In an environment of extreme poverty and limited opportunities, poorly skilled graduates can be easily drawn into a world of violence and criminality, with severe consequences for the nation. The human resource-national security nexus is especially pertinent in the Nigerian context. Within the past two decades, Nigeria has seen an unprecedented rise in militancy and vandalism in the oil-rich Niger Delta areas, human trafficking and kidnapping in the Eastern zone, deadly farmers-herdsmen clashes in the North-central zone, and terrorist insurgency in the Northeast and Northwest zones. Almost all of these conflicts and criminal activities are spearheaded by poorly skilled and unemployed university graduates. With limited capacity and opportunities for value creation, they embraced a path of opportunistic violence and criminal destruction. Our present study looks at the context of terrorist insurgency in the North.

The two locations for this study are University of Maiduguri (UNIMAID) in Borno State Nigeria, and Bayero University in Kano city, Kano State Nigeria. These are the largest cities in the two geopolitical zones mostly affected by Boko Haram terrorist insurgency, and are also host to the two major universities in the two zones, each of which is host to tens of thousands of students. The insurgency has had significant destructive impact on transportation and communication infrastructures, thereby disrupting entrepreneurial activities and cutting off many small businesses and consumers from the market.

4. Method

4.1. Sampling and data collection

This study is based on survey data collected from 331 students of the University of Maiduguri in Maiduguri Northeast Nigeria, and Bayero University Kano, in Northwest Nigeria, studying entrepreneurship courses. The data was collected using a convenience sampling approach, given the study context of Boko Haram

insurgency in Northern Nigeria, the epicentre of which is Maiduguri. While EE is compulsory for all students following a 2002 policy directive from the Nigerian federal government, students partake in the course only in their third and fourth year. Thus, we disaggregated the students who have partaken in the EE programme from non-participants using their years of study. It should be noted that the respondents in this study are outside the traditional Business faculty, and therefore have no exposure to any Business-related modules before their participation in the EE programme. In effect, the extra years in the university vis-à-vis our control group could not have made a significant difference to the student's level of entrepreneurial knowledge and skills, other than their participation in the EE programme. While we recognise that students may have self-selected themselves into other entrepreneurship training programmes, say prior to their university education, this is unlikely to affect the outcomes of our investigation. This is because the underlying assumption of the study is that EE programmes are not homogenous and impact evaluation has to be within the specific context and content of a particular EE provision.

Using self-administered survey questionnaires, relevant information was elicited from respondents about their participation in EE; the details of the EE curriculum content and approach and perceived learning; their perception of environmental turbulence; the type and levels of skills acquired from the EE programme; intention to start a new venture, and the performance of new ventures. As the questionnaires were administered under classroom conditions, we had a high response rate of usable questionnaires at 83%. Detailed explanation about the measurement indicators for dependent and independent variables are provided in the following section.

4.2. Model specifications

In order to investigate these relationships, we ran our analyses in two parts. The first is a structural equation model that includes regression paths from entrepreneurship education, risk-taking and self-efficacy to entrepreneurship intention. It also includes entrepreneurial skill as a mediator of entrepreneurship education, in addition to inclusion of gender and access to formal capital as controls. The measurement model is presented in Figure 2, while the structural model is shown in Figure 3.

In the second part of the analysis, we used OLS, instrumental variables and moderation models to investigate the impact of three environmental turbulence constructs — political instability, economic instability, and perceived danger on entrepreneurial intention. In addition, we investigated the moderating effects of entrepreneurship education on all three environmental turbulence constructs. We ran the SEM model together with OLS because while SEM is well suited for testing mediation hypotheses, it is more complicated to run moderation hypotheses on SEM because of the inherent complexity in modelling interactions of latent variables. OLS enabled us to undertake moderation analysis, along with

the mediation modelling on SEM. Furthermore, we employed the instrumental variables (IV) model (2SLS) to address the problem of endogeneity inherent in OLS models. This enables us to address the problem of common method bias, typically associated with cross-sectional studies. As other researchers have observed, the IV technique is based on the premise that if a common method bias influences both the dependent and independent variables, it can cause the error term for the dependent variables to be correlated with the predictor (Jordan & Troth, 2020). The IV technique therefore introduces additional variables, known as instruments, which effectively act as proxies to isolate the effects of the instrumented variable from the bias. Thus, in our model, we use "Overall System Evaluation (OSE)", as our endogenous variable. This construct was measured using a series of questions to capture respondent's assessment of the overall governance system in Nigeria, with questions such as "we need a change in the way our government is run". Along with this, we used the following instruments: political trust, personal trust, political efficacy, social capital access, and social capital use. The results of the analysis, along with the list of independent variables examined, are presented in Table 6 in Section 5.3.

Figure 2. Measurement model

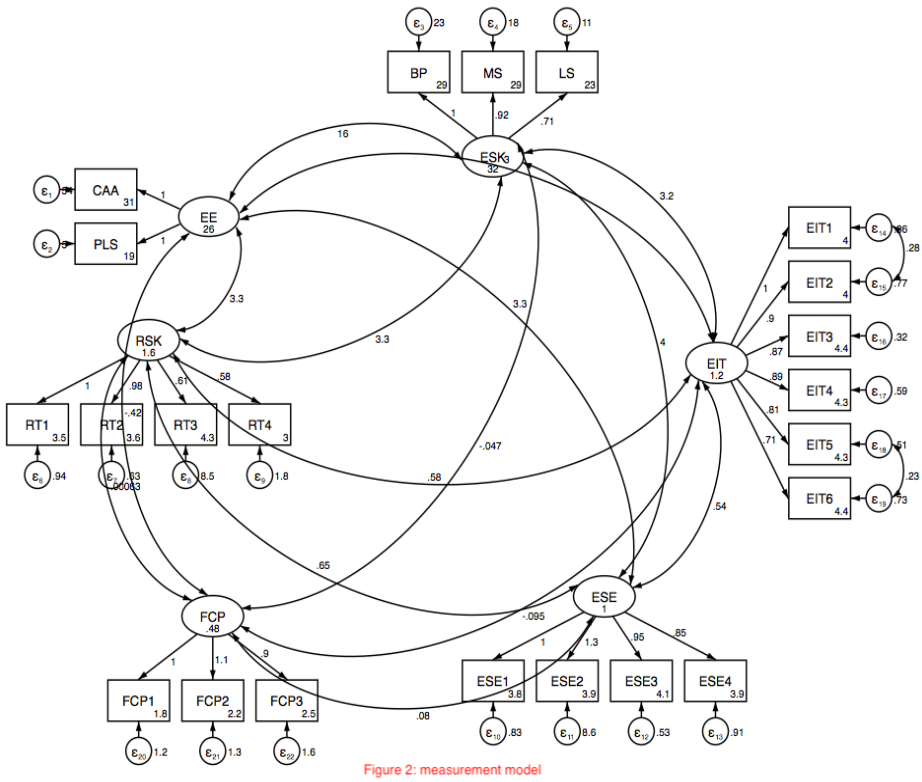
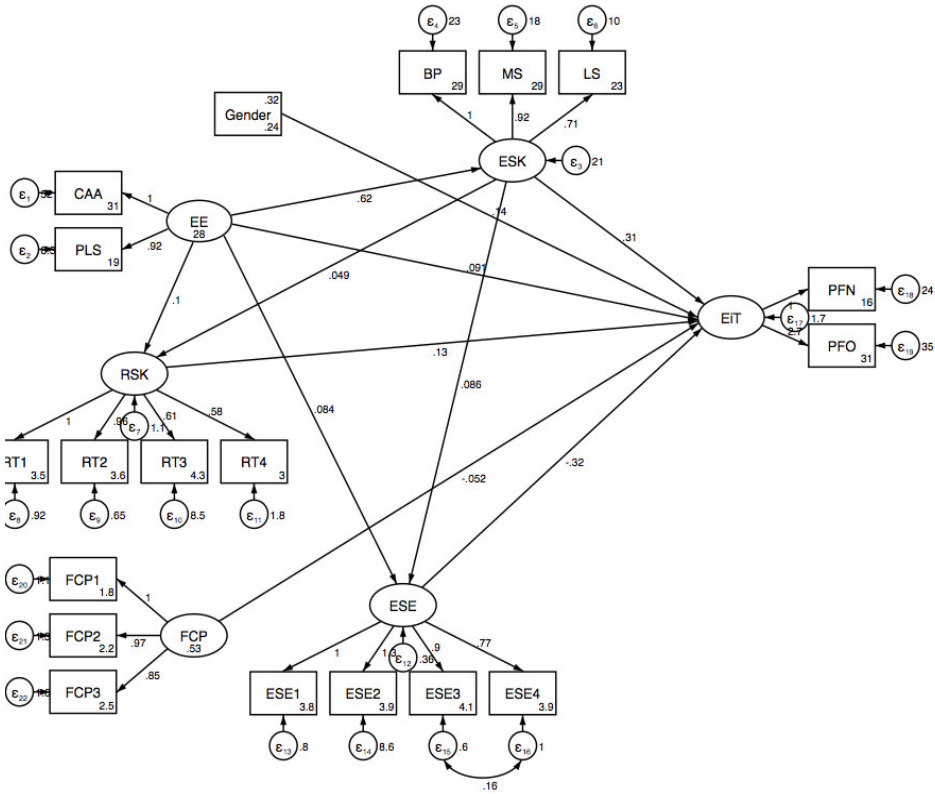


Figure 2: measurement model

Figure 3. Structural model



4.3. Variables and measures

Table 1 provides a summary of the reliability analysis of the observed factors associated with each of the dependent and independent variables. The Cronbach's alpha for all of the variables was higher than the threshold of 0.7. Further details about the indicator factors and items for the variables are outlined below.

Table 1. Reliability analysis

Factors and dimensions	Cronbach's alpha
EE Contents and approach	0.840
Perceived learning skills	0.871
Business planning skills	0.898
Marketing skills	0.889
Leadership skills	0.896
Risk taking	0.714
Entrepreneurial self-efficacy	0.722
Entrepreneurial intention	0.900
Push factors (necessity)	0.747

Pull factors (opportunity)	0.910
Political instability	0.812
Economic instability	0.763
Perceived danger	0.778

4.4. Endogenous variables

The main dependent variable in this study is entrepreneurial intention (EIT). In this study, we recognise two forms of entrepreneurial intentions, one driven by necessity of poverty and unemployment, and the other driven by opportunity for wealth creation. This distinction is important for a number of reasons. First, the study context is one that is characterised by widespread graduate unemployment and poverty. Thus, many graduates will likely be driven by the sheer force of necessity to launch new ventures. However, there will also be those who, in addition to or apart from necessity, would also be pulled by the opportunity to exercise their creative and entrepreneurial talent to create wealth. We posit that, while necessity and opportunity inclinations are distinct factors, they are not necessarily mutually exclusive, but can be mutually reinforcing. An intending entrepreneur can be driven by both necessity and opportunity. Thus, we compute entrepreneurial intention as an aggregate of push and pull factors. The measurement items were adapted from Birley & Westhead (1994) and Moriano et al. (2012). Further details are provided in Appendix 1.

4.5. Exogenous variables

EE is the main predictor examined in this study. As mentioned in Section 2.1, EE is examined as a multi-dimensional construct incorporating curriculum content and approach, and perceived learning and skills. Apart from the question separating EE participants from non-participants, respondents were asked to indicate —in a series of Likert-scale items adapted from Garavan & O'Cinneide (1994) and Souitaris et al. (2007)— how much they have benefitted from specific contents and approach of the particular EE provision, such as theory lectures, applied lectures, workshops and seminars, field projects, learning by doing, written examination and practical examination. By using these specific measures related with the EE provision under study (see Appendix 1 for details), we were able to overcome the challenge of possible self-selection into other EE programmes, either prior to, or subsequent to, their university studies. Similarly, the Likert-scale items on perceived learning and skills focused more on improvement, rather than new acquisition, of skills related to business planning, practical management, networking and opportunity identification due specifically to their participation in the EE programme.

Entrepreneurial skills: Entrepreneurial skills (ESK) is computed as a multi-dimensional construct incorporating business planning, marketing skills, and leadership skills. These were deemed key skills critical for the survival and growth of new ventures in a turbulent environment. The items for measuring

these constructs were adapted from Conant, Mokwa, & Varadarajan (1990) and Hill (2001). For business planning, respondents were asked to assess themselves on skills such as data gathering, predicting and forecasting, setting out plans in written forms, budget planning, and recording and analysing business flows and outflows. Similarly, for marketing skills, items include knowledge of customers and competitors, knowledge of industry trends, accuracy of revenue and profit forecasting, and knowledge of advertising platforms. Finally, the leadership items include questions about the ability to persuade, inspire and motivate others, firm and speedy decision making, and conflict resolution.

Environmental turbulence: Environmental turbulence was operationalised as three distinct variables: political instability (PI), economic instability (EI), and perceived danger (PD). The measurement items for these were adapted from Aisen & Veiga (2013); Jong-A-Pin (2009); and Vogt et al. (2013).

Entrepreneurial self-efficacy: The items used to measure entrepreneurial self-efficacy were adapted from Zhao, Seibert, & Hills (2005). Entrepreneurial self-efficacy (ESE) is defined as an individual's belief in their capacity to perform a task or achieve a set of goals (Bullough et al., 2014; McGee et al., 2009). It is based on an individual self-perception of their competence and skills, and it is, unlike locus of control, task and domain specific (Wilson et al., 2007). Therefore, while locus of control describes an individual's overall belief in their own power to influence outcomes in a wide range of situations, self-efficacy focuses on specific tasks and situations (Hagger et al., 2001). *Risk taking:* In this study, risk taking (RSK) is used as an indicator for attitude towards entrepreneurship. It is generally assumed that entrepreneurs take more risks than non-entrepreneurs, although a number of scholars have suggested that this assertion does not have sufficient empirical support in the entrepreneurship literature (Naldi et al., 2007). Some have argued that an entrepreneur will be more or less likely to take risks depending on their level of competence and skills to analyse the opportunities, predict outcomes, and manage shocks and uncertainties (Krueger & Dickson, 1994). The items to measure risk taking in this study were adopted from Boso, Story, & Cadogan (2013) and Covin & Slevin (1989).

4.6. Controls

Two controls are included in our first model: gender and formal capital (FCP). Gender is measured as a binary outcome (Male=1, Female=0). For formal capital, we asked the respondents to indicate their levels of access to bank loans, venture capital, and other forms of formal capital. Scholars have reported different findings about the impact of CEO gender on firm performance. Khan & Vieito (2013) reported that female-led firms perform more effectively than male-led firms in terms of firm's return to assets. By contrast, Robb & Watson (2012) suggested that, if risk adjusted measures are used, there is no difference in the performance of male and female owned enterprises. Similarly, there is an extensive literature on the impact of access to capital and capital structure on firm

performance (see Fowowe, 2017; Le & Phan, 2017; Li, Su, & Yang, 2012). Here, we focused on formal sources of capital, such as loans and bank savings.

5. Results

5.1. Descriptive statistics

The profile of respondents is presented in Table 2, with respect to key information on participating in the entrepreneurship education course, gender distribution, marital status, and legal ownership of property. We included information on marital status because early marriage is common in the region. Also, legal property ownership is a key requirement for banks and other formal institutions providing loans. Approximately half of the respondents have participated in the EE course, and about two-thirds of the respondents are male. Only about 13% are married, and majority of the respondents do not have legally documented ownership of property.

The correlation matrix of the key variables is provided in Table 3. The table indicates, unsurprisingly, that there are high positive correlations between entrepreneurship education and entrepreneurial skills, and between political instability and economic instability. The table also show negative correlations between many of the environmental factors, especially political instability, and the personal attributes: risk taking and self-efficacy. Gender also appears to be negatively correlated with entrepreneurial intention and many of the personal attributes. These correlations are further investigated in the analyses presented in the following sections.

Table 2. Profile of respondents

EE Participation	Freq.	Percent
No	162	48.94
Yes	165	49.85
Missing	4	1.21
Total	331	100
Course of study		
Natural Sciences	42	12.69
Medicine & Med. Sciences	56	16.92
Engineering	46	13.90
Arts and Humanities	35	10.57
Social Sciences	99	29.91
Missing	53	16.01
Total	331	100
Gender		
Male	209	63.14

Female	109	32.93
Missing	13	3.93
Total	331	100
Marital status		
Single	281	84.89
Married	42	12.69
Missing	8	2.42
Total	331	100
Property ownership		
No	238	71.9
Yes	66	19.94
Missing	27	8.16
Total	331	100

Table 3. Correlation matrix

	Gender	FCP	EE	ESK	RSK	ESE	PI	EI	PD	EiT
Gender	1									
FCP	-0.0255	1								
EE	-0.0468	0.0335	1							
ESK	-0.1298	0.0179	0.7171	1						
RSK	-0.1442	0.0514	0.3376	0.307	1					
ESE	-0.1238	0.0348	0.5041	0.4946	0.2789	1				
PI	0.0801	0.0778	0.0566	-0.0286	-0.0467	-0.0431	1			
EI	0.0898	0.0156	0.0899	0.0747	-0.0131	0.0198	0.6067	1		
PD	0.011	0.1388	0.0008	-0.0827	0.0107	0.0053	0.3055	0.257	1	
EiT	-0.0678	-0.0047	0.4437	0.538	0.2797	0.3069	-0.0282	0.0016	0.0153	1

5.2. Model fit

Table 4 provides a summary of fit indices for both the measurement model and the structural model. Model fitting was carried out using modification indices to undertake cross-loading of selected error terms in iterations of post-hoc analyses. This is after inspecting the theoretical basis of the cross-loadings. Both of the models satisfy the criteria for the key indices explored: CMIN/DF, CFI, TLI and RMSEA.

Table 4. Fit Indices, measurement model and corresponding structural model

Fit Indices	Measurement Model	Structural Model	Model Criteria
CMIN/DF	1.625	1.786	<3
CFI	0.958	0.958	>0.90
TLI	0.949	0.95	>0.90
RMSEA	0.043	0.049	<0.08

5.3. Entrepreneurial skills, risk-taking, self-efficacy and entrepreneurial intention

The results of our structural equation modelling (Table 5) indicates that, as expected, EE has a significant direct effect on entrepreneurial skills 0.6241021 (z-value 7.1). Those who participated in EE programmes reported higher levels of competence in business planning, marketing skills and leadership skills. Furthermore, the inspection of the indirect effects shows that EE does not have a significant direct effect on entrepreneurial intention (EIT), but has a significant indirect effect on intention. The results show that the impact of entrepreneurship education is fully mediated by entrepreneurial skills. These findings are consistent with the theoretical postulation that EE contributes to improved entrepreneurial skills of participants. Further, they expand on existing theory by identifying the mediating role of entrepreneurial skills with respect to entrepreneurial intentions. In other words, persons with higher levels of entrepreneurial skills are more likely to start their new ventures. These results confirm our hypotheses H_{1a} and H_{1b}. Furthermore, the results show that entrepreneurship education has significant direct effects on risk-taking and entrepreneurial self-efficacy. This confirms hypotheses H_{2a} and H_{2b}. Entrepreneurial skill is also found to have significant effects on risk-taking and self-efficacy.

Table 5. Entrepreneurship education, entrepreneurial skills, risk taking, and self-efficacy

Regression paths	Direct Effects	Indirect Effects	Total Effects
ESK<EE	**0.6241021 (7.1)*****	0	**0.6241021 (7.1)*****
RSK<ESK	**0.0491639 (2.53)****	0	**0.0491639 (2.53)****
RSK<EE	**0.100406 (4.45)*****	**0.0306833 (2.53)****	**0.1310893 (6.74)*****
ESE<ESK	**0.086355 (5.45)*****	0	**0.086355 (5.45)*****
ESE<EE	**0.0838077 (4.89)*****	**0.0538944 (4.91)*****	**0.137702 (7.86)*****
EIT<ESK	**0.310841 (4.29)*****	-0.021276 (0.63)	**0.2895654 (5.02)*****
EIT<RSK	0.1336072 (0.81)	0	0.1336072 (0.81)
EIT<ESE	-0.32244 (-0.88)	0	-0.32244 (-0.88)
EIT<EE	0.0912679 (1.53)	**0.16711 (3.32)*****	**0.2583783 (4.71)*****
EIT<Gender	0.1361124 (0.48)	0	0.1361124 (0.48)

EIT<FCP	-0.052134 (-0.19)	0	-0.052134 (-0.19)

Note: ** p<0.05; *** p<0.01; z-values in parentheses.

Table 6 provides a summary of the regression models undertaken to examine the impact of environmental turbulence. All the three models support our hypothesis H_{3a} that political instability (PI) has a significant negative impact on entrepreneurial intention. However, economic instability and perceived danger do not have significant impacts. These findings reject our H_{3b} and H_{3c} hypotheses. Furthermore, Model 2 indicates that entrepreneurship education is an effective moderator of political instability. This supports our hypothesis H_{4a}. However, again in rejection of H_{4b} and H_{4c}, entrepreneurship education does not significantly moderate economic instability and perceived danger. This is in line with the non-significance of economic instability and perceived danger in all three models. Finally, the 2-stage least square model 3 (explained in section 4.2) indicates that Overall System Evaluation (OSE) is not associated with entrepreneurial intention. As in model 1, EE has significant, positive association with entrepreneurial intention, and, in line with models 1 and 2, PI is negatively associated with entrepreneurial intention.

Table 6. Entrepreneurship education, environmental turbulence and entrepreneurial intention

Variables	Model 1 (OLS)	Model 2 (moderation effect)	Model 3 (2SLS)
OSE			0.3169 (1.50)
EE	**0.156*** **	0.07	**0.1419 (7.35)*** **
PI	**-0.1709*** **	**-0.6313** **	**-0.1537 (-2.87)*** **
EI	0.1306	0.3342	0.1044 (1.31)
PD	0.0359	0.0454	0.0146 (0.29)
EE_PI		**0.0056***	
EE_EI		-0.0028	
EE_PD		-0.0001	
Model summary			
No of observations	331	331	331
R-Square	0.2105	0.2268	0.2424
Root MSE	5.414	5.4181	5.298

Note: * p<0.10; ** p<0.05; *** p<0.01; z-values in parentheses.

6. Discussion

In this study we examined the impact of entrepreneurship education on entrepreneurial intention in one of the least examined contexts — Nigeria. We focused specifically on filling the gap in knowledge about the exact mechanisms through which entrepreneurship education influences intentions. The findings

indicate that entrepreneurship education has a significant positive impact on entrepreneurial skills, and entrepreneurial skills mediate the impact of entrepreneurship education on entrepreneurial intention. The first part of the findings on the positive impact of entrepreneurship education on entrepreneurial skills is consistent with the findings of Nabi et al. (2018) who found that students who participated in entrepreneurship education reported higher levels of practical skills. Others have argued that individuals with higher levels of entrepreneurial skills are usually more confident, typically have higher levels of perceived behavioral control and positive attitudes towards new venture creation (Lv et al., 2021; González-López et al., 2021). However, unlike our findings, Nabi et al. (2018) also found that an increase in entrepreneurial skills was not sufficient to lead to intention. In some cases, they found that entrepreneurial skills led to a decrease in intention. On the contrary, our study found that the impact of entrepreneurship education is significantly mediated by entrepreneurial skills. Thus, it is not just participation in entrepreneurship education but often the skills acquired from it, that pushes students through the motions of doubts and uncertainty to embrace the prospects of starting a new business. This is especially important in the developing countries' contexts, where there are reports of entrepreneurial skills gap, and much of entrepreneurial activities are underpinned by necessity and subsistence. The development of entrepreneurial skills and human capital will play an important role in starting new ventures and promoting entrepreneurship (Ataei et al., 2020; Unger et al., 2011). The conflict context of this study is also important as a condition that can potentially discourage entrepreneurial intention. Our results indicate that political instability has a significant negative impact on entrepreneurial intention, but economic instability and perceived danger do not have significant impacts. The impact of political instability reinforces previous findings that political instability hinders entrepreneurship due to higher risk, increase in transaction costs, and lack of government transparency (Dutta, Sobel, & Roy, 2013). With regard to the insignificance of perceived danger, we suggest that this may be linked with residents' embrace of the conflict situation as the new normal, and the sheer survival imperative driving people to entrepreneurship. This view is supported by additional qualitative data from a previous study (Kolade, 2018). Also, entrepreneurs develop resilience capabilities to cope with perceived danger and this shapes entrepreneurial intention (e.g., Bullough et al., 2014). We therefore argue that interest in opportunity-driven entrepreneurship among university undergraduates in Northern Nigeria is significantly enhanced by higher levels of competencies and skills acquired through EE. Previous studies have already shown that EE does have significant impact on entrepreneurial skills and competencies (Din et al., 2016; González-López et al., 2021). This paper synthesises these two findings by illustrating that, while EE has some direct impact on entrepreneurial intention, perhaps by creating awareness and entrepreneurial opportunities, this impact is essentially channelled through acquisition and development of entrepreneurial skills.

Here, EE provision contributed significantly to participants' levels of entrepreneurial skills, in business planning, marketing and leadership skills. Further, as this study shows, entrepreneurial skills significantly influence risk-taking behavior and self-efficacy. This therefore suggests, for example, that individuals with superior business planning skills are effectively informed regarding the opportunities and risks of a new business venture. They are better able to analyse these risks, document them in written forms, and device strategies to harness the opportunities and mitigate the risks. This is even more important in volatile environments characterised by terrorist insurgency, where higher levels of skills can help entrepreneurs to cope. This is consistent with the moderating effect of EE on political instability. Also, the improved ability to forecast risks and predict sales and profits outcomes invariably makes that the EE participants have improved self-efficacy, a key antecedent of entrepreneurial intention. Similarly, those with superior marketing skills are more likely to form positive attitudes towards income opportunities and profit-making potentials associated with new ventures. This aligns with previous research findings that marketing skills are essential for firm performance (Varadarajan, 2020) and survival (Rawwas & Iyer, 2013; Van Scheers, 2011).

This study recognises that individuals can acquire entrepreneurial skills through other means aside from EE, including apprenticeships and some forms of "learning by venturing". However, these sorts of skills learning generally take place after individuals have started a new venture, or have already made up their mind by committing to apprenticeship training, which can be described as a form of EE. Thus, these are forms of post-intention learning and cannot factor as antecedents of entrepreneurial intentions. However, when applied in pre-intention contexts, EE represents a unique instrument of entrepreneurial skills acquisition and development. Even for participants who have some intuitive skills and orientation, participation in EE can at least help them to acquire higher levels of entrepreneurial skills, and such may be enough to move them beyond the threshold of passing contemplation to firm entrepreneurial intention.

7. Conclusion

This study investigates the interaction between entrepreneurship education and entrepreneurial skills on the one hand, and personal entrepreneurial attributes and environmental factors, on the other. Previous studies have focused mainly on the impact of entrepreneurship education on individual factors, with limited attention on the institutional environment. Our study shows that entrepreneurial skills mediate the effects of EE on entrepreneurial intentions in an environment of widespread poverty and terrorist violence in Northeast Nigeria. EE participants who acquire new skills or improve on existing ones through their participation in the EE programme are more likely to be positive and confident about the

potentials and opportunities that new ventures offer, even under such challenging conditions. They also tend to be better equipped in analysing and controlling risks and uncertainties. In effect, they tend to develop concrete entrepreneurial intentions compared to those who did not participate in EE.

In effect, this study highlights the potential instrumentality of entrepreneurship education and entrepreneurial skills in shaping entrepreneurial attitudes of university undergraduates in turbulent environments. This has significant implications for human resource development in Nigeria and countries with similar profiles of saturated formal job markets and limited capacities to absorb new graduates into the workforce. Such countries can benefit from an increasing pool of graduates with the right orientation and requisite entrepreneurial skills to harness their academic and professional knowledge to launch new firms and create jobs.

This study is limited in its focus on undergraduates and recent university graduates in a turbulent environment. Whether or not they have participated in EE, university students and graduates possess a level of generalised human capital that is higher when compared with the rest of the population. They tend to be more adaptable to changing and challenging circumstances and they generally have more options in terms of job opportunities. This is in line with the observation of Lindh & Thorgren (2016) that entrepreneurship education can equip participants to change, not just adapt to, the local business environments. University participants in EE programmes can play the dual role of business as well as institutional entrepreneurs in conflict contexts as they find and develop new ways of doing business. In future studies, we aim to investigate the impact of EE aimed at uneducated and less educated youth both in conflict and more settled environments.

In terms of practical recommendations, there is scope for investment in incubators and mobilisation of peer mentors (Badwan, Tamvada, & Rentocchini, 2022) to drive entrepreneurial skills and intention to start a new venture. University incubator and accelerator spaces provide an auspicious opportunity for aspiring and nascent entrepreneurs to deepen their knowledge and sharpen their skills, thereby enhancing their self-efficacy and raising their outcome expectations in their entrepreneurial journey. In addition, entrepreneurship programmes in Nigeria can draw more value from better designed job placements and consultancy projects for students to access experiential learning that complements the knowledge gained in the classroom. Alumni organisations can play important roles in this, either directly as industry partners taking on student as interns or as entrepreneurs in residence in university entrepreneurship programmes. They can also be involved indirectly by providing linkages with other industry partners interested in taking on aspiring student entrepreneurs. Given the potential of EE in facilitating skill development and promoting entrepreneurial intentions leading to new venture creations, governments should invest more in capacity building, funding support and quality control for

entrepreneurship centres. In the Nigerian context, government interventions have to go beyond issuance of directives to HE institutions about compulsory EE, to support for continuous training of staff responsible for design and delivery of EE programmes. Furthermore, it is recommended that entrepreneurship programmes should run two tiers of skill training, one at the generalised level of skills applying to all disciplines. The second at a more specific level, with respect to the different needs of, say, science and engineering graduates and students. Given the significance of specificity highlighted in this study, this approach of bespoke training is likely to be more effective and efficient in achieving the desired outcomes of intention, new venture creation, business survival and entrepreneurial performance in turbulent environments.

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Appendix 1: Overview of measuring items and sources

A.ENVIRONMENTAL TURBULENCE	
How problematic are the following obstacles for the operation and growth of a business? Use a scale of 1 to 5, where 1= no obstacle; 2= little obstacle; 3=moderate obstacle; 4=high obstacle; and 5=very high obstacle.	
Political instability	
Terrorist violence	
Ethnic tensions	
Religious tension	
Street crime	Jong-A-Pin (2009) & Aisen & Veiga (2013)
Corruption	
Policy instability	
Industrial/labour strikes	
Riots/demonstrations	
Economic instability	
Exchange rate	
Fuel price	
Inflation	Aisen & Veiga (2013)
Bank failures (banks shutting down e.g. Oceanic Bank)	
Taxes and regulations	
Perceived danger	
I feel in great danger of being wounded e.g. losing a limb	
I am concerned that I would encounter an explosive device, e.g. Roadside bomb	
I am concerned that I may be kidnapped by insurgents	Vogt et al. (2013)
I am concerned about being trapped in a cross-fire of insurgents and government forces	
I am concerned about catching an infectious disease	
I thought I would never survive	
B.ENTREPRENEURIAL CHARACTERISTICS	
Risk Taking	
I can take risks with my money	
I am willing to accept financial and career risks when necessary	Covin & Slevin (1989); Boso et al. (2013)
I like to try new foods, new places and totally new experiences	
I will take a major risk within the next 6 months	
Entrepreneurial self-efficacy	
Using a scale of 1 to 5, where 1= no confidence, 3=neutral and 5=complete confidence, please indicate how confident you are in:	
successfully identifying new business opportunities	
creating new products	
thinking creatively	Zhao et al. (2005)
commercialising an idea or new development	
C.ENTREPRENEURSHIP EDUCATION	
Please indicate how much you have benefitted from the following contents and approaches to entrepreneurship education on a scale of 1 to 5, where 1= not at all, 3=neutral and 5 = a lot	

Content and approach	
Theory Lectures	
Applied lectures (practical instructions)	
Workshops and seminars (within the university)	
Workshops and seminars (outside the university)	Garavan & O'Cinneide (1994)
Field projects (e.g. fishery, poultry, etc)	
Learning by doing (in the lab, factory, workshop, etc)	
Assessment: written examination	
Assessment: oral examination	
Assessment: practical examination	
13a. Please indicate your assessment of what you learned about entrepreneurship on a scale of 1 to 5, where 1= not at all, 3=neutral and 5 = a lot	
Perceived learning and skills	
To what extent did the training increase your understanding of the motivation of entrepreneurs (i.e. why do entrepreneurs act?)	
To what extent did the training increase your understanding of the actions someone has to take in order to start a business (i.e. what needs to be done?)	
To what extent did the training enhance your practical management skills in order to start a business (i.e. how do I start the venture?)	Souitaris et al. (2007)
To what extent did the training enhance your ability to develop networks (i.e. who do I need to know)?	
To what extent did the training enhance your ability to identify an opportunity (i.e. when do I need to act?)	
D.ENTREPRENEURIAL SKILLS	
Please indicate your self-assessment on the listed entrepreneurial skills by rating on a scale of 1 to 5, where 1= Poor, 2= Weak, 3= neutral, 4= Good, and 5= Very good	
Business Planning	
Goal setting	
Gathering, organising and analysing data	
Diagnosing problems and their causes	
Predicting and forecasting	(Hill, 2001; Powerofbusinessplanning.com)
Setting out plans in written forms	
Evaluating and comparing courses of action	
Budget planning	
Recording and analysing business inflows and outflows	
Marketing skills	
Knowledge of customers	
Knowledge of competitors	
Knowledge of industry trends	
Accuracy of revenue and profit forecasting	Hill (2001); Conant et al. (1990)
Ability to differentiate service offerings vis-à-vis other service providers	
Knowledge of pricing strategies	
Knowledge of traditional advertising platforms (e.g. handbills, posters, radio, TV)	
Knowledge of non-traditional advertising platforms (social media, internet, etc)	
Leadership skills	
Ability to persuade others of my viewpoints	
Ability to negotiate effective and make transactions with others on favourable terms	
Ability to inspire others to be motivated to work hard	Gupta et al. (2004)
Ability to induce group members to work together	
Ability to make decisions firmly and quickly	
Ability to resolve conflicts	

E.ENTREPRENEURIAL INTENTIONS	
16. Please indicate to what extent are/were you influenced to start a business due to the following factors. Rate your answers on the scale of 1 to 5, where 1= no influence, 3=neutral and 5 = to a great extent	
Push factors(necessity)	
Unemployment	Moriano et al. (2012); Birley & Westhead (1994)
Retrenchment/loss of job	
Low paying job with little upward mobility	
Desire to escape supervision	
Pressure to provide for family	
Pull factors (opportunity)	
To take advantage of an opportunity that appeared	Moriano et al. (2012); Birley & Westhead (1994)
Desire for high earnings and wealth increase	
Need to achieve something and get recognition for it	
To achieve a higher position for myself in society	
To have considerable freedom to adapt my own approach to my work	
To have greater flexibility for my personal and family life	
To be innovative and be in the forefront of technological development	
To develop an idea for a product	
F. GOVERNANCE/POLITICAL LEGITIMACY	
Overall system evaluation	
I am proud of many things in our federal government	
We need a big change in our form of government	
We need a big change in the way the federal government is run	
We should keep our form of government the way it is	